

Result 2.2 Three-level centres of professional excellence "Green Economy for SMEs" and transnational platform

Part C Implementation, Evaluation & Business Models

Implementation reports, Evaluation concept and report as well as business models for the continuation of the centres of vocational excellence

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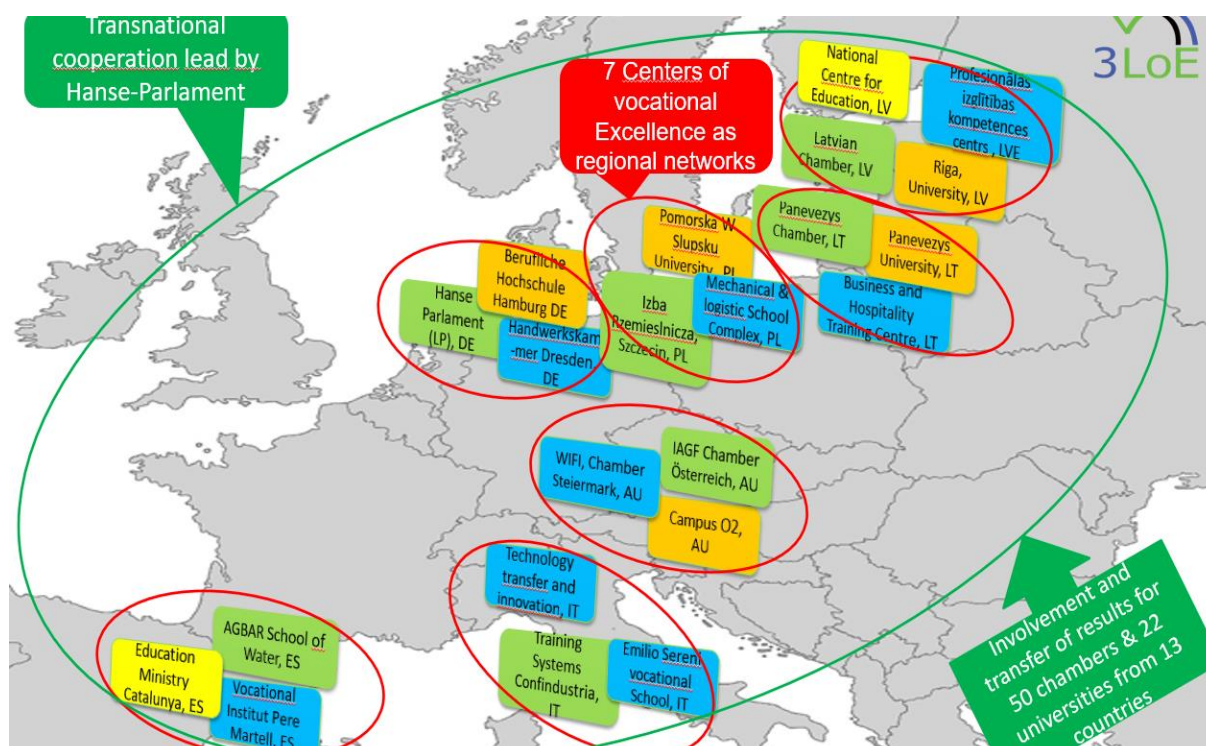
Hanse Parliament



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1 Introduction

1.1 Summary of the Project

Around 99% of all EU businesses are SMEs, creating up to 70% of all jobs. In general, SMEs have good growth prospects for the future and are particularly well equipped to solve environmental problems and to enhance the green economy. However, in most of the project countries, SMEs are confronted with a shortage of skilled workers and young entrepreneurs. This shortage of skilled workers is even more alarming taking into account that due to aging of current entrepreneurs, a large and growing number of companies will have to be handed over to the next generation. Furthermore, young specialists and entrepreneurs often lack the qualifications and skills needed in order to respond to contemporary developments in the fields of energy, climate and environmental protection. The following problems have been identified in SMEs working in the fields of green economy, energy and environmental protection:

- Blatant and growing shortage of skilled workers.
- Large qualification deficits, especially in the Green Economy.
- Loss of attractiveness and low qualification of school-based VET.
- Low rates of further training and insufficient orientation of offers to SME needs.
- Ageing of entrepreneurs and increasing shortage of young people (demographic change).
- Failure of business transfers and low rates of business start-ups.
- Low innovation rates and insufficient productivity.
- Not enough cooperation between universities and SMEs and a lack of teaching geared to SME needs.
- Comparably low internationalization of SMEs and vocational training providers.
- Lack of national level support for SMEs”.

To meet these challenges, work-based learning and new paths in vocational training must be provided through cooperation between educational institutions, economic chambers and SMEs. University graduates are often well-qualified in theory, but lack practical knowledge, skills and abilities that are crucial for SMEs. For this reason, VET reforms must also involve higher education, and should implement dual bachelor's degree programs that combine a bachelor's degree with vocational training and on-site work in companies.

In the 3LoE project, an innovative and complex project structure with 22 project partners from 7 countries as well as 60 associated partners from 13 countries was designed. In each country, centers of vocational excellence (COVEs) in Green Economy will be established, managed and their permanent continuation ensured. A transnational cooperation of the centers will be developed, extended to 60 education stakeholders from 13 countries and operated permanently in an institutionalized form. The centers will offer a wide range of dual education measures in vocational training, further education and higher education, that are being developed, tested and evaluated in the project. These educational measures on EQF levels 3-7 focus on Green Economy, Digitalization and Entrepreneurship. Furthermore, vocational and educational consulting and innovation support for SMEs will be developed and implemented. In total,

seven Train-the-Trainer programs will be developed and implemented permanently by the project partners. All results will be transferred to the 60 associated partners together with implementation advice.

The objectives and aimed outcomes of the 3LOE project can be summarized as following:

1. Foundation of a three-level Center in each project country

1.1 Building the "Green Economy" skills alliance for qualifications in SMEs with educational and economic actors from the 7 project countries; development of information and cooperation tools.

1.2 Expansion of the skills alliance to the 60 associated partners from 13 countries, comprising chambers of commerce, SME associations, as well as universities of applied sciences/colleges.

1.3 Development, testing and evaluation of a curriculum and teaching materials for Train the Trainer courses for personnel and center management (vocational school-teachers, trainers in SMEs and lecturers in further and higher education institutions).

1.4 Evaluation of the construction and operation of the seven centers of Excellence and of the transnational cooperation.

1.5 Development of business and financing plans and ensuring the long-term continuation of the seven centres and transnational cooperation.

1.6 Development, consulting and introduction of political strategy program.

2. Implementation and realization vocational training

2.1 Development and implementation of a tool for vocational and qualification counselling as well as a training for consultants and teachers to use the tool.

2.2 Implementation of the dual system, so that work-based learning is put into practice in the project countries.

Preparation and transfer of curricula and examination regulations for dual vocational training for different professions and implementations in Poland, Lithuania, Latvia and Spain.

Development, test and implementation Trainings for teachers to conduct dual vocational training as well as Training of trainers in SMEs.

2.3 Development political concept for the training and integration of young people with learning difficulties for young people with learning difficulties (EQF level 3).

Development, test and implementation of a dual vocational training "Specialist for Building Insulation".

2.4 Development, testing and evaluation of education program, teaching materials and examination regulations for the provision of sector-specific qualifications already during the initial vocational training for stronger learners. Implementation in the dual system, so that work-based learning is put into practice in the project countries.

2.5 Development and implementation five-year technician training „Ecologic Solutions in Logistics”.

3. Implementation and realization of further vocational training

- 3.1 Development and implementation of concepts and instruments for the management of continuing vocational training.
- 3.2 Development, test and implementation of a Train-the-Trainer program for teachers to conduct further training.
- 3.3 Development and implementation of a concept "SME-fair digitalization" as well as development, test and implementation of two train the trainer programs “Basic and advanced digital skills”.
- 3.4 Transfer and implementation of four further trainings Energy Saving and Renewable Energies.
- 3.5 Preparation, transfer and implementation of six further trainings in the Green Economy.
- 3.6 Development, testing and evaluation of different training programs and teaching material for owners, managers and qualified workers of SMEs (EQF level 5 and 6). The trainings are specifically tailored to SME needs and different qualification levels and combine the transfer of technical, professional and management know-how.
 - Training Enterprise and Entrepreneurship in Green Economy
 - Training Energy Service Manager
 - Trainings vocational Master Carpenter and Electric
 - Training Construction Technician
 - Training Service Technician
 - Training Sustainability in foodservice industry
- 3.7 Development of regulations for new continuing education occupational profiles with a focus on the green economy.
- 3.8 Development of an integration program for the unemployed (EQF level 4) in order to be able to place the unemployed in permanent jobs through further training seminars and a further training qualification.

4. Implementation and realization of higher education

- 4.1 Preparation and transfer of curricula, evaluation and examination regulations for two existing dual Bachelor degree programs "Management of Renewable Building Energy Technology" and "Business Administration for SMEs”.
- 4.2 Development and beginning of implementation of new dual Bachelor degree programs
 - Business Administration & Sustainable Management of SMEs
 - Entrepreneurship and Innovation in Green Economy
 - Logistics - Green Supply Chains
 - Service technician
 - Tutorial “Sustainable management Climate neutrality for companies”
- 4.3 Development, test and implementation of four study modules (EQF level 6) on SME management in the Green Economy sector, which will be carried out in the dual study system and integrated into existing Bachelor degree programs.
- 4.4 Development and implementation of concept for innovation promotion Solutions for manageable R&D tasks of SMEs and conducting manageable R&D projects for SMEs-

4.5 Development, testing and implementation of Training program for university lecturers and SME advisors.

5. Dissemination, transfer and use of the project results

5.1 Development of a concept and summary evaluation of the dissemination results of all partners

5.2 Transfer of all educational measures to 60 educational institutions in 13 countries and needs-oriented implementation consultations as well as realization of a bundle of measures for further dissemination of the project results.

5.3 Further dissemination activities such as presentations online, at third-party events, press releases and conferences.

5.4 Book with all results of the project and distribution via book trade.

For each of the three levels of educational measures there will be:

- Target-group-specific educational programs.
- Curricula, teaching materials, etc. developed in a leading role by the educational institutions of the respective level, whereby the educational institutions of the other levels (in particular universities) participate in an advisory and supportive manner.
- Representatives of the participant target groups involved in the development work.

All educational measures will be tested with the respective target groups under different national conditions in the countries, evaluated and completed on the basis of the evaluation results with application notes.

Analyses of the economic and demographic development, the education and labour markets as well as the qualification needs of SMEs in the Green Economy were conducted to provide the basis for a common point of departure for carrying out the project work.¹ They form the starting point for the subsequent development of concepts for the establishment and permanent operation of seven regional centers of excellence in seven EU countries. In the development of these strategic concepts, the experience gained from already operating VET centers of excellence in Germany and Poland were taken into account.²

1.2 About Implementation, Evaluation & Business Models

To meet the challenges, a regional center of vocational excellence in the Green Economy is being set up and operated permanently in each of the seven project countries. The three-level centers are intended to perform vocational training and innovation support tasks for SMEs at the following levels:

Level: Vocational training (EQF Level 3 and 4)

Level: Further training (EQF Level 4 to 6)

Level: Higher education (EQF level 6 and 7)

¹ Result 2.1 Analysis of economic, demography, education and labour markets & recommendations.

² Establishment of two-stage industry competence centers of vocational education and training, Baltic Sea Academy, Hamburg 2020

A concept for the establishment, development and ongoing operation of the centers of vocational excellence was developed on the basis of comprehensive analyses of the challenges, current bottlenecks and foreseeable developments³.

Towards the end of the third project year, each COVE developed country-specific strategies for the work and in particular for the continuation of the COVE and discussed and agreed these with regional stakeholders⁴.

Coordination by Hanse-Parlament, a transnational cooperation between the eight centers of excellence is being established and developed, with ongoing exchange of information and experience, transfer of knowledge and best practice, implementation of development work based on division of labour, joint implementation of train-the-trainer programmes, mutual personnel support as needed.

The establishment, work and international cooperation of the eight centres of vocational excellence are comprehensively evaluated. The evaluation results are continuously fed into further work, resulting in a continuous improvement process.

All activities developed and implemented in the project are geared towards a permanent continuation after the end of the project. In order to ensure a high degree of sustainability, business models will be developed, discussed and bindingly decided upon during the project period for the continuation of the work of

- a) the seven centres of vocational excellence and
- b) the coordination by the Hanse-Parlament and the international cooperation.

Result 2.2 Three-level centres of professional excellence "Green Economy for SMEs" and transnational platform is presented in three parts:

- ✓ Part A Concept: Development and Implementation of Three-level Centers of Excellence of Vocational Training in Green Economy.
- ✓ Part B Development and Implementation of Information & Cooperation Tools and transnational Cooperation by involving associated Partners.
- ✓ Part C Implementation reports, Evaluation concept and report as well as business models for the continuation of the centres of vocational excellence.

Following a summary of the results of the development of the 8 COVEs, Report C presents the realized international cooperation, and the implementation concepts for each COVE. This is followed by a concept for evaluating the 8 COVEs and evaluation reports. Report C concludes with the binding plans for the long-term continuation of the COVEs established in the project and the international cooperation.

³ Result 2.2 Three-level centres of professional excellence "Green Economy for SMEs" and transnational platform, Part A Concept

⁴ Result 2.4 Political strategy and action program

2. Summary of the development of the COVE

In the 3 LOE project, eight COVEs in Austria, Germany, Italy, Latvia, Lithuania, Poland and Spain were set up and developed with great success by the project partners in the respective countries. Co-operation in the COVEs is based on binding co-operation agreements and, in one case (COVE DE Hamburg), on a national law. Numerous other regional and national educational institutions and organizations are involved as partners in all COVEs. All 8 COVEs work intensively with companies, especially SMEs, which contribute their needs through direct contact, help shape funding and training programs, participate in trials and carry out R&D projects with universities.

The COVEs in the individual countries have been organized in such a way that all educational tasks can be carried out at EQF level 3 - 7, namely:

- Vocational schools that provide initial vocational training in the dual system with companies, are involved in continuing vocational training and participate as educational partners in dual bachelor's degree programs.
- Chambers of Industry, Commerce and Crafts, which ensure the involvement of companies in all COVE activities, encourage companies to participate in dual vocational training and dual study programs, are particularly active in continuing vocational training and provide ongoing advice to companies.
- Colleges and universities that contribute to the development of curricula and teaching materials for initial and further vocational education and training and provide teaching staff for their implementation where necessary, as well as developing and implementation dual bachelor's degree programs in particular and providing innovation support for companies in connection with this.
- The additional involvement of ministries in the COVE of two countries (Latvia and Spain) has had a very positive effect on the work of all COVE. They have clarified legal regulations and administrative matters, played a key role in the development and implementation of legal regulations (e.g. creating state-recognized continuing education qualifications), helped develop political strategy programs and carried out evaluations.

Cooperation within the individual COVEs and internationally between all COVEs is promoted through biannual workshops, four international conferences, seven train-the-trainer seminars, the provision of cooperation tools and models, online meetings and an ongoing exchange of experience. This support is essential, but even more effective for the development of regional and international cooperation was the simultaneous implementation of joint concrete work. Various tools and advisory programs, over 40 vocational training programs at EQF level 3 - 6 and R&D projects with and for SMEs were jointly developed and implemented.

The work was carried out in international cooperation between vocational schools, chambers with their educational institutions and universities. Partners from individual countries jointly developed tools, curricula, teaching materials, examination regulations, etc., which were trialed and evaluated in several countries in order to record

different national conditions. After revision and finalization based on the evaluation results and adaptation to national conditions, the tools, curricula etc. were transferred to all eight COVEs, which received implementation advice. In this way, 36 comprehensive results were produced in the 3LoE project.

Each of the eight COVEs takes into account the respective national and regional development strategies. Based on local and regional needs and challenges, the COVEs make a decisive contribution to achieving the specific objectives and strategies for regional development, innovation and smart specialization. To this end, the individual COVEs have held numerous events, conferences, workshops and direct dialogues with the relevant regional stakeholders. Through the needs-oriented development and implementation of funding and education programs, strong effects were achieved for regional developments in accordance with the respective regional strengths and needs.

70 associated partners (chambers, associations, vocational schools and universities from 13 countries) were involved in the international cooperation of the 8 COVEs, contributing their experience and knowledge from the start of the project, taking part in workshops and conferences, advising on results and planning their own implementations. The associated partners received all results and individual implementation advice as required.

All 8 COVEs will be continued in the long term and funding has been secured. The 8 COVEs will continue to implement the education and advisory programs and develop new education programs, which have already been planned by the individual COVEs.

International cooperation between the 8 COVEs and with the 70 associated partners will also be continued in the long term; funding has also been secured for this and the Hanse-Parlament will take on coordination tasks.

Summary COVE Austria

COVE Austria is formed and supported by

- Institute for Applied Business Research of the Austrian Federal Economic Chamber,
- Economic Development Institute of the Steiermark Chamber of Commerce and
- the Campus 02 University of Applied Sciences of the Styrian Chamber of Commerce.

All three 3LoE partners are already organizationally linked to each other via the Chamber of Commerce, and a binding cooperation agreement has also been concluded. Other educational institutions and organizations as well as numerous sectoral business associations and guilds from all over Austria are also involved at regional and national level, particularly via the chambers of commerce.

The COVE AU has benefited greatly from the 3LoE project and international cooperation and has itself developed and implemented extensive further education pro-

grams, dual study programs and recognized further education qualifications at EQF Level 5, as well as carrying out R&D projects with SMEs.

The COVE and international cooperation will continue in the long term and funding has been secured. Further partners will be included in the cooperation in the future; some have already been specifically approached and have agreed to participate. The funding and education programs developed in the project will continue to be implemented after the end of the project. The development of new educational programs, including their financing, is already planned.

Summary COVEs Germany

In the 3LOE project, only the development of a COVE in Dresden was initially planned, which could be set up with the support of the project partners from Hamburg No. 1 Hanse-Parlament and No. 3 Hamburg Vocational Academy. During the course of the project implementation, a second COVE was developed in Hamburg in Germany. Both COVE cooperate intensively with each other.

Summary COVE DE Dresden

At the start of the project, the Dresden Chamber of Skilled Crafts used national funding to build extensive new premises and technical equipment for an Energy Efficiency advice and training centre. This Energy Efficiency Centre - Competence Centre for the Green Economy was developed as COVE Dresden as part of the 3LOE project. The following partners are involved through binding cooperation agreements:

- Dresden Chamber of Crafts, which is also responsible for coordination
- Vocational School Centre for Technology "Gustav Anton Zeuner" Dresden
- EIPOS GmbH, European Institute for Postgraduate Education (an institution of the Technical University of Dresden)
- STIEBEL ELTRON GmbH & Co. KG

The COVE Dresden works very closely with SMEs via the Dresden Chamber of Crafts. Consultancy and training programs (EQF Level 4 - 6) with a thematic focus on energy efficiency have been developed and implemented.

In international cooperation, COVE Dresden has contributed its extensive experience, curricula, teaching materials, etc. in dual vocational training and master craftsman training in particular and has provided advice on the implementation of dual vocational training by other COVEs from countries where vocational training has so far been predominantly school-based.

The long-term continuation of COVE Dresden, including funding, the further implementation of the advisory and educational programs developed in the project and the development and implementation of new educational measures are assured. COVE Dresden cooperates closely with COVE Hamburg and will also continue its international cooperation with all other COVEs and the 70 associated partners from 13 countries after the end of the project.

Summary COVE DE Hamburg

As North German universities of applied sciences and universities were not prepared to offer dual bachelor's degree programs at the time, the Hanse-Parlament approved 2005 the establishment of the Hamburg University of Cooperative Education with the Hamburg Chamber of Crafts. The Hamburg University of Cooperative Education successfully runs dual study programs for SMEs and was involved in the 3LOE project as partner no. 3.

At the start of the project, the federal state of Hamburg decided to establish a state vocational university to run dual bachelor's degree programs, which began operating in 2023. The academic staff and degree programs of the Hamburg University of Cooperative Education were transferred to the new Hamburg Vocational University, which was included as a new partner in the 3LOE project.

The COVE principles were anchored in a law on the foundation and operation of the Vocational University Hamburg. The Vocational University is obliged to cooperate with vocational schools and to implement educational programs together with companies as training partners on an equal footing. Chambers, associations and other stakeholders are bindingly involved in the committees of the Vocational University Hamburg.

The COVE, which is thus established on a legal basis, is dedicated to the following tasks:

- a) Implementation of dual vocational training (EQF Level 3 and 4) by vocational schools and SMEs with the support of the Vocational University.
- b) Development and implementation of further vocational training programs (EQF level 5 to 6) by vocational schools and with other partners (chambers, associations, etc.) with the support of the Vocational University.
- c) Development and implementation of dual Bachelor's degree programs by the Vocational University together with the training partners companies and vocational schools.
- d) In conjunction with dual Bachelor's degree programs, innovation promotion for companies by the Vocational University.

COVE Hamburg has been very successful in developing and implementing dual study programs and carrying out R&D tasks. A new dual Bachelor program "Business Administration & Sustainable Management of SMEs" has been developed.

In international cooperation with all other COVEs, COVE Hamburg has contributed its extensive experience, curricula etc. to dual study programs. The existing dual study programs "Management of Renewable Building Energy Technology" and "Business Administration for SMEs" as well as four study modules "Green Economy" were prepared and transferred. COVE Hamburg provided comprehensive advice on implementation in countries that previously had no dual study programs, such as Lithuania. The development and implementation of other new dual study programs by COVE Austria, Latvia, Lithuania and Poland were comprehensively advised and supported.

The continuation of COVE Hamburg, including funding, has been secured. The further education courses and degree programs developed in the project will continue to be carried out, the development of new degree programs has already begun, and a new degree program is to be implemented from October 2024, or 2025 at the latest.

COVE Hamburg has developed and implemented a summer school with COVE Poland, which will be continued intensively after the end of the project and expanded to other countries. In the international cooperation with all COVEs and the 70 associated partners, the COVE Hamburg will continue to be active after the end of the project and play a significant role.

Summary COVE Italy

The COVE Italy is formed and supported by

- Trasferimento Tecnologico e Innovazione Scarl, a development, consultancy and education institution of the Northern Italian Chambers of Commerce and Industry
- Sistemi Formative Confindustria SCPA, a business association from Rome
- Emilio Sereni, a vocational school from Rome (Coordination).

Colleges and universities were not initially involved. The greater distance between the partner from northern Italy and the two partners from Rome may appear to be a difficulty at first glance, but it actually proved to be a stroke of luck. Several chambers of commerce and industry, other vocational schools and various universities were involved in COVE Italy through cooperation agreements, resulting in a dense, active, large-scale COVE network from northern Italy to Rome. Companies are very intensively involved in all COVE activities via this network.

COVE Italy has dedicated itself to the following tasks in particular:

- a) Developing and introducing dual vocational training in the agricultural sector with a particular focus on the green economy.
- b) Implementation of comprehensive vocational training programs in cooperation with universities to a particularly high degree.
- c) Together with universities, implementation of Green Economy study modules and preparation for the introduction of dual bachelor's degree programs.
- d) Implementation of R&D tasks in SMEs by the universities involved.

COVE Italy is particularly interested in international cooperation with all COVEs and has benefited in particular from the development and implementation of dual vocational training and dual courses of study as well as the transfer of continuing vocational training programs.

The long-term continuation, including funding, of COVE Italy with all partners has been secured. Dual vocational training and further vocational training will continue and the implementation of dual courses of study will be actively promoted. International

cooperation will also continue without restriction, and new development projects with COVEs in other countries have already been prepared.

Summary COVE Latvia

COVE Latvia is formed and supported by:

- the vocational school Profesionālās izglītības kompetences centrs "Liepājas Valsts tehnikums" (Coordination).
- Latvian Chamber of Crafts.
- Rīgas Stradiņa Universitāte.
- Valsts izglītības satura centrs (National Center for Education).

The cooperation is based on binding cooperation agreements, in which the Latvian Chamber of Commerce and Industry, Riga Technical University, Latvian University and other vocational schools will be involved as the project progresses. Intensive cooperation with companies is ensured via the participating chambers.

COVE Latvia has dedicated itself to the following tasks in particular:

- a) Development and introduction of dual vocational training.
- b) Development of vocational training programs together with other COVEs
- c) Transfer and implementation of vocational training and master craftsman training to a particularly large extent.
- d) Development of a new dual bachelor's degree program "Entrepreneurship & Innovation in Green Economy", which will be implemented from October 2024.
- e) Development of political strategy programs and implementation of evaluations.

COVE Latvia has benefited particularly strongly from international cooperation, especially with regard to the transfer of curricula and the implementation of dual vocational training, the transfer and implementation of continuing vocational training programs and the development and introduction of dual bachelor's degree programs.

The continuation of COVE Latvia, including funding with all partners, has been secured. Dual vocational training, continuing education programs, dual bachelor's degree courses and R&D projects with SMEs will be continued intensively. The development and implementation of new further education programs for SMEs as well as the transfer and implementation of further dual bachelor's degree courses are already being prepared. COVE Latvia will also continue to be intensively involved in international cooperation with the seven other COVEs and the 70 associated partners from 13 countries after the end of the project.

Summary COVE Lithuania

COVE Lithuania is formed and supported by:

- Vocational school Verslo ir svetingumo profesinės karjeros centras (coordination)
- Panevėžys Chamber of Commerce, Industries and Crafts

- Panevezys University of applied science

The cooperation is based on a binding cooperation agreement, in which additional partners (professional associations, local industries, VET schools and universities) were involved in the further development of COVE.

COVE Lithuania has organized a particularly large number of regional conferences, workshops, etc. with companies and stakeholders and has dedicated itself to the following tasks in particular:

- a) Development, introduction and implementation of dual vocational training.
- b) Development and implementation of specific dual training programs for young people with practical talents and theoretical weaknesses.
- c) Development and implementation of vocational training programs.
- d) Transfer and implementation of a dual bachelor's degree program "Business Administration for SMEs" and development and implementation of a dual degree program "Electrical and Automatic Equipment."
- e) Realization of R&D projects with SMEs.

COVE Lithuania has been heavily involved in international cooperation with all other COVEs and has benefited in particular from:

- Transfer and implementation of dual vocational training.
- Transfer and implementation of numerous further education programs.
- Transfer and implementation of dual bachelor's degree programs.
- Joint development and international support in the development of curricula for dual vocational training, continuing vocational training and dual bachelor's degree programs.

The long-term continuation, including funding, of COVE Lithuania has been secured. The dual vocational training, further training programs and dual bachelor's degree courses developed in the project will continue to be implemented in the future. An update of the dual bachelor's degree programs and the development and implementation of new further education programs for SMEs are already being prepared. The continuation of international cooperation with all other COVE and the 70 associated partners from 13 countries is also assured. The realization of international projects, student exchanges and teacher and staff mobility exchanges are planned.

Summary COVE Poland

The COVE Poland is formed and supported by:

- Izba Rzemieslnicza Malej i Sredniej Przedsiębiorczosci (Chamber of Crafts Szczecin)
- Zespół Szkół Mechanicznych i Logistycznych im. inż. Tadeusza (Vocational School, Coordination)
- Akademia Pomorska W Słupsku

The cooperation is based on a binding cooperation agreement, which later included the Chamber of trade and industry Slupsk and the higher school of economy in Slupsk. The creation of an independent legal form for COVE Poland is currently being examined.

COVE Poland has dedicated itself to the following tasks in particular:

- a) Transfer and introduction of dual vocational training and development and implementation of dual vocational training programs "Electrician" and "Fitter of fixtures and fittings in building industry".
- b) New development and implementation of a five-year dual technician training program "Ecologic Solutions in Logistics".
- c) Transfer and implementation of numerous vocational training programs.
- d) Transfer of the system of dual bachelor's degree programs and new development and implementation of a dual degree program "Logistics - Green Supply Chains".
- e) Development and implementation of a summer school together with the Hamburg University of Vocational Education.

COVE Poland is particularly involved in international cooperation and has benefited in particular from:

- Transfer and implementation of dual vocational training.
- Transfer and implementation of further education programs.
- Transfer and implementation of dual Bachelor programs.
- International summer school.

The continuation of COVE Poland, including funding, is assured. All educational programs developed in the project will also be implemented in the future. The planning and preparations for two new dual study programs "IT" and "Security Sciences" as well as the development and implementation of a new five-year technician training program are already well advanced. The continuation of international cooperation with all other COVE and the 70 associated partners is also assured. International cooperation is being continued intensively with own resources, concretely planned are new projects, new initiatives (e.g. student exchange) and new networks.

Summary COVE Spain

COVE Spain is formed and supported by:

- Departament D'educació-Generalitat de Catalunya (Ministry of Education of Catalonia)
- Institut Pere Martell (vocational school, coordination)
- Sociedad General De Aguas De Barcelona S.A. (large national and international water management company that develops and organizes many vocational training courses)

The collaboration is based on a binding cooperation agreement. At the start of the project, no university or chamber of commerce was involved in COVE Spain. In the

course of COVE's development, COVE work was incorporated, and binding co-operation agreements were concluded with Tarragona Chamber of Commerce and Industry and with the Universitas Rovira i Virgili.

COVE Spain has dedicated itself to the following tasks in particular:

- a) Transfer and introduction of the dual system of vocational training and development and implementation of the dual training program "Electromecanico".
- b) Transfer and implementation of additional qualifications for young people with strong learning skills during vocational training.
- c) Transfer and implementation of many further training programs in the green economy.
- d) Conducting manageable R&D projects for SMEs.

COVE Spain is extensively involved in international cooperation with all other COVEs and has benefited in particular from the transfer and introduction of the dual system of vocational training, the transfer of further training programs and from joint development work.

The long-term continuation of COVE Spain, including funding, has been secured. Dual vocational training will be continued and extended to other professions, the further training programs developed will also be implemented in the future and the realization of dual bachelor's degree courses will be examined together with the university involved in the COVE.

COVE Spain is very interested in international cooperation and will continue to be heavily involved in this in the future.

Experience with three-level COVE

Three main actors (vocational schools, chambers and universities) are involved in the work of the Centres of Vocational Excellence together with a wide range of local partners, such as other vocational education and training providers, enterprises, research centres, development agencies and employment services (among others) developed "competence ecosystems" that contribute to regional, economic and social development and far-reaching promotions for SMEs.

All COVE partners report that the cooperation between vocational schools, chambers and universities is extremely enriching with strong cross-fertilization aspects. According to the experience of the project partners, the three-stage COVE structure with the inclusion of universities and full coverage of EQF levels 3 to 7 is essential for the following reasons.

- In order to attract enough skilled workers and young entrepreneurs, the attractiveness of vocational education and training must be significantly increased. A central starting point for this is the creation of complete permeability between vocational and higher education as well establishing a framework

which will allow the crediting and recognition of already acquired competences within various EQF level courses.

- More and more school leavers want to pursue higher education - especially at the strong insistence of their parents. This massive demand for skilled workers has not been filled due to the general view that vocational further education degrees are considered by many to be “pseudo-university degrees”, for example, comparing the vocational master craftsman training with the degree "Bachelor professional".
- The competence requirements for entrepreneurs and skilled workers are high and growing. However, SMEs are only able to attract a very limited number of new recruits from the large number of conventional courses study graduates, because although they are theoretically well qualified, they do not have the urgently required practical skills and professional experience. With dual courses of study, which combine vocational training with a bachelor's degree, or with trial courses of study, which combine vocational training, further education and higher education, SMEs can attract and gain the urgently needed next generation of highly qualified entrepreneurs and skilled workers and can overcome the excessive shortage in this respect.
- Traditional courses of study have high drop-out rates, for example in Germany over 30% on average and in technical courses even over 50%. In combined vocational and higher education courses the dropout rates are demonstrably reduced. And the remaining, much smaller proportion of dropouts in dual study programs obtain at least a vocational qualification.
- In a number of EU countries, for example in Poland and the Baltic states, the human, spatial and technical capacities for continuing education are severely limited. These existing bottlenecks can be overcome by involving colleges/universities in CVET.
- New learning content and methods need to be urgently implemented in vocational education and training. This makes it essential for universities to be involved in the corresponding development and implementation work, and for teachers to be appropriately qualified.
- In SMEs there is a great need for research and development in general and for its' realization with the help of digital technologies in particular. In this regard, colleges/universities must be strongly committed and make decisive contributions to solutions.
- Collaboration between universities and small and medium-sized enterprises (SMEs) has been far too limited to date, and there is a great need for assistance and support in SMEs. In connection with dual courses of study, in which SMEs are equal training partners of the universities, comprehensive and precise innovation promotion of SMEs by universities can and must be realized at the same time.

3. Results of the international Cooperation

3.1 Cooperation of COVE and with associated Partners

One of the main objectives of the establishment and development of the eight COVEs is the realization of intensive international cooperation between the COVEs. To achieve this goal, various support measures were implemented in the project.

The lead partner has taken on the coordination of international co-operation and ensured the written, electronic and personal exchange of information and experience. Tools for co-operation and information were developed and implemented.

A total of 12 workshops, usually lasting two days, were organized. At the beginning of the project, the workshops had to be held online due to the coronavirus pandemic. At all workshops, a great deal of space was dedicated to getting to know each other personally and exchanging experiences.

To promote cooperation in the centres of vocational excellence and to train the use of all tools and training measures developed in the project, seven Train the Trainer programs were developed, practically tested and evaluated during the project period. After revision and completion of the Train the Trainer programs based on the evaluation results, the programs were transferred to 24 colleges and universities, which will carry out these trainings on an ongoing basis after the end of the project.

- Training program for personnel and center management for the development and ongoing operation of COVE and the promotion of international cooperation.
- Training for consultants & teachers to use tools for information and cooperation and the tool for qualification counselling,
- Training for teachers to conduct dual vocational training and for intensive co-operation with companies.
- Training for teachers for the ongoing development of the needs of the companies and their employees, ensuring fruitful cooperation and to conduct further trainings.
- Training for teachers Basic Digital Skills.
- Training for teachers Advanced Digital Skills.
- Training for university lecturers and SME advisors for the realization of dual Bachelor degree programs, the promotion of innovations and the implementation of R&D projects in SMEs.

According to the evaluation by the project partners, the workshops and especially the train-the-trainer seminars were particularly important and effective for the development and consolidation of intensive international co-operation. As the train-the-trainer programs will continue to be carried out by 24 universities in the future, it is ensured that new employees of the partners and additional institutions will be trained and involved in international cooperation in all regions in the long term.

This support is essential, but even more effective for the development of regional and international cooperation was the simultaneous implementation of joint concrete work.

For the development, testing, evaluation, completion and implementation of the educational and promotional measures of the 3LOE project, nine international working groups were formed by partners from the various COVEs, which carried out the work together, utilizing the preparatory work and experience of the other COVEs and transferring the results to the partners of all 8 COVEs following consultations within the entire project consortium.

1. An international working group of partners from COVE Austria and Germany has developed a tool for vocational and qualification counselling, which has been tested and implemented by all COVEs.

2. An international working group of COVE partners from Germany, Poland, Lithuania, Latvia and Spain has analyzed the German dual system of vocational education and training as well as training regulations for four occupations and, on this basis, developed country-specific dual training courses for electricians, motor vehicle mechanics, fitters of fixtures and fittings in the building industry and cooks, which have been tested, evaluated and implemented in countries where school-based vocational training has been used to date.

3. An international working group of partners from COVE Germany, Latvia and Poland has developed three alternative training of trainers in SMEs according to the needs in all seven COVE countries, which have been tested, evaluated and implemented by COVE in all countries so that qualified trainers are available in the companies in all participating countries to carry out dual vocational training.

4. An international working group of partners from all COVEs has developed six training courses for imparting additional qualifications in the green economy to young people with strong learning skills in initial vocational training, which were trialed under various national conditions, evaluated and implemented by all COVEs after completion.

5. An international working group of partners from COVE Latvia, Lithuania and Italy has developed, tested, evaluated and implemented a further education program Enterprise and Entrepreneurship in Green Economy.

6. An international working group of partners from all COVEs developed six training programs specific to SMEs in the green economy, which were tested and evaluated under various national conditions and implemented by all COVEs after completion.

7. An international working group of partners from COVE Germany, Latvia and Poland has prepared two German master craftsman training programs "carpenter" and "electrician", adapted them to different national conditions, tested them, evaluated them and transferred them to all COVE after completion.

8. An international working group of partners from COVE Austria, Germany and Lithuania has developed regulations for new continuing education occupational profiles with a focus on the green economy, which have already led to national regulations for recognized continuing education qualifications (EQF Level 5) in Germany and Austria. On

this basis, all other COVES are now also pursuing the realization of state-recognized continuing education qualifications.

9. An international working group of partners from COVE Austria, Germany, Latvia, Lithuania and Poland has prepared the German system of dual Bachelor's degree programs as well as two existing dual degree programs "Management of Renewable Building Energy Technology" and "Business Administration for SMEs" and transferred them to all partners. On this basis, 5 module handbooks were developed for new dual study programs "Business Administration & Sustainable Management of SMEs", "Entrepreneurship & Innovation in Green Economy", "Electrical and Automatic Equipment", "Logistics - Green Supply Chains" and "Service technician", which were implemented by the COVE Austria, Latvia, Lithuania and Poland, which have not yet implemented dual study programs, together with companies.

This international joint work has proved extremely successful. The different experiences and preparatory work in the individual countries were used extensively, the specific strengths and capacities of the individual partners were combined and dual systems of vocational education and training, further education and higher education in all COVE released in a comparatively short time and a large number of new educational programs in the green economy at EQF level 3 - 6 were developed and successfully implemented. As different national conditions were already taken into account in the development work and the trialing took place under different national conditions, this also promoted and secured transfers and implementations in other countries.

In the evaluations and interviews conducted by an external expert in the first and second year of the project, three partners rated the international cooperation as only average and called for it to be intensified. In contrast, the evaluations and expert interviews in the fourth year of the project led without exception to excellent and very good assessments of the international cooperation. All partners would like to see a continuation of international cooperation, which is also secured through various measures and binding agreements (see chapter 7).

Coordination by Hanse Parlament, a transnational cooperation between the seven centers of excellence have established and developed, with ongoing exchange of information and experience, transfer of knowledge and best practice, implementation of development work based on division of labor, joint implementation of train-the-trainer programs, mutual personnel support as needed, for example provision of lecturers or assumption of advisory tasks. The international cooperation of the 8 centers of vocational excellence also concerned the joint implementation of educational programs, e.g., Bachelor's programs with a double degree.

In the transnational cooperation of the 8 centers of vocational excellence of the project, teachers and other staff of the centers were intensively involved and short internships and study visits were organized in centers in other countries, especially in the more advanced countries Germany and Austria. In addition, teachers were sitting in on the

trials of educational measures in other countries in order to gain experience for their own implementations.

The SMEs involved in the project are also included in the transnational cooperation so that international experience can be gained, contacts established, and international cooperation opportunities explored.

In the 3rd LOE project, international cooperation was expanded to include 70 institutions from 14 countries:

- a) 50 economic chambers, SME associations, VET providers and vocational schools and
- b) 20 higher education institutions.

These 70 educational and support institutions were involved in the 3LOE project as associated partners. This ensured that the 70 associated partners from 13 countries, as transfer recipients and implementation partners, use the project results themselves in their countries/regions and implement them on a permanent basis. Following the example of the 3LOE project, centers of vocational excellence are also to be developed in these countries in the medium term.

The associated partners are members of the Hans-Parlament and were involved in the work from the start of the project as part of its day-to-day business. They continuously contributed their needs, experience and knowledge to the further project work and advised on interim results. They received all results in written and electronic form and were given individual implementation advice.

Additional measures were implemented to promote and permanently strengthen international cooperation between the associated partners and the eight COVEs:

- Targeted involvement of associated partners in development work by the international working groups 1. to 9.
- Invitation and participation of associated partners in train-the-trainer programs.
- Lecturers from associated partners were invited as observers to the trials so that they could gain experience for their own implementations.
- Four international conferences were held in Panevezys, Vienna, Budapest and Riga, which were attended by all COVE partners, representatives of the associated partners and other stakeholders in order to present interim and final results, to provide personal advice and to plan transfers and their own implementations.
- In conjunction with the conferences, four half-day workshops were organized with the COVE partners and associated partners in order to identify differentiated conditions and needs, promote the personal exchange of information and experience and comprehensively support the implementation of project results by the associated partners.

- All concepts, tools, curricula, instructions for implementation etc. were made available in written and electronic form and associated partners received individual implementation consultations as needed.

The 70 educational institutions and SME promoters have intensively accompanied the establishment and development of the eight COVEs, received first-hand information, benefit from the international exchange of information and experience and received all project results so that they can implement them themselves on a permanent basis with advice from the COVE partners and develop their own COVEs in their countries.

This intensive cooperation of the eight COVE and the 70 associated partners will be continued intensively under the coordination of the Hans-Parlament after the end of the 3LoE project. Extensive use is also made of conferences, meetings, workshops, members' meetings, etc., which the Hanse-Parlament holds as part of its daily business.

By involving 70 associated partners from 13 countries, the work of the 3LoE project was strongly promoted and the transfer and implementation of project results was achieved on a very broad regional basis. The greatly expanded international co-operation was evaluated through interviews conducted by an external expert. The associated partners assessed this co-operation very positively and, without exception, would like to see it continued. International cooperation with all COVE and associated partners is secured after the end of the project (see Chapter 7).

3.2 Summer school⁵

3.21 DESCRIPTION OF THE ACTIVITY “DEVELOPMENT OF A SUMMER SCHOOL”

As part of the 3LoE project, the idea arose to strengthen cooperation within the three-level center of professional excellence and the transnational platform for “Green Economy for SMEs” through a transnational short-term exchange of students from the participating universities, with the aim of establishing cooperation in this area beyond the end of the project.

The concept for the summer school was developed jointly by BHH (PP24 BHH) and UPSL (PP6 APS) as part of the work package 5. The exchange is also an example of a possible international networking of COVEs (work package 2).

The summer school was to be held as part of the elective module “Strategic Sustainability Management” in the bachelor study program “Business Administration” at BHH and realized as a one-week study trip to Poland at the beginning of the module. Approx. 30-40 hours of the total workload was to be completed during the stay. The remaining workload and the final examination were to be completed during the current semester.

On-site courses at the Pomeranian University of Słupsk on the topic of sustainability management were planned to be held in cooperation with lecturers from the UPSL. These courses should include, for example, lectures, workshops and case studies,

⁵ Prepared by Prof. Dr. Joachim von Kiedrowski and Nele Hellmold, Berufliche Hochschule Hamburg, Germany

lectures by practitioners/entrepreneurs and excursions to local companies, chambers, or business associations.

Furthermore, the idea of including Gdansk Tech (a partner in another EU project to establish COVEs) as an additional host for the study trip was discussed, in order to expand the experience of the summer school.

Finally, the summer school is also intended to give BHH students the opportunity to meet and exchange ideas with Polish and other international students at the partner universities. This should give the participants a variety of impressions about study and work opportunities, the economy and everyday life in Poland.

3.22 PREPARATION OF THE CONTENT AND PROGRAM OF THE SUMMER SCHOOL

The content and program of the summer school were planned and established jointly by the participating universities between July 2023 and September 2024. For this purpose, several online meetings took place, as well as an on-site visit by the BHH to Poland (July 1-3,2024).

Implementation of the Summer School in October 2024

The planned summer school was held from 6 to 12 October 2024 with 12 participating students from the elective module “Strategic Sustainability Management” and two BHH staff members.

Schedule of the study trip

Day	Time	Subject	Notes
SUN 6.10.24	± 20:00	Arrival in Słupsk	Arrival at Gdansk Airport at 3:50 pm, bus transfer from airport to Słupsk
		Quick supper (to be paid individually)	Stopover at student canteen (“Jazz Kitchen“, underground, main building of UPSL), <u>ul. Westerplatte 64</u>
		Check-in at student dorm	Drop off at student dorm No 1, <u>ul. Arciszewskiego 22 a</u>
MON 7.10.24	7:50	Meet at entrance of student dorm	Joint departure to UPSL (approx. 10-minute walk)
	8:00 - 8:45	Breakfast (to be paid individually)	Student canteen UPSL
	9:00 - 9:50	Official welcome at the UPSL Prof. Anna Babicka - Wirkus, Vice Rector UPSL for Students	

		Dr. Ewa Matuska - Director of Institute of Management	Campus (yellow building), Room 68, <u>ul. Kozińskiego 6-7</u>
		Prof. Włodzimierz Strelcow – International students at Institute of Management	Presentation of the study opportunities at UPSL
	10:00 - 12:00	Lectures	Campus (yellow building)
		10:00 - 11:00	Room 68
		Prof. Andrzej Buszko	
		Introduction to sustainability, corporate social responsibility & corporate governance	
		11:10 - 12:10	Room 66
		Prof. Magdalena Ziolo (online)	
		Sustainable finance and ESG	
	12:30 - 13:00	Campus tour	Erasmus office
TUE 8.10.24	13:20 - 14:20	City tour	Erasmus office, bus transfer
	14:30 - 15:30	Individual lunch at the city centre	
	Afternoon	Free time	
	19:00	Joint dinner (included)	Restaurant “Cechowa”
	± 8:00	Breakfast (to be paid individually)	Canteen at student dorm
	8:30	Bus transfer to company	Pick-up at student dorm
	9:00 - 10:30	Company visit: <u>Markos</u> Reference to the topic of sustainability/CSR Director’s for sustainability issues introduction, meeting with students from 3LoE project, company tour	Bus transfer to UPSL after company visit
	11:00 - 12:00	Meeting with students of Institute of Management (students scientific circle and their tutors)	Campus (yellow building), Room 68
	12:00 - 13:00	Lunch (included)	Student canteen UPSL
	13:30 - 15:00	Company visit: <u>Aerosol Service</u> (Ustka)	Bus transfer from UPSL to Ustka

		Reference to the topic of sustainability/CSR	
	Afternoon	Free time in Ustka	With UPSL students Individual return from Ustka to Słupsk by public transport
	Evening	Individual dinner	
Day	Time	Subject	Notes
WED 9.10.24	8:00	Meet at entrance of student dorm	Joint departure to UPSL
	8:15 - 9:00	Breakfast (to be paid individually)	Student canteen UPSL
	9:15 - 12:00	Lectures	Campus (yellow building)
		9:15 - 10:10 Prof. Blanka Tundys (online) Smart city - sustainability aspects	Room 66
		10:15 - 11:30 Prof. Włodzimierz Strelcow European green deal and regional development	Room 68
		11.30 - 12:00 Dr. Ewa Matuska Discussion about further projects on sustainability	Room 68
	12:15 - 13:15	Lunch (included)	Student canteen UPSL
	Afternoon	Departure to Gdansk	Bus transfer
	Evening	Check-in at Apart Hotel Neptun Free time / individual dinner	Apart Neptun, Grzaska 1, 80-833 Gdańsk
THU 10.10.24	± 8:00	Breakfast (included)	
	9:00	Meet at hotel entrance	Joint departure to Gdansk Tech
	10:00	Welcome at the Faculty of Management and Economics	Traugutta 79, 80-233 Gdańsk
	10:15 - 12:30	Workshop	15 students from BHH (12) and Gdansk Tech (3)
		Dr. Anita Richert-Kaźmierska	

		Topic: „How to communicate the sustainability efforts effectively“	
	12:45 - 13:45	Lunch (included)	HYDROSTACJA restaurant at the GdanskTech Campus
	14:00 - 15:00	Campus tour	M. Dobrzyński, Department of Promotion
	Afternoon	Guided tour of the Old Town of Gdansk	
	Evening	Joint dinner (included)	Restaurant “Chleb i Wino” (Stągiewna 27)
FRI 11.10.2 4	11:00 - 13:00	Company visit: Elektrociepłownia PGE Energia Ciepła w Gdańsku (energy plant)	Wiślna Street 6, Gdansk
	Noon	Lunch (to be paid individually)	
	14:00 - 17:00	Guided tour of the European Solidarity Centre	
	Evening	Free time / individual dinner	
SAT 12.10.2 4	7:30	Meet at hotel entrance	Joint departure to Gdansk Airport
	11:20	Departure to Hamburg	Terminal 2
	12:40	Arrival at Hamburg Airport	

3.43 EVALUATION

Overall, the summer school was a great success. The organization and coordination between the partners worked well and the program was implemented as planned. After the trip, an evaluation was carried out with the participating BHH students. Due to the high response rate (10 out of 12 participants took part in the survey), valuable and representative insights into the level of satisfaction with the study trip were obtained.

All participants rated the trip duration as "just right" (100%) and expressed overall high satisfaction with the visited cities of Słupsk and Gdansk, though it was mentioned that the stay in Gdansk could have lasted longer. In terms of transport and accommodation, the organization received positive feedback overall (80% “satisfied”, 10% “very satisfied”, 10% “neutral”), with accommodation in Słupsk and Gdansk being well-rated.

The content of the program was overall well reviewed by 80% “satisfied” and 20% “neutral”. The relevance and selection of topics were evaluated as “relevant” (60%) to “neutral” (40%) while the variety of activities offered received good feedback, being rated as “good” (60%), “very good” (30%) or “satisfactory” (10%).

The scheduling/timing of activities was generally rated as "good" (80%) to “satisfactory” (20%) with some recommendations for optimizing the timing of certain program points

and a wish for more free time besides the official activities. The cultural experience was perceived as “enriching” by 50% or even “very enriching” by 40%; only one person rated the cultural experience as “little enriching” (10%).

In terms of organization and communication, the BHH was seen as a reliable and responsive organizer with an 80% rating as “good” to 20% as “satisfactory”. The logistics managed by the BHH was viewed positively, ranging from “very good” (10%), to “good” (80%) and “satisfactory” (10%). Both the communication and the responsiveness of the BHH organizers were highly appreciated, with the evaluation ranging from “very good” (60%), to “good” (30%) and “neutral” (10%).

In conclusion, the study trip was rated as a success, with all participants willing to recommend this type of excursion (100%) and an overall rating of “very good” (20%) to “good” (80%).

3.44 PROSPECTS AND CONTINUATION OF THE PROJECT

In the spirit of mutual experience, a return visit by a UPSL student group to BHH is planned, which will take place in Hamburg from November 17-21, 2024. To this end, a preparatory meeting took place at BHH during the 3LoE project period (October 23-25, 2024), at which two professors from UPSL discussed the program and future opportunities for cooperation between the two universities with BHH staff.

One of the aims is to establish the summer school as a permanent offer from 2025 onwards. The Erasmus+ program provides the opportunity to finance such a mobility offer and to expand it as part of the Blended Intensive Programs (BIP), ideally with another university partner from the Baltic region.

4 Implementation Reports

Analyses of the economy, demographics, education and labor markets were carried out in all participating countries (see Result 2.1 Analyses and recommendations).

Based on these analyses

a) quantitative and qualitative bottlenecks were investigated and concepts for the establishment and work of the COVEs as well as work plans and timetables for each COVE were developed and agreed (see Result 2.2 Three-level centres of vocational excellence "Green Economy for SMEs" and transnational platform: Part A Concept Development and Implementation of Three-level Centers of Excellence of Vocational Training in Green Economy).

b) Tools, train-the-trainer programs, information and cooperation models for the work of the COVE and for transnational cooperation, including an expansion by 70 institutions from 14 countries, were developed and implemented (see Result 2.2 Three-level centres of professional excellence "Green Economy for SMEs" and transnational platform: Part B Development and Implementation of Information & Cooperation Tools and transnational Cooperation by involving associated Partners).

Six months after the start of the project, the COVEs were founded and began their work. Each COVE developed a written cooperation agreement with its partners and concluded a binding agreement.

In the course of the work, all COVEs included and implemented additional support and training measures in the work programs in accordance with the region-specific needs. Towards the end of the third project year, each COVE developed country-specific strategies for the work and in particular for the continuation of the COVE and discussed and agreed these with regional stakeholders (see Result 2.4 Political strategy and action program).

In addition, short, summarized reports on the set-up and development work and on the continuation after the end of the project are listed below for each COVE. For the continuation of the work after the end of the project, the financial plans for the COVEs, which are largely identical for each COVE, as well as for the future transnational cooperation, are presented in Chapter 7 Business models for the continuation of the COVEs.

4.1 Austria⁶

Partners who operate the COVE

- a) (Coordination Partner): WIFI Steiermark
- b) CAMPUS 02 Fachhochschule der Wirtschaft GmbH
- c) WKO-Bundessparte Gewerbe und Handwerk/IAGF - Institut für angewandte Gewerbeforschung

Intensive cooperation with institutions without a cooperation agreement

- a) Bildungsdirektion für Steiermark
- b) Universität Graz
- c) Technische Universität Graz

⁶ Prepared by Wirtschafts-Förderungsinstitut der Wirtschaftskammer Steiermark

- d) Green Tech Valley Cluster GmbH
- e) Bundesinnung der Rauchfangkehrer
- f) Bundesinnung der Elektro- Gebäude- Alarm- und Kommunikationstechniker, Berufsgruppe Elektrotechnik
- g) Bundesinnung der Mechatroniker
- h) Bundesinnung der Fahrzeugtechnik, Berufsgruppen der Karosseriebau und KFZ-Technik
- i) Bundesinnung der Metalltechniker, Berufsgruppe der Hufschmiede
- j) Federal Guild of Plumbing, Heating and Ventilation Technicians (BI der Sanitär-, Heizungs- und Lüftungstechniker)
- k) WIFI Tirol
- l) WIFI NÖ
- m) Abteilung für Bildungspolitik der Wirtschaftskammer Österreich
- n) Ministerium für Wirtschaft und Arbeit, Sektion VI - Berufsausbildung, Fachkräfte
- o) IBW – Institut für Bildungsforschung der Wirtschaft.

Establishment and development of the COVE

The construction and development of the CoVE in Austria was undergone by creating a non-legal entity. As all partners are affiliated with the Austrian Chamber of Commerce this was not hard to do. This also guarantees that further cooperation as CoVE will be undergone once the project ends. The overall cooperation between the Austrian consortium can be described as productive. Two partners are on the same premises (PP14 & PP15), while the third partner is also part of the Austrian Chamber of Commerce. Requests, inquiries and questions were answered very fast by all partners, either through e-mail or by phone or with online meetings. Any issues were solved in a cooperative fashion. Regular meetings that also included external stakeholders ensured the support of relevant educational, public, and private stakeholders. Conferences and events were used for dissemination and marketing purposes.

Difficulties: There was a high fluctuation of persons working in the project, which sometimes led to delays in the results. This was overcome by conducting more internal meetings in the Austrian CoVE.

Particularly successful was the development of the Service technician on EQF Level 5 as well as the Bachelor on EQF level 6 and the overall cooperation between all partners. Furthermore, the participation of PP13 in the implementation of a new law for higher vocational education should be highlighted. It is the opinion of the consortium leader that all results of this project can be classified as very successful!

Regional events organized

- a) Workshop Pilot Duales Studium in Salzburg
- b) Pressekonferenz in Salzburg 6.6.2024 – Gelungene 3LoE Kooperation – Untertitel: Duales Studium
- c) WKO Steiermark Nachhaltigkeitstag 2024
- d) Informationell Events at WIFI Steiermark
- e) Project presentations at various internal and external events

Counselling and educational measures developed, tested and implemented during the course of the project

- a) Development and implementation of a tool for vocational and qualification counselling
- b) Testing Tool for vocational and qualification counselling
- c) Preparation and transfer system dual vocational training
- d) Preparation and transfer of curricula and examination regulations for dual vocational training
- e) Development and implementation Training of trainers in SMEs
- f) Test Training for Trainers in SMEs
- g) Development political concept for the training and integration of young people with learning difficulties for Latvia
- h) Development and Transfer for additional qualifications
- i) Development and implementation of concepts and instruments for the management of continuing vocational training
- j) Implementation of the KAIN method
- k) Train-the-Trainer program for teachers to conduct further training
- l) Development, Evaluation and Implementation Train the Trainer A Basic Digital Skills
- m) Preparation and transfer 6 Trainings in the Green Economy
- n) Development and Implementation further Training Service Technician
- o) Development and Implementation course "Basic knowledge of sustainability topics"
- p) Development of regulations for new continuing education occupational profiles with a focus on the green economy and Development of a guide to recognized VET qualifications (EQF Level 5)
- q) Development dual Bachelor program “Service technician”
- r) Development tutorial “Sustainable management Climate neutrality for companies”
- s) Preparation and transfer of for study modules "Green Economy”
- t) WP5 A9.2 - Conducting manageable R&D projects for SMEs and Evaluation

Other activities carried out by the COVE

- a) Developing Micro-credentials programs in the domain of sustainability and management
- b) giving lectures for SDG-calculation
- c) developing tools for sustainability calculations
- d) consultative activities for SMEs in the context of sustainability controlling
- e) Development of a train-the-trainer program for the confectionery vocational school-teachers in Vilnius - 2 Austrian trainers, who have won Euroskills and Worldskills and are currently training the Austrian team for Euroskills, conducted a 2-day training for the teachers in Vilnius.
Half-day workshop in VESK in Vilnius with companies and teachers, organized by IAGF, to promote the advantages of the Austrian dual education system - Dual Vocational Education and Training in Austria - The Bridge to Career Success
- f) 3 Video-Clips for the 3LoE-Website and a possible 3LoE-Youtube-Channel
- g) Networking with various organizations outside the scope of the CoVE

- h) Consultation activities and presentations at events and conferences
- i) presentation of the project to regional politicians

Introduction of results into regional/national education, business and regional policy

- a) development of complete bachelor's degree program for sustainability in building automation
- b) Participation in the implementation of the new Higher Vocational Education and Training Act (HBB)
- c) Participation in the development of guidelines for the implementation of new training courses in accordance with the HBB Act
- d) Development course "Basic knowledge of sustainability topics" – will be implemented together with a regional expert in sustainability and will become a course at WIFI in 2024. Furthermore, will be implemented in existing courses.
- e) The developed materials are being shared with national stakeholders of the educational and political sphere within the network GRETA (<https://greentechacademy.at/>).

Co-operation with the COVE partners

The cooperation between our partners within COVE has been commendable overall. Regular meetings (online and in the course of project meetings) as well as regular updates, fast and competent support for queries/challenges/problems, good teamwork and added value through connection & use of the different networks have been conducted to discuss progress and address challenges, fostering open communication and alignment.

Collaboration has generally been effective, with each partner contributing their expertise to achieve our common goals. Moving forward, enhancing coordination on timelines and deliverables could further streamline our efforts and improve efficiency. Overall, the cooperation has been positive, but continual refinement of processes will ensure even stronger outcomes in the future. Furthermore, it is important to reduce the fluctuations in personal to ensure an even more effective cooperation.

General assessment of the development and work of the COVE

The overall partnership went very well. However, it has to be noted that it would be beneficial to somehow ensure that the same people stay involved in the project over the course of the whole runtime. If a new CoVE would be started it would be beneficial to attract more partners on all EQR levels in order to cover the whole educational sphere. Furthermore, regional political institutions should be integrated from the start as fixed partners.

The consortium sees the future of the CoVE as very positive! It is already planned to continue with projects in this consortium and support the development of further educational programs in sustainability related fields. It has and will continue to be a very pleasant and fruitful experience.

Assessment of the COVE program

We evaluate the program as very well! The establishment of a CoVE is right, purposeful and should definitely be continued on a European scale, as it connects not only regional actors with each other, but also helps in the transfer and friendship generation along all EU member states. All partners involved received help from each other in carrying out their tasks. Some things could not be completed, but it has to be said, that this was due to mainly external, not controllable events (e.g. a change in educational policy regarding bachelor’s at the university of applied sciences made it impossible to implement the developed bachelor course).

Assessment international cooperation

International Cooperation was very helpful and should definitely be continued! The international exchange of ideas, knowledge and transfer of expertise and ways of thinking helped everyone in understanding the various challenges facing the EU in education related to green skills. A lot was learned and hopefully a lot was given from our side. More exchange between the international partners should be strived for, however the way it was planned in the 3LoE was very well done and led to new cooperations and friendships!

Continuation of collaboration in the Cove after the end of the project

Our COVE and the collaboration will definitely continue after the end of the project, the funding is secured. The synergy between partners has proven beneficial, and continued collaboration will allow us to build on our successes, innovate further, exchange knowledge and experience and address new challenges with a well-established, effective team. Furthermore, it was an excellent experience for everyone involved!

The continuation of COVE Austria after the end of the project is financed in accordance with the business models for the continuation of the eight COVEs (see Chapter 7.). In addition, COVE Austria is planning project funding from the following programs.

Name	Level	Funding agency	Next call	Description
Erasmus+	International	European Commission	program guide will be published at the end of the year	Education projects on EU-level. (e.g. CoVEs, cooperation partnerships, small scale partnerships)
FFG	National	Federal Ministry	Continuous calls	National funding agency for industrial research and development in Austria.

Interreg	International	European Commission	Not yet announced	Interregional cooperation programme.
SFG	Regional	Land Steiermark	Ongoing calls	
Zukunftsfonds Steiermark	Regional	Land Steiermark	t.b.a.	

Conclusion and Outlook

Our Austrian COVE has significantly contributed to enhancing individual competencies and the qualification of the workforce in green jobs (especially in SMEs), ensuring that our economic region remains future proof. By focusing on sustainable practices and innovative solutions, we are equipping our workforce to effectively address the challenges posed by climate change, thereby securing a resilient and prosperous economic environment.

We look forward to further cooperate and also want to point out that the management of PP1 HP was, as always, a key factor for the success of this project!

4.2 Germany

4.21 COVE DRESDEN⁷

Partners who operate the COVE

- (Coordination partner): Dresden Chamber of Crafts
- Vocational School Centre for Technology "Gustav Anton Zeuner" Dresden
- STIEBEL ELTRON GmbH & Co. KG
- EIPOS European Institute for Postgraduate Education GmbH

Other institutions that are involved in the work of the COVE via a co-operation agreement

- njumii - The training centre for the skilled trades, metal and building technology department
- Riesa University of Cooperative Education
- SHK trade associations and guilds in the Dresden chamber district

Intensive cooperation with institutions without a cooperation agreement

- Haase Tank GmbH, Großröhrsdorf
- Fahrenheit GmbH, Halle/Saale
- Sunmaxx PVT, Ottendorf-Okrilla
- Architectural office Dr. Ronald Franke, Dresden
- Sächsische Energieagentur GmbH (SAENA), Dresden

⁷ Prepared by Handwerkskammer Dresden

f) Suppliers/manufacturers of devices/products in the HVAC sector to support training and further education and workshop equipment (Grünbeck GmbH, Bosch, Viessmann, etc.)

Establishment and development of the COVE

The COVE in Dresden was formally established with the opening of the new njumii training centre for skilled trades and the integrated Energy Efficiency Centre for Buildings (EEZ). The EEZ of the Dresden Chamber of Skilled Crafts is designed to impart expertise in energy-conscious and environmentally friendly construction in skilled trades and business areas. Central topics are energy-saving building envelopes, energy-efficient technical building systems and renewable energies for heat and power supply.

The involvement of the Dresden Chamber of Crafts was aimed at supplementing the topic of green economy in the EEZ and thus better meeting the requirements of overcoming the challenges in the areas of energy, climate and environmental protection in the crafts sector. As an educational centre for the regional skilled crafts sector, the njumii training centre for skilled crafts already offers a wide range of training measures in the areas of initial and further training as well as higher education (bachelor's degree courses), which are constantly geared towards demand. The EEZ sees co-operation with partners and the pooling and joint use of resources as a prerequisite for successful work in the education sector.

The integration of COVE into the existing structures of the Dresden Chamber of Crafts posed a challenge. The COVE is organized as a network in which the partners listed above are intensively involved during the course of the project.

Regional events organized

a) Energy expert meeting

The first expert meeting took place on 9 June 2022 with 30 participants under the guideline "Heat pump technology" with the following content.

- Current status of the 2022 funding landscape
- Coupling heat pumps with photovoltaics
- Quality criteria, tests and climate protection with new refrigerants
- Building envelope in existing buildings, ready for the new system technology

The second expert meeting took place on 3 November 2022 with 23 participants under the guidelines "climate-friendly building".

- The climate-friendly roof
- Challenges for windows and doors in climate-friendly construction Systematic, CO2-neutral and profitable building operation
- Façade insulation with cork, climate-friendly and truly sustainable

The third expert meeting took place on 27 April 2023 with 26 participants under the guideline "Municipal energy recovery from wastewater" with the following content.

- Municipal energy recovery from wastewater
- The heating cheque 2.0
- GEW amendment from 01.01.2023

- Life cycle assessment as an optimization method in the planning process for buildings

The fourth expert meeting took place on 21 March 2024 with 19 participants under the guideline "Heating old buildings without fossil fuels" with the following content.

- Heating old buildings without fossil fuels
- PVT module decarbonization through solar gains
- Heat storage - waste heat utilization for industry and commerce
- Adsorption cooling as an efficiency booster - possible applications for waste heat utilization in trade and industry

A fifth expert meeting is planned for 5 September 2024 and is in preparation.

- Participation in the Saxon Energy Days 2023: Lecture series on technologies/devices in the field of energy efficiency/renewable energies, target group: trainees and master craftsmen students
- Participation in the Saxon Energy Days 2024: Organization of an information event at COVE on the Building Energy Act, target group: specialist companies, planners, architects
- Organization of career guidance workshops (workshop days) in the field of green economy and renewable energies, target group: pupils in year 8

Counselling and educational measures developed, tested and implemented during the course of the project

- Customer service technician
- Client seminar
- Cradle to cradle
- Circular economy
- Training of Trainers in SMEs
- Master craftsman course in electrical engineering
- AI seminar
- Basic course for energy efficiency experts
- Heating optimization
- Insulation materials in building services
- Design and planning of heat pumps

Other activities carried out by the COVE

For example, networking, consultations, negotiations, etc.

- Visit Mrs Ricarda Lang, Greens - Presentation of COVE
- Cooperation analysis on the topic of circular economy/sustainability with IKS e.V.,
- Cooperation analysis with SAENA involving all Saxon chambers of crafts, 2023/2024
- Trade fair planning for a regional SHK trade fair in follow-up to the leading SHK trade fair "ISH" in Frankfurt/Main 2025 with Pietsch Haustechnik, SHT Dresden, Mainmetall)
- Participation in the "KarriereStart" trade fair 2021-2024 - presentations/info stand
- Participation in Haus 2024 trade fair - presentation and information stand
- Numerous guided tours for international guests (European chambers of crafts, vocational schoolteachers and trainees from Germany and abroad)

- h) Guided tours and discussions with potential partners and interested parties for joint networking
- i) Participation in the Long Night of Science in Dresden 2023/2024
- j) Sponsorship discussions and contract conclusions with manufacturers of SHK devices
- k) Various consultations with specialist lecturers

Introduction of results into regional/national education, business and regional policy

The Dresden Chamber of Skilled Crafts represents the interests of the skilled crafts sector in numerous working groups on regional and national education, economic and regional policy. For example, the project was presented in a nationwide working group on "International Projects" organized by the ZDH and has generated a great deal of interest. There is intensive cooperation with the organizations of the skilled trades in the HVAC sector (e.g. guilds, trade associations, district skilled trades associations) in order to map the necessary changes in the training process based on technical and political developments.

Co-operation with the COVE partners

Cooperation is smooth and particularly intensive between the coordination partner and the individual partners. Regular meetings were held with all partners. Networking between the COVE partners offers further potential. A biannual meeting of the COVE partners is planned to exchange ideas and plan future activities.

General assessment of the development and work of the COVE

The work at COVE Dresden has got off to a good start but is to be expanded even further. This requires additional staff. All partners are very busy with the actual business purpose, leaving little room for coordination and strategic conceptualization of the COVE. Collaboration with the university sector is particularly challenging.

The continuation of COVE's work is ensured. The focus is on cooperation between regional partners from the fields of education and business. Consideration is being given to extending cooperation to the immediate neighboring countries of Poland and the Czech Republic. In future, cooperation with existing partner countries such as France will also be utilized.

Assessment of the COVE program

The establishment of a COVE is a target-orientated approach which is very important and highly forward-looking for the Dresden Chamber of Crafts. Pooling resources and expertise will continue to be the central challenge in the future in order to meet the requirements of economic and regional development. This potential can be utilized even more in the continuation of the COVE.

Assessment international cooperation

International co-operation is of great importance to COVE Dresden. The different education systems and country-specific regulations and laws make it difficult to apply existing concepts in our own programs and require corresponding adaptations but

provide blueprints and good suggestions. Occasionally there have been enquiries to and from international project partners on specific topics and joint development work, for example in the realization of dual vocational training. Further international cooperation is being pursued and is planned particularly intensively with the German-speaking partners in Austria.

Continuation of collaboration in the Cove after the end of the project

The COVE Dresden and the regional and international cooperation will definitely be continued with even greater commitment. The project idea makes sense, and a lot of good work has already been invested in the COVE. The content and objectives pursued are in line with the strategy of the Dresden Chamber of Crafts.

Financing model for the continuation of COVE after project end

After the end of the project, the work of the COVE will be continued with the following main tasks and their financing will be secured. The continuation of COVE Dresden after the end of the project is financed in accordance with the business models for the continuation of the eight COVEs (see Chapter 7.). In addition to this, COVE Dresden realises further specific financing models, which are listed below.

Areas of activity	Main tasks	Responsible partner	Financing	Remarks
Ongoing operation and further development of COVE	Securing the ongoing operation and cooperation	Vocational schools	Membership fees of the craft enterprises, participation fees from the training company	
	Involving other regional players in the cooperation	Chambers, SME association and vocational education institutions		
	Promotion of smart regional development, regional economy, inter-regional cooperation with local and regional authorities and integration of value chains	Colleges and Universities		
	Training for personnel and center management.	COVE or COVE Partner	Membership fees of the craft enterprises, participation fees from the training company	
	Training for consultants and teachers for the implementation of educational consultations			
	Training for teachers to conduct dual vocational training	Colleges/Universities		
	Training for teachers to conduct further training			

Train the Trainer Programs	Trainings A Basic Digital Skills and B Advanced Digital Skills	Further education institutions, chambers	colleges/universities/vocational schools	
	Training for university lecturers and SME advisors to conduct dual Bachelor programs and innovation promotion Further training for SME consultants to promote innovation	Colleges/Universities Further education institutions, chambers, universities, on-the-job		
Initial vocational training	Comprehensive career counselling for young people and their parents	General secondary schools, Vocational schools Chambers, Employment agency/BIZ	National funding National and own funds Membership fees from craft enterprises	The charging of counselling fees is currently being examined. Counselling by chambers, schools, employment agencies
	Implementation of dual vocational training in the various professions	Vocational schools SMEs (craft enterprises)	National financing Own funds of the companies	See BBiG (Vocational Training Act)
	Comprehensive qualification, support and counselling services for young people with learning difficulties and social disadvantages, as well as the implementation of special, graduated vocational training programmes for people with learning difficulties in cooperation with companies	Vocational schools Chambers Youth employment agencies training providers SMES	National financing National financing & own funds	

	Training courses for high-performing apprentices who receive additional qualifications and early further training during their vocational training	Vocational schools Inter-company training centres	National financing Own funds of the companies	Counselling by colleges and universities
Further vocational training	Training of trainers in companies and passing the trainer aptitude test	Chambers, educational institutions	National funding & participant fees	To give companies the opportunity to provide training within the framework of the dual system.
	For people who have completed vocational training Carrying out training to become a technician or master craftsman	Chambers, SME associations and vocational training institutions Vocational schools	Participant fees and national funding	A successful degree should also entitle students to study at a university. Vocational schools mainly train technicians.
	Promotion of entrepreneurship and organisation of business start-up courses and accompanying advice for business founders until they set up or take over a company	Chambers, SME associations and vocational training institutions	Participant fees and national funding	Successfully tested education and counselling programmes are available.
	Demand-oriented implementation of training programmes that cover all relevant aspects of the rapidly growing training needs of entrepreneurs, managers and specialists	Chambers, SME associations and vocational training institutions Vocational schools	Participant fees, national funding	Consultations and, if necessary, provision of lecturers by colleges and universities.
	Implementation of further vocational training for entrepreneurs, managers and specialists with a recognised state further training qualification	Chambers, SME associations and vocational training institutions Vocational schools	Participant fees, National funding	
	Targeted further training for women and men during the family phase as well as qualification and	Chambers, SME associations and vocational	Participant fees and national funding	Advice from the employment agencies

	counselling tasks when re-entering working life	training institutions		
	Realisation of retraining, qualification and integration measures for jobseekers	Chambers, SME associations and vocational training institutions	National funds of the employment services	Utilisation of existing regulations on retraining
	Implementation of training programmes for refugees and other foreigners and integration into working life	Chambers, SME associations and vocational training institutions	National funding	Successfully tested education and counselling programmes are available.
Higher education and promotion of innovations	Implementation of dual Bachelor's degree programmes	Colleges, chambers and universities Vocational schools	National funding Own funds National funds	Extensive existing programmes available, also with Bachelor Professional degree
	Exchange of information and experience as well as knowledge and technology transfer in written and electronic form	Colleges and universities SMES Chambers and SME association	National funding Own funds National & own funds	In particular through the personal exchange in the form of meetings, information and training courses, group coaching, etc., which is so important for SMEs.
	Promotion of innovation for SMEs and realisation of R&D tasks in and with SMEs	Colleges and universities SMES Chambers and SME association	National funding Own funds National & own funds	Consultants for innovation and technology at the chambers in cooperation with universities

The business model outlined above for the continuation of the work of the COVE was created, extensively deliberated, and bindingly agreed upon by the partners of the COVE. The specified forms of financing were also examined and agreed upon; the financing of all listed work has been secured.

4.22 COVE HAMBURG⁸

⁸ Prepared by Christopher Höhn, Prof. Dr. Joachim v. Kiedrowski and Prof. Dr. Uwe Schaumann, Berufliche Hochschule Hamburg

Introduction

The CoVe Hamburg aims to establish a robust network among the Berufliche Hochschule Hamburg (BHH), Hamburg vocational schools (BS), the Hamburg public school and vocational training Authority (Behörde für Schule und Berufsbildung, BSB), and local businesses in Hamburg. This network is designed to facilitate the sustainable qualification of professionals and managers at the EQF 4 to 6 levels, thereby enhancing workforce development and ensuring a steady supply of skilled workers. Achieving this goal requires a solid structural, legal, and financial foundation for the network, as well as clearly defined rights and obligations among all parties involved.

Structural and Legal Framework

The network consists of the following key stakeholders:

- Berufliche Hochschule Hamburg (BHH): As University of Applied Sciences and central educational institution, BHH offers dual study programs that combine theoretical education on EQF6-level with practical training.
- Vocational Schools (BS): Collaborate with BHH to support the theoretical education of the students. The vocational schools provide vocational training (EQF level 4) and further vocational training (EQF level 5) and are training partners in the dual Bachelor's degree programs (EQF Level 6).
- Behörde für Schule und Berufsbildung (BSB): Provides regulatory support and ensures the integration of educational policies and vocational training.
- Companies: Provide practical training placements and contribute to the professional qualification of the students. The companies are training partners in vocational training (EQF level 4) and in the dual Bachelor's degree programs (EQF level 6). They participate with their employees in further vocational training programs (EQF level 5).

The collaboration within the network is based on several legal frameworks:

- Hamburg Higher Education Act (HmbHG): Governs the autonomy of universities and their collaboration with external partners.
- Agreements with the City of Hamburg: Specific official documents (Order of appointment & printed matter 21/17964 (in the original: Einsetzungsverfügung & Drucksache 21/17964) regulate the collaboration between BHH and the City of Hamburg, ensuring financial support and structural integration into the public educational sector.
- Vocational Training Act (BBiG): Defines the legal conditions for dual vocational training (apprenticeship) in Germany.

Rights and Obligations

Contractual Relationships between Companies and BHH

Cooperation Agreements: These agreements govern the partnership between companies and BHH. Companies commit to providing students with practical training opportunities and ensuring necessary supervision.

Contractual Relationships between BHH and the City of Hamburg

- Funding Agreements: The City of Hamburg provides financial and structural support to BHH to ensure the implementation of dual study programs.
- Official Documents (Order of appointment & printed matter 21/17964 (in the original: Einsetzungsverfügung & Drucksache 21/17964): These documents outline the legal and financial obligations of the City towards BHH and define its scope of action.

Study Contract between Students, BHH and Companies

- Rights and Obligations of Students: Include participation in both theoretical and practical training components and adherence to company regulations.
- Rights and Obligations of BHH: Include providing high-quality education on EQF6-level and supporting students in bridging theory and practice as well as coaching.
- Rights and Obligations of Companies: Include providing training placements, study-phase-coordination with BHH and ensuring practical supervision of the students.

Financial Safeguarding

Financing the Network

The financial stability of the network is permanently ensured through multiple sources:

- Public Funding: The City of Hamburg allocates financial resources to support the infrastructure and operation of BHH through official documents (Drucksache 21/17964).
- EU Funding: Additional funds for specific research projects are provided under several EU Projects to support the development and implementation of innovative training programs.
- Contributions from Partner Companies: Companies contribute indirectly to funding by offering training placements and participating in the students' education.

Long-term Financial Planning

- Budget Planning: Annual budget plans are developed to ensure sustainable financing of the network. Both revenues and expenditures are carefully planned and monitored in accordance with legal regulations as the commercial code, budgetary law and regulations.
- Risk Management: A systematic risk management approach on the company side is often already implemented to identify financial risks and take appropriate countermeasures. The vocational schools and the BHH are working under the supervision of the BSB as the public authority as well as internal monitoring boards on BHH side.

Conclusion and Outlook

The center of professional excellence presents an excellent opportunity to strengthen the qualification of young professionals in and around Hamburg and contribute to work-force development. By establishing a stable network of educational institutions, authorities, and companies, and by clearly defining the legal and financial frameworks, the sustainable implementation of the project goals is ensured. Future developments include continuously adapting the study programs to the needs of the economy and enhancing international cooperation.

4.3 Latvia⁹

Instructions

After the 3LoE project was launched, the composition of Latvian partners changed as one of the VET partners dropped out and another VET institution and the Ministry’s agency stepped in. Consequently, the CoVE composition deviated from the original concept. Additional efforts were necessary to identify shared areas for collaboration among the participating partners. LSTS focuses more on the development of STEM fields, RSU – on *Entrepreneurship and Innovation in Green Economy*, and the Chamber of Crafts – on craftspeople. To ensure more efficient coordination and collaboration additional partners needed to be involved to bring in new perspective to the existing partnership, e.g., the Latvian Chamber of Crafts strived to achieve this by creating partnerships with regional VET schools and inviting students and staff to attend courses organized by LAK. LSTS worked closely with companies to meet their employees’ needs regarding the training.

Following these adjustments, no further changes were deemed necessary for the CoVE in Latvia, ensuring continuity with the original partners throughout the project.

The Ministry of Education and Science (MoES) is making considerable efforts to promote vocational excellence, but there is no dedicated funding for this initiative. As a result, the promotion of vocational excellence depends largely on individual initiative and persuasion, rather than being supported by a systematically funded policy. This reliance on ad-hoc efforts presents a significant challenge.

MoES believes that for vocational excellence to be truly effective and sustainable, it needs to be supported by dedicated financial resources. Without earmarked funding, the initiative lacks the stability and structure necessary for long-term success.

MoES considers the 3LoE project to be an excellent pilot of the operation of Centres of Vocational Excellence and support further development and implementation of vocational excellence.

Construction and development of COVE

Partners of the COVE are:

⁹ Prepared by Kate Jēkabsons, Inta Baranovska, Guntra Kaufmane, Tatjana Muravska, Krista Jansone, Diana Karaša and Katrīna Karaša, COVE Latvia

- 1) (Coordination Partner) PP23 LSTS – Liepaja State Tehnical School
- 2) PP10 LAK – Latvian Chamber of crafts
- 3) PP11 RSU – Rigas Stradins University
- 4) PP22 VISC – Nacional Centre for Education of the Republic of Latvia

The following institutions are involved in the work of the COVE:

- a) Ministry of Education and Science
- b) LLC “Elnetworks”
- c) LLC “Lieanel”
- d) LLC “Z-PRO”
- e) Carpenters’ guild

CoVE LV operates on national and regional levels and provides education for EQF levels 3 – 6. Concerning regards to CoVE levels LSTS and LAK represent 1st and 2nd levels and are responsible for vocational education and further education. RSU is responsible for higher education and represents 3rd level. VISC as the Ministry of Education and Science agency provides political level support on all levels.

To effectively monitor continuous improvement and evaluate the impact and effectiveness of the CoVE activities, several mechanisms have been implemented, e.g., data collection including graduation rates, job placement rates, student and instructor feedback, enrolment numbers, assessment results, and other relevant information; program evaluation, e.g., regular evaluation of the curriculum and teaching methods to ensure they are up-to-date and meet industry standards. This involved input from industry experts and employers; a culture of continuous improvement within the Centre was promoted, e.g., professional development and training for staff.

LSTS: Liepaja State Technical School acts as the lead partner for CoVE Latvia. With a century-long legacy, LSTS is dedicated to vocational education, offering over 20 programs including vocational training, continuing education, and professional development for individuals seeking to enhance their skills and competencies. These programs not only foster personal growth among students but also ensure their alignment with the demands of the job market. LSTS collaborates closely with industry partners to provide work-based learning opportunities, enabling students to acquire hands-on experience. Additionally, LSTS extends methodological support to other vocational training institutions and promotes ongoing professional development for educators.

LAK: The Latvian Chamber of Crafts is a professional self-governing organization of craftspeople that promotes the development of crafts trades in Latvia. Its activities, among others, include the development and coordination of apprentices' and journeymen's training programs and qualification requirements; placement of apprentices and journeymen with the best master craftsmen for training and instruction; formation of qualifying commissions for the evaluation of journeyman and master craftsman candidates' work; re-training and in-service training, etc.

RSU: Riga Stradins University is a state-funded research university that offers various study programs and ensures the realization of scientific projects, providing training of

experts in health care and social sciences who work in Latvia and across the world. It is the only university in Latvia that has traditionally been integrated into the healthcare system of the country, and therefore ensures a successful run of the university that provides interdisciplinary studies (medical and social sciences) and research, which is a precondition for the effective existence of the healthcare system in Latvia.

VISC: The National Centre for Education (VISC) is a public administration body operating under the Ministry of Education and Science, responsible for implementing national policies related to general, vocational, inclusive, and non-formal education. VISC's primary functions include developing curricula for general and vocational education and overseeing the development and implementation of national examinations in these areas.

The COVE Latvia does many regional events. Most important were the Conference in Riga in September 2024 and RSU lecturers' classes for LSTS students and teachers on the green course in business and logistics. (February and June 2024).

The following educational and consulting activities were carry out during the project period.

LAK:

- a) WP3 A1.2 Testing Tool for vocational and qualification counselling
- b) WP3 A5.2 Test Training for Trainers in SMEs
- b) WP3 A7.25 Test E Fundamentals of the circular economy
- c) WP3 A7.26 Test F Systemic solution-oriented consulting
- d) WP4 A5.1 Implementation Training I for SMEs: Energy Efficiency and Renewable Energies,
- e) WP4 A5.2 Implementation Training II for SMEs: Solar Energy – Technology and Applications,
- f) WP4 A5.3 Implementation Training III for SMEs: Energy Efficient Construction and Application of Renewable Energies
- g) WP4 A6.21 Test Training A Preparation and management of SMEs for work in the Green Economy
- h) WP4 A6.22 Test Training B Waste reduction and recycling management
- i) WP4 A6.25 Test Training E Cradle to Cradle in SMEs
- j) WP4 A7.2 Test Training Enterprise and Entrepreneurship in Green Economy
- l) WP4 A10.2 Tests Training Vocational Master

LSTS:

- a) WP3 A4.33 Implementation dual vocational training Latvia “Motor vehicle mechanic/Car mechanic”;
- b) WP3 A5.2 Test Training for Trainers in SMEs;
- c) WP3 A6.3 Tests “Specialist for Building Insulation”;
- d) WP4 A8.2 Tests Training Energy Service Manager;
- e) WP5 A21/A23 “Digital training for the construction and finishing trades” (own evaluation, implementation report).

RSU:

- a) WP5 A4.2 - Evaluation Test “Entrepreneurship & Innovation in Green Economy”
- b) WP5 A8.41 Test study module D “Management of sustainable economic activity”
- c) WP5 A9.2 Conducting manageable R&D projects for SMEs (5 per CoVE)
 - Dual Bachelor Degree Programmes
 - Green Economy study modules
 - Innovation support and R&D projects for SMEs
 - Train the Trainer Programme for university lecturers and SME consultants
 - Dual Bachelor “Entrepreneurship & Innovation in Green Economy”
- a) RSU lecturers' classes for LSTS students and teachers on the Entrepreneurship and Innovation in Green Economy including courses on disruptive innovation, logistics and supply chains.
- b) A study programme on Entrepreneurship and Innovation in Green economy with focus on sustainability was further elaborated and a new Module on in a programme on International Business and Sustainable Development included in the programme and approved by the Deans’ Council of the RSU.
- c) Concept for innovation promotion and conducting manageable R&D projects for SMEs.

Cooperation with Ministry of Education and Science

The Ministry of Education and Science (MoES) is very positive about initiatives aimed at promoting vocational excellence. In Latvia’s national key policy planning document, the Education Development Guidelines, vocational excellence has been identified as a top priority in VET. However, MoES has encountered some challenges in implementing this initiative.

One of the primary challenges is the absence of specific types or statuses for institutions participating in this initiative. This has made it difficult for MoES to convey to vocational schools that the focus is not on a particular status but rather on the quality of collaboration among different institutions involved in VET. The goal is to foster an environment where various VET providers work together to enhance the overall quality and effectiveness of vocational education.

In MoES's understanding, excellence should be inclusive, encouraging everyone to perform to the best of their ability. They emphasize that individual excellence involves each person and student reaching their highest potential. Institutional excellence, on the other hand, is closely linked to innovation.

Innovation is achievable only through close collaboration with universities, research institutions, and industries, preferably those involved in high-tech and state-of-the-art developments. These collaborations are vital as they can significantly contribute to both innovation and vocational excellence. By integrating cutting-edge research and industry practices into VET programs, institutions can ensure that their training remains relevant and forward-thinking.

MoES is dedicated to promoting a culture of continuous improvement and excellence within vocational education, understanding that this requires a concerted effort from all stakeholders involved. They are actively encouraging VET institutions to embrace collaborative approaches and innovative practices, which are essential for achieving vocational excellence and preparing students for the demands of the modern workforce.

MoES is doing as much as it can to promote vocational excellence. However, there is no specific funding allocated for this initiative. Consequently, efforts to promote vocational excellence rely heavily on individual initiative and persuasion rather than being part of a systematically funded policy. This reliance on ad-hoc initiatives poses a significant challenge.

MoES believes that for vocational excellence to be truly effective and sustainable, it needs to be supported by dedicated financial resources. Without earmarked funding, the initiative lacks the stability and structure necessary for long-term success.

Cooperation between the partners

Overall, we consider the cooperation between the partners to be highly positive, as key issues were discussed during both in-person and remote meetings. Most meetings were held remotely, given that LSTS is based in Liepāja, which is 210 km from Riga, where three of the other partners are located.

To coordinate CoVE LV activities, monthly meetings were held with representatives from all organizations to discuss mutual support, collaboration on project tasks, and potential improvements. The 3LoE partners' meetings and training activities also added significant value by offering opportunities for learning, exchanging experiences, and networking.

LSTS as the lead partner of the CoVE, coordinated and managed the implementation of activities. LSTS confirmed that the programs have been executed according to plan and will be completed by autumn 2024. They assessed the CoVE's operations as satisfactory but noted that the frequent changes in project coordinators at LSTS necessitated rescheduling several activities to meet the deadlines.

During the project lifetime, LSTS implemented several Initial Vocational Education and Training (IVET) and Continuing Vocational Education and Training (CVET) programs. Additionally, they introduced teacher development programs aimed at enhancing skills and knowledge.

VET programs for students pursuing careers as auto mechanics and building technicians were enriched with essential green skills to meet current environmental demands.

Moreover, for professionals already engaged in electrician and construction worker roles, LSTS introduced specialized CVET programs. These initiatives aimed to update and expand their expertise in line with evolving industry standards and technological advancements.

LAK activities included the implementation of further education programs, specifically those offered by the 3LoE project. Some of these programs were similar to those LAK already implemented or at least covered the same themes. LAK admits that they have received very positive reviews from the trainees who participated in these programs.

The training provided by LAK included substantial practical work within companies, targeting professions such as carpenters, roof layers, blacksmiths, and chimney sweepers. Participants highly valued the opportunity to learn more about renewable energy, the green economy, and other relevant topics. They considered the practical training and the shared presentations on training outcomes to be the most interesting parts of the program.

Additionally, LAK successfully implemented programs for qualifying crafts journeymen and crafts masters. However, they expressed regret that these qualifications are not binding within the Latvian legal system.

LAK positively evaluated the autonomy they were given in choosing which programs to implement, finding this freedom essential for tailoring education to meet the specific needs and interests of their trainees. This flexibility allowed LAK to ensure that the programs they offered were relevant and engaging.

Looking ahead, LAK is enthusiastic about implementing several more programs from the 3LoE project. They believe these programs play a crucial role in promoting innovations within the VET sector. By introducing new teaching methodologies, integrating modern technologies, and focusing on contemporary issues such as renewable energy and the green economy, these programs are expected to enhance the quality and relevance of vocational training. LAK anticipates that these innovations will better prepare trainees for the demands of the evolving job market, ultimately contributing to a more skilled and adaptable workforce.

RSU focused on the development of a professional bachelor's degree sub-program/module on Green Entrepreneurship and Innovation in close co-operation with other CoVE partners as well as partners from relevant industries.

In the development of new courses, the RSU considered the following five areas: (1) socio-economic situation and labour market needs in Latvia; (2) green entrepreneurship and innovation; (3) job-related training in EU and Latvia; (4) development of a bachelor's degree sub-programme at the RSU and cooperation with business; (5) promotion of the programme.

In the 3LoE project RSU implemented the Green Entrepreneurship and Innovation program for LSTS students and teachers as well as for those working in the construction and energy sector.

RSU also conducted research related to green entrepreneurial developments. They have also published research articles in internationally recognized research journals and books.

The 3LoE project offered practical experience in operating 3-Level Centres of Vocational Excellence, giving participants a comprehensive understanding of the day-to-day functions and challenges of such centres. Through hands-on involvement, participants gained valuable insights into best practices and innovative approaches to enhance the performance and impact of these centres. All CoVE Latvia partners agree that this experience highlighted areas for improvement but also underscored the importance of collaboration, adaptability, and continuous learning in running successful vocational excellence centres.

An important role in the operation of CoVE is international cooperation. This collaboration facilitates the exchange and implementation of innovative solutions and the adoption of best practices from partners. For example, CoVE benefits from already piloted VET programs developed by its international partners. This exchange not only enhances the quality and effectiveness of CoVE's initiatives but also ensures that they remain at the forefront of educational advancements and industry standards.

The Ministry of Education and Science believes that dedicated financial resources are crucial for the true effectiveness and sustainability of vocational excellence initiatives. Without earmarked funding, these initiatives lack the stability and structured support necessary for long-term success. Securing consistent and targeted financial backing will ensure that vocational excellence centres can innovate, and continuously improve, ultimately benefiting students, industries, and the broader economy.

International cooperation

Latvian CoVE believes that the 3LoE project provided an excellent foundation for establishing and operating CoVEs. It not only offered a strong starting point but also facilitated valuable networking opportunities and helped identify new partners for future collaborations. LSTS particularly praises the Polish and German CoVEs, viewing them as exemplary models from which other project partners can learn. According to LSTS, these two CoVEs have successfully developed structures that align closely with the original CoVE concept, showcasing best practices in implementation and operations. LSTS has also explored further collaboration opportunities with project partners,

particularly those offering similar VET programs. Currently, LSTS is working on another Erasmus+ project with the 3LoE project partner from Austria, the Institut für angewandte Gewerbeforschung der WIRTSCHAFTSKAMMER – IAGF.

During the project, VISC partnered with "t2i" – the Technology Transfer and Innovation Agency from CoVE Italy – to develop and submit a joint Erasmus+ project proposal. This proposal focuses on creating digital teaching and training materials for VET and company tutors.

Latvian partners place significant importance on the international cooperation opportunities offered by the 3LoE project. These opportunities have facilitated important discussions around shared challenges and have enabled participants to exchange valuable experiences at the chamber level. This collaborative environment has encouraged connections among participants from diverse countries and backgrounds, enriching the dialogue and fostering mutual understanding.

Moreover, we as partners believe that the impact of the project could have been greatly enhanced by incorporating more exchange visits. Such visits are invaluable, as they offer participants direct insights into the implementation of vocational education systems in various countries. By engaging in these experiences, participants have the chance to observe firsthand the teaching methodologies and administrative practices employed in different educational contexts.

This exposure not only allows them to gain a broader understanding of global best practices and innovative approaches in vocational education but also encourages cross-cultural learning and collaboration. Participants can gather insights into different strategies and frameworks that have proven successful elsewhere. They can then bring back new ideas and practices that can be adapted and implemented within their own institutions, leading to improved educational outcomes. Ultimately, enhancing these international exchange opportunities would contribute significantly to the professional growth of participants and the advancement of vocational education overall.

CoVE LV believes that increasing the number of exchange visits would greatly enhance the learning experience for participants and contribute to the overall improvement of vocational education systems by integrating successful practices observed abroad.

Latvian CoVE envisions leveraging the expertise and resources of relevant project partners to further enrich their programs. They plan to organize guest lectures and masterclasses, tapping into the knowledge and experience of international experts. This approach will not only enhance the learning experience for their trainees but also provide them with diverse perspectives and advanced skill sets.

Additionally, CoVE LV partnership is excited about the prospect of implementing a summer school, a concept that has been successfully adopted by some 3LoE project partners. This summer school initiative will offer intensive, hands-on training sessions

during the summer months, enabling participants to deeply engage with specific topics and develop practical skills in a focused environment.

All CoVE partners agree that the 3 level CoVE initiative is worth continuing. However, they believe that to fully capitalize on its potential, participating institutions should cultivate greater shared interests. In their opinion, the CoVE should encompass institutions implementing programs for similar qualifications. For example, Riga Technical University would be an excellent CoVE partner in the future by providing third-level education for LSTS graduates. This partnership would not only offer a seamless educational progression for students but also foster collaboration with involved companies to boost innovation. By aligning their programs and objectives, these institutions can create a more cohesive and effective network that enhances vocational excellence and meets the evolving needs of the industry.

CoVE LV believes that, without concrete political decisions regarding the future of the Centres of Professional Excellence, there is currently no need to change the Centre's status. The Center will continue implementation of 3LoE VET programs and involve new partners which could bring added value to the CoVE operation.

All CoVE partners unanimously agree that international cooperation with other Centres of Vocational Excellence should be continued. They recognize that such collaboration introduces new ideas and perspectives, which are invaluable in enhancing their current initiatives. By engaging with international CoVEs, they can share best practices, learn from each other's experiences, and drive continuous improvement in their work.

4.4 Lithuania¹⁰

Partners who operate the COVE

The center of vocational excellence Lithuania (CoVE LT) has been established as a cooperative network consisting of three different institutions.

- Vocational school: Business and Hospitality Training Centre (VESK)
- Chamber: Panevezys Chamber of Commerce Industry and Crafts (PCCIC)
- College: Panevezio kolegija (PANKO)

The partners of the CoVE LT are active in all three levels:

- VESK is a vocational school that implements dual vocational trainings and further trainings at EQF Level 3–5.
- PCCIC as a representative of Chambers of Commerce, Industry and Crafts act as a cooperating body for professional education at EQF Levels 3-6, carrying out vocational trainings and further trainings, examinations, consultations, and in particular representing SMEs, advising and integrating them as training partners for dual education.
- PANKO is a higher education organization which implements dual Bachelor programs and innovation projects for SMEs at EQF Level 6. They also participate

¹⁰ Prepared by Renata Černeckienė, Business and Hospitality Training Centre, Vilnius

in the development of curricula and new learning methods, provide lecturers, trainings for teachers and managers of VET schools, etc.

The CoVE LT is coordinated by VESK (Business and Hospitality Training Centre). The CoVE LT operates in the regions of Vilnius and Panevėžys, where it builds skills eco-systems conducive to innovation, regional development and social inclusion, as well as interacts with centres in other countries through international cooperation networks. There were no difficulties in establishing CoVE LT since all three partners have known each other for quite a long time and had experience of previous cooperation in projects and training activities.

Each CoVE member is actively working on embedding the center in regional and national development strategies. Main achievements:

- Framework for implementing green and circular approaches in education and everyday life.
- Increased availability of training opportunities for different levels of education.
- Acknowledgement and visibility on national level (presentations to Ministry of Education, sector associations, employers, local communities).

Intensive cooperation with institutions without a cooperation agreement

- a) Lithuanian Association of Hotels and Restaurants
- b) Vocational schools of Panevėžys region
- c) Panevėžys region business enterprises (UAB Adax, AB Kalnapilis)
- d) Panevėžys Mechatronics Centre
- e) Utena Regional Vocational Training Centre
- f) Utenos kolegija Higher Education Institution

Regional events organized

a) Conference in Panevezys on 25 April 2024. The main objective of the regional event was to present the 3LoE project, its aims and achieved results as well as the activities implemented by CoVE Lithuania. In addition to that, presentations and discussions were aimed at analyzing various aspects of the ongoing process of shifting from linear to circular economy.

Total number of participants was 110 and included business owners, managers and employees, local policy makers, VET and college teachers, students and general public from Vilnius, Panevezys, Utena and Birzai towns. The list of speakers included the official representative of the European Commission in Lithuania, sustainability experts from Green Policy Institute and several business companies.

The event was a powerful tool to disseminate aims and achieved results of the 3LoE project as well as the activities implemented by CoVE Lithuania. Participants both from business and educational institutions had the possibility to listen to experts of different sectors and gain useful information and new insights on sustainability issues. They were also able to better understand the concept of Centres of Vocational Excellence, discuss different questions and exchange ideas.

b) A scientific article "Sustainable Education for a Sustainable Future: Incorporating Green Skills in Higher Education" was prepared and published in the scientific journal Applied Research in Studies and Practice (ISSN 2029-1280, eISSN 2669-0071) and

presented at the international scientific conference SCEDU'2023. The conference was attended by scholars and researchers from various fields interested in the challenges of globalization for higher education and science (more than 100 participants).

Counselling and educational measures developed, tested and implemented during the course of the project

- Tool for vocational and qualification counselling
- Dual vocational training “Cook”
- Training for Trainers in SMEs
- Training "Specialist for Building Insulation”
- Training Fundamentals of the circular economy
- Training "Sustainable restaurant worker"
- Training for SMEs: Energy Efficiency and Renewable Energies
- Training Preparation and management of SMEs for work in the Green Economy
- Training Waste reduction and recycling management
- Training Wastewater treatment and recycling management
- Training Enterprise and Entrepreneurship in Green Economy
- Training Energy Service Manager
- Training Development & Implementation “Work-related English with Focus on Green Economy” for companies
- Training „Sustainability in foodservice industry“
- Specialized trainings „Waste management in food industry“
- Specialized trainings „Sustainable hotel practices“
- Dual Bachelor program "Business Administration for SMEs”
- Dual Bachelor program “Electrical and Automatic Equipment”
- Study module “Waste Management & Technologies”
- Study module C “Management & technologies of the circular economy”
- Study module D “Management of sustainable economic activity”
- Conducting manageable R&D projects for SMEs

Other activities carried out by COVE

The pilot study was conducted with the primary aim of enhancing comprehension regarding the implementation of green skills practices in enterprises and their significance in fostering sustainability and environmental responsibility. Research design: this study employed quantitative data collection method. Structured questionnaires were distributed to employees and management in selected enterprises to measure the extent of green skills practices implementation and their perceived impact. The sampling strategy was purposive, selecting enterprises known for their commitment to sustainability and green skills practices. Employee and management participants were chosen from different departments within these enterprises to ensure diversity. Survey questionnaires were developed based on established scales for measuring green skills practices and environmental responsibility. Anonymity and confidentiality of participants were maintained throughout the study.

Introduction of results into regional/national education, business and regional policy

- a) Module on Sustainability has been integrated as a compulsory part in the HORECA training programs for levels 3-5 EQF.
- b) Training program Sustainable Restaurant Worker has been included in the national list of non-formal training offers.
- c) The study programs “Business Management” and “Electrical and Automatic Equipment” has been updated to make them more relevant to the needs of industry and modern technological developments. This alignment will enhance the employability of graduates and address the skills gap in the workforce.
- d) In February 2024 Lithuania launched a new digital education platform - the Individual Learning Accounts system, aimed for adults to learn and improve their qualifications. It will allow learners, as well as companies involved in the training and development of their employees, to have their own individual accounts, access remote career guidance services and funding for learning targeted at national priorities. The system is open to all Lithuanian citizens, regardless of their job position, qualifications, age or professional experience.

The delivery of the training is fully funded by the state. It is expected that more than 100 000 people will participate in skills development programs by 2030. A greater number of the courses that were developed in the framework of 3LoE (e.g. “Fundamentals of the Circular Economy”, “Enterprise and Entrepreneurship in the Green Economy”, “Zero Waste Cooking”, etc.) will be included in the official training programs’ list from September 2024.

Co-operation with the COVE partners

We have based our cooperation on mutual understanding and trust, each partner taking responsibility for their planned goals and activities. The coordination was accomplished through systematic progress monitoring, consensual decision-making between partners, and targeted interventions by VESK if and when needed. Each partner was responsible for their own time management ensuring that the allocated tasks are completed, and the defined deadlines are observed. When it comes to some common project activities, e.g. developing a country report, organizing an event, etc., all partners shared the workload, while VESK supervised and facilitated the entire process and acted as the main contact with the project coordinator or other involved organization. Overall, the partners not only shared their staff resources, facilities, information, but also found many new opportunities for further cooperation, joint activities, events and their own professional development.

General assessment of the development and work of the COVE

We are incredibly pleased with the development and progress of our COVE. Many aspects have gone exceptionally well, including the efficient collaboration among the partners, adherence to project timelines, and the successful achievement of key milestones.

One of the main goals of our COVE has been sustained partnership between local / national education providers and businesses in order to provide services that are

responsive to labor market needs, foster innovation and regional development. It includes sharing information, knowledge and practical experience, teaching resources and teaching staff; also, organizing joint educational activities and events, involving business representatives in development of new curricula and teaching process. Such collaboration and networking will involve more Lithuanian institutions outside our COVE in the future.

The establishment of the COVE has had a significant impact on VET providers, trainers and trainees of the participating organizations by providing them with the tools to respond to the requirements of sustainable operation within HORECA sector as set by the EU policies. The participants have expanded their skills and capabilities for a sustainable work culture in the HORECA sector and have acquired the innovative resources to implement the training. Initial and continuous VET students and people seeking to work in HORECA sector have increased their employability by acquiring an updated qualification. All partner organizations have enhanced their training provisions through integrating the developed learning modules and OERs into existing training offers or by introducing new courses.

By focusing on digital transformation, sustainable practices, industry collaboration, personalized learning, soft skills development, global competence, infrastructure improvements, and data-driven decision-making, our COVE can remain at the forefront of vocational education and training of the region and even of the country. These areas of development are crucial to ensuring that COVE continues to produce a highly skilled, adaptable, and innovative workforce ready to meet the challenges of the future.

Assessment of the COVE program

Establishing of COVEs is a strategic and useful way to promote educational, economic and regional development. The COVE center has helped the partners to achieve their objectives and, looking to the future, the further development and refinement of this center will undoubtedly enhance their impact and benefit an even wider range of stakeholders.

COVEs provide opportunities for initial training of young people as well as continuing up-skilling and re-skilling of adults. Applied research projects also help the development and innovation of local business.

As COVEs closely collaborate with industry partners and strive to provide flexible and timely offer of trainings that are responsive to the labour market needs, they can contribute to local economic development by providing skilled workforce for local industries.

Main positive aspects of COVEs establishment:

1. Skilled Workforce Development:

- Enhanced Labor Quality: A vocational centre can produce a highly skilled workforce tailored to the specific needs of local industries, leading to increased productivity and innovation.
- Reduced Training Costs: Businesses can save on training costs as employees come pre-equipped with the necessary skills and certifications.

2. Economic Growth and Competitiveness:

- Attraction of New Businesses: The availability of a skilled workforce can attract new businesses and industries to the region, boosting the local economy.
 - Increased Competitiveness: Local businesses can become more competitive in both national and global markets due to higher efficiency and expertise.
3. Local Talent Retention:
- Reducing Brain Drain: Providing high-quality vocational training locally can help retain talented individuals who might otherwise leave the region for education or job opportunities elsewhere.
4. Industry Collaboration and Innovation:
- Partnerships with Educational Institutions: Businesses can collaborate with the vocational centre and college for research, internships, and apprenticeship programs, fostering innovation and practical solutions to industry problems.
 - Customized Training Programs: Businesses can influence the curriculum to ensure it meets the evolving needs of the industry.
5. Corporate Social Responsibility:
- Community Support: Investing in local education and skills development can enhance a company’s reputation and strengthen its relationship with the community.

Assessment international cooperation

The COVEs from different countries succeeded in finding common areas of cooperation, implemented joint training programs or other activities and are planning further international cooperation, participation in projects. The main benefit is the exchange of practical experience, ideas, teaching content and methods, etc.

Continuation of collaboration in the Cove after the end of the project

We will definitely continue the COVE, because COVE is important for strengthening studies and R&D activities.

This partnership provides valuable possibilities to expand the scope and improve the quality of our educational services. New partners could be invited to join our COVE.

We will continue with carrying out of our best practices, e.g. organizing common trainings for SMEs, professional competence development for teachers, methodological support from university to VET school, etc.

Thanks to the project, we have started not only compulsory integration of sustainability topics into training programs but also applying certain sustainability practices in our daily operation (e.g. zero waste, field to table principles, switching to green energy, reusing of old furniture, etc.).

For some of the partners, being part of the COVE on Green Economy, has inspired to implement infrastructural changes (e.g., switching to electric cars, generation of green energy, introduction of smart building elements, etc.) as well as to update their quality management system (introduction of ISO 14001:2015 Environmental Management System).

4.5 Italy¹¹

Addressing the challenges in the fields of energy, climate and environmental protection requires global reorientation and innovations with a long-term perspective.

To meet these challenges, the following institutions are establishing a Centre of Professional Excellence in the Green Economy within the project "Three-level Centres of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy (3LoE)":

- ITA Emilio Sereni, Via Prenestina n.1395, 00132, Rome
- t21 - technology transfer and innovation, Piazza delle Istituzioni n.34/A, 31100, Treviso
- Confindustria Training Systems, Viale Pasteur n.6, 00144, Rome

In addition, the following organizations are involved as partners in COVE Italy on the basis of binding cooperation agreements.

- a) Università degli studi della Tuscia (University)
- b) Re.N.Is.A. - Rete nazionale degli Istituti Agrari (School Cluster)
- c) Unioncamere - Unione italiana delle Camere di commercio, industria, artigianato e agricoltura (Chambers)

Without a formal cooperation agreement, Cove Italy works with the following organizations in particular.

- a) CREA - Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria (Research Center)
- b) Regione Lazio (Region)

Objectives of the Centre of Professional Excellence

The Centre of Vocational Excellence in Italy will pursue the following objectives:

- Consistent introduction of work-based learning through the implementation of the dual system at three levels: initial vocational training, higher education and university education.
- At all three levels, education, management, teaching and administration staff are trained to perform their tasks within the framework of training programs for trainers. These programs should be carried out on a permanent basis by the colleges and universities involved, so that adequately qualified personnel are available in the region for all educational measures.
- Integrate the centers into regional and national strategies and achieve high levels of impact to promote the green economy, improve skills and attract skilled workers and entrepreneurs.

Tasks, structure and organization

¹¹ Prepared by ITA Emilio Sereni, Rome

The innovative strength of SMEs is severely limited by the availability and qualification of entrepreneurs, managers and specialists. Due to the lack of qualifications and the shortage of entrepreneurs and employees, innovations in SMEs are much lower than they could and should be. At the same time, qualification requirements are increasing alongside specialist knowledge, personal and social skills are gaining in importance. However, the so-called transversal skills need to be enhanced and developed. Improving qualifications and eliminating the shortage of skilled workers is the most important task and the key to sustainably strengthening the innovation capacity, competitiveness and growth of SMEs. The most important tasks of the centre of excellence in this regard include in particular:

- Improving the quality and attractiveness of vocational education and Introduction of a dual system.
- Vocational orientation and integration of young people with learning difficulties and disadvantaged young people.
- Qualification of managers and entrepreneurs.
- Implementation of dual-system degree programs in which theoretical studies are combined with relevant vocational education in order to meet the high demand for innovative entrepreneurs and managers for SMEs.
- Integrate the centres into regional and national strategies and, by doing so, strengthen their impact in terms of improving skills and attracting professionals to the green economy.

The Centre of Professional Excellence Italy is developed and strengthened on three levels:

1. Level: Vocational Training (EQF Level 3 and 4)
2. Level: Continuing Education (EQF Level 4 to 6)
3. Level: higher/university education (EQF levels 6 and 7)

In the Lazio and Veneto regions, the centre of excellence will cover all areas and topics relevant to SMEs on the basis of job sharing. It should be run in close collaboration with vocational schools, associations and any other stakeholders, as well as colleges/universities in order to jointly perform educational and advisory tasks, such as:

Construction and development of COVE

Italian MIUR - Ministry of Education, in the part of the Directorate General for Education Regulations (Schools, ITS, Universities and Research) entrusted ITA "Emilio Sereni" with the coordination of the CoVE, after consultation with SFC. All partners contributed to develop and implement CoVE networks both at regional and intra-regional level. MIUR, now MIM, is always informed about the developments of the coordination of the CoVE.

To date, the organization of Italian 3LoE COVE has followed a matrix logic, in which partners have been involved in the implementation of the actions assigned to them, as foreseen by the initial 3LoE project.

The independent course action was particularly successful, with considerable participation and contribution of partner institutions, in each area of CoVE Italia. After a shared assessment it was decided to govern CoVE at three levels, one for each sector, with the ITA 'Emilio Sereni' framed as a Centre of excellence for green and technological training in agriculture.

The three partners of CoVE Italy are independent and regionally managed with funding of a different nature, operating in different sectors of the green economy.

As far as the CoVE Italy coordination structure is concerned, we found several difficulties namely:

- Complexity of managing the activities and the partnership itself.
- Labor precariousness of the Italian school system.
- Different type of budget management (school=public; t2i/SFC=private companies).

On the other side, we found particularly successful the following Italian CoVE characteristics:

- Width and variety of the partnership.
- Level of experience of the trainers and institutional relevance of the partners involved.
- Possibility of involving in the COVE other stakeholders, public bodies, enterprises.

However, the cove in agriculture managed by PP21 had an impact at national level thanks to the national ReNIsA network

Organization of regional events

a) XIV Re.N.Is.A congress 27-29/05/2024 Marsala. Congress of the National Network of Agricultural Institutes. 200 persons involved - mainly college Students, Director General of the Regional School Office, the Executives of the Ministry of Education and Merit Fabrizio Manca and Gianluca Lombardo, INDIRE President Cristina Grieco, Re.N.Is.A. President Patrizia Marini, the ISMEA Director General Livio Proietti, FAO Director General Maurizio Martina, Prof La Bella of the Department of Agriculture, University of Palermo, ITS Academy of Sicily, Lazio, Apulia and Tuscany.

b) Congress of the Re.N.Is.A. Network Grosseto 27-28-29 April 2022; 350 people/participants involved - content and results of this event are the dissemination of the 3Loe project to the students and professors of the college level.

c) Inauguration conference of hi-tech hydroponic greenhouse 4.0, 21 September 2023; 200 people involved: Ministry of Instruction, Councilor for Agriculture, Canadian Embassy, Ambassador of Canada, Regional school Office Director and Municipality of Rome.

Cooperation between the partners of the COVE

There have been fruitful periodic meetings between the COVE partners. The cooperation is doing a good work, in fact all COVE Italy partners activated an intensive networking enabling a widening consensus on the COVE 3LoE goals. Stakeholders of the University (i.e. University of Tuscia, University of Padua, School of Advanced Studies Sant'Anna) and Research system (i.e. CITERA-Interdepartmental Research Center Territory Building Restoration Environment, Crea- Council for Agricultural Research

and Analysis of Agricultural Economics), umbrella organisations of the school system (Re.N.Is.A.), network of VET Providers specialized in the delivery of 5 EQF training (CIS, ECOLE, Fondazione ITS Meccatronico del Lazio) and Chambers of Commerce (Unioncamere), public administration (Lazio Region) were involved in the realization of COVE Italy activities.

COVE Italy improved by creating a hub for the different regional administrations at national level for all green economy sectors in which COVE Italy is engaged.

The ITA E. Sereni has implemented a collaboration with the company Horto Mio S.R.L., which has installed a hydroponic greenhouse 4.0 within the institute for the implementation of an in situ dual training. This collaboration includes a series of experimental and hands-on educational activities focused on the management of a digital greenhouse 4.0, with related use of integrated digital technologies, and the production of edible plant species raised using above-ground techniques. The activities are carried out by ITA "Emilio Sereni" teachers with the collaboration of professors from the University of Tuscia in Viterbo (UNITUS), researchers and technologists from the Council for Research in Agriculture and Analysis of Agricultural Economics (CREA) and technicians from HortoMio S.r.l. At the end of the experimental course, lasting two school years, students will receive a certificate of special training.

There are continuous meetings at all levels among the national network of Technical Agricultural Institutes “Re.N.I.S.A” which facilitates institutional meetings. The ITA “Emilio Sereni”, being the leader of Re.N.I.Sa, collaborates: 1) at the state level with the Ministry of Education, the Ministry of Agricultural Policies, as well as with the Parliament; 2) at the regional level with the Lazio Region's regional department of labour, education and agriculture; 3) at the municipal level with the Rome municipality, 'department of labour, education and agriculture.

COVE could be improved in the future by focusing more on sectorial and regional activities instead of a national level approach. Each partner might act as leader of a regional CoVE focusing on sectorial activities aiming to expand the range of tasks beyond the regional borders. AS an example, PP21 ITA “Emilio Sreneni” might be the leader of a CoVE about addressing challenges in the fields of agriculture, climate and environmental protection within the framework of global reorientation and innovations with a long-term perspective.

Outlook

COVE Italy will be continued in accordance with the business and financing plans presented in chapter 7.

Structural EU funds might be useful to support CoVE and develop further networks in other Italian regions, in particular the Programma Operativo Nazionale (PON) of the MIM; the Cohesion Funds for the next programming period: https://opencoesione.gov.it/it/lavori_preparatori_2021_2027/ and the national and regional Rural Development Programs for the programming period 2024-2027.

The partnership will monitor the development of the activities in each region and will share among participants the opportunities provided by EU funded projects.

In view of the good cooperation with UNIONCAMERE, the Italian system of chambers, further cooperation will continue.

The collaboration among partners working in different fields has largely increased the ability of ITA “Emilio Sereni” to widen the perception of the necessities of business and works thank to the perspectives offered by very competent partners.

4.6 Poland¹²

Introduction

The aim of this report is to present a model of cooperation within the Vocational Excellence Centre, which was created through the cooperation of three institutions: Secondary Technician School from Słupsk, the Chamber of Crafts from Szczecin and Pomeranian University in Słupsk. We are jointly participating in the educational project '3LoE - Tri-level centres of vocational excellence: Qualification, Entrepreneurship and Innovation in the Green Economy', which aims to develop key professional competences, entrepreneurship and innovation in the context of the green economy.

Centre of Vocational Excellence

The Centre for Vocational Excellence is a unique venture that brings together the experience and resources of three different but complementary institutions. Each partner brings unique competencies that enrich the Centre's education and training offer. The Centre of Vocational Excellence is a key element in developing modern vocational competences, supporting entrepreneurship and promoting innovation in the context of the green economy. Created in cooperation between three institutions - the Mechanics and Logistics School Complex in Słupsk, the Chamber of Crafts from Szczecin and the Pomeranian University in Słupsk - the Centre is an example of a model partnership that benefits both students and the local community and labour market. The Centre for Vocational Excellence in Słupsk plays a key role in developing modern professional competences, supporting entrepreneurship and promoting innovation in the green economy. Thanks to the cooperation of three complementary institutions, the Centre offers comprehensive and market-oriented educational programs that prepare young people to function effectively in the dynamically changing world of work. The Centre acts as a bridge between education and the labor market, providing pupils and students not only with theoretical preparation but also with practical experience. Through cooperation with businesses, students have the opportunity to come into direct contact with potential employers, making it easier for them to find employment after graduation. The centre is responsible for developing and implementing modern curricula that meet the needs of the labor market and promote the green economy. By working closely with local businesses, these programs are tailored to current industry requirements and trends.

¹² Prepared by Tadeusz Tanski Mechanical and Logistics School Complex, Słupsk

Objectives of cooperation

- Developing modern professional competences in the green economy.
- Promoting entrepreneurship among young people and adults.
- Fostering innovation through research and development projects.

Areas of cooperation

- Vocational education and training: Development and implementation of modern curricula that take into account the needs of the labor market and promote the green economy.
- Apprenticeships and traineeships: Organizing apprenticeships and internships that enable students to gain practical skills and work experience.
- Research and development projects: The implementation of joint research projects that aim to develop innovative solutions in the green economy.

The Complex of Mechanical and Logistics Schools in Słupsk is an educational institution that educates students in technical and logistics professions. The school offers practical classes that prepare young people to enter the labor market with the right technical and logistics skills. As part of its innovative measures, the school has introduced the specialization ‘Ecological solutions in logistics’. This provides students with knowledge about sustainable logistics practices, which is crucial in the context of the green economy.

The Szczecin Chamber of Crafts represents the interests of craftsmen and entrepreneurs, providing them with support in developing their skills and competences. The Chamber organizes courses and workshops that target both students and experienced craftsmen, promoting entrepreneurship and innovation. In addition, the Chamber takes care of vocational training and helps graduates find employment, which increases their chances on the labor market.

The Pomeranian University of Słupsk contributes its academic knowledge and research capabilities. The University supports the development of curricula, conducts research and offers teaching support, which contributes to the quality of vocational training and fosters innovation. Graduates of the Group of Mechanical and Logistics Schools who have completed the specialization ‘Ecological solutions in logistics’ have the opportunity to continue their studies in the course ‘Green supply chains’ at Pomeranian University. Thanks to an agreement between the institutions, some subjects passed in high school are recognized at the university, allowing students to take a second course of study in ‘Management’ at the same time.

Suggestions for improvements to the cooperation model

- Increase frequency of meetings and exchange of experiences: Regular meetings and workshops will allow for ongoing problem solving and better coordination of activities.
- Introduction of more advanced communication tools: The use of modern communication platforms will enable faster and more efficient exchange of information.

- Expanding cooperation into new professional areas: Introduce new curricula and research projects that take into account current labor market needs.

Next steps and future activities

- Continuation and expansion of existing initiatives: Maintain a high level of quality in training programs and further promote entrepreneurship and innovation.
- Broaden the partner base: Establish partnerships with new institutions and companies that can add value to the project.
- Monitoring and evaluating the effectiveness of cooperation: Regular monitoring of progress and evaluation of the effectiveness of activities to allow necessary adjustments and improvements.

The Collaboration Model

The Collaboration Model has been developed to maximize the benefits of combining the resources and expertise of the three key partners. The main elements of the model are outlined below:

a) Mechanical and Logistics School Complex in Słupsk

Specialization ‘Ecological solutions in logistics’: Introducing a specialization that emphasizes sustainable logistics practices, such as reducing emissions, optimizing transport routes and using environmentally friendly means of transport.

Practical classes and projects: Students participate in practical activities and projects that prepare them to apply green solutions in logistics.

b) Pomeranian University in Słupsk

Green supply chains’ course: Secondary school graduates continue their education with a major that focuses on managing sustainable supply chains.

Recognition of subjects: Thanks to an agreement between the school and the university, some subjects passed in high school are recognized at the university, allowing students to take a second course of study - ‘Management’ - at the same time.

Interdisciplinary projects: Students participate in interdisciplinary research and development projects that combine logistical and management aspects to support innovative solutions in the green economy.

c) Chamber of Crafts and Entrepreneurship from Szczecin

Courses and workshops: Organization of courses and workshops on green solutions in crafts and entrepreneurship, which are available to pupils, students and experienced craftsmen.

Employment and internships: The Chamber takes care of vocational training and helps graduates find employment. It also organizes internships with local companies that specialize in sustainable logistics and green supply chains.

Key Areas of future Cooperation

1. EDUCATION AND TRAINING

Curricula: Development of joint curricula that integrate knowledge of green logistics solutions and green supply chains.

Workshops and seminars: Organize regular workshops and seminars with industry experts to enhance students' knowledge and develop their practical skills.

2. RESEARCH AND INNOVATION

Research and development projects: Implementation of joint research projects that focus on developing innovative technologies and solutions for the green economy.

Laboratories and research centres: Using university resources and partner laboratories to conduct research and experiments that support sustainable solutions in logistics.

3. INTERNSHIPS AND PLACEMENTS

Internship programs: Organizing apprenticeships and internships in companies involved in the green economy, enabling students to gain valuable experience.

Cooperation with companies: Establishing and maintaining partnerships with local businesses that offer internship and apprenticeship placements.

4. ENTREPRENEURSHIP AND EMPLOYMENT

Support for start-ups: The Chamber of Crafts offers support for start-ups and new enterprises that implement green solutions in logistics.

Career counselling: Professional career counselling for graduates to help them plan their career and find a job in the green economy sector.

Recommendations for the Future

In order to further enhance the effectiveness of the cooperation and to continue the development of the Professional Competence Centre, we propose the following actions:

- Expanding specializations: Introduce additional specializations related to the green economy in secondary school and university.
- Increasing the number of partners: Establishing cooperation with new companies and institutions that can bring additional value to the project.
- Development of international cooperation: Collaborating with foreign educational and research institutions to enable the exchange of experiences and best practices.
- New specializations Renewable Energy in Logistics: Introduction of a specialization related to the use of renewable energy in logistics, which includes the topics of solar panels, wind energy and energy management in logistics companies. Sustainable Transport: Development of a curriculum on green transport modes, such as electric vehicles, biofuels and public transport systems.
- Short-Term Courses: Organization of short-term courses and training to quickly acquire specific skills related to the green economy.
- Certifications: Introducing labor market-recognized certification programs that prove competence in sustainable logistics and green supply chains.
- Innovation Incubators: Creation of innovation incubators in collaboration with technology companies that support the development of start-ups and new technologies in the green economy.
- Partnership Labs: Development of partnership labs where pupils and students can work on real projects in collaboration with industry.
- Mentoring: Mentoring programs with experienced employees from the industry who can share their knowledge and experience with younger colleagues.

- Rotational Internships: Introduction of rotational internship programs that allow students to gain experience in different departments of companies, with an emphasis on internships related to green logistics solutions.
- Erasmus+: Expanding participation in programs such as Erasmus+ and establishing new partnerships with universities and vocational schools from other countries.
- Joint Research Projects: Implementing international research projects with foreign partners that focus on innovation in the green economy.
- Conference Organization: Organizing international conferences and symposia on green supply chains to share experiences and best practices.
- Participation in Foreign Events: Support for pupils and students to participate in international competitions, trade fairs and industry conferences.
- Socio-Ecological Projects: Collaboration with NGOs on projects that combine social and environmental objectives, e.g. recycling programs, environmental activities.
- Digital Learning Resources: Creating and sharing digital learning resources that support remote and hybrid learning.

Summary

The cooperation model within the Vocational Excellence Centre is based on the synergy of three key partners: the Group of Mechanical and Logistics Schools in Słupsk, the Chamber of Crafts from Szczecin and Pomeranian University in Słupsk. Thanks to joint activities in education, research and apprenticeships, it is possible to educate modern specialists who are prepared to work in a sustainable economy. The introduction of the specialization ‘Ecological Solutions in Logistics’ and the possibility of continuing their studies in the field of ‘Green Supply Chains’ at the Pomeranian University is an innovative approach that provides pupils and students with a comprehensive education and increases their chances in the labor market. Implementation of the above recommendations will allow the Vocational Competence Centre to further develop and strengthen its position as a leader in vocational education in the green economy. Thanks to the synergy of three key partners - the Group of Mechanical and Logistics Schools in Słupsk, the Chamber of Crafts from Szczecin and the Pomeranian University in Słupsk - it is possible to create innovative educational programs that prepare young people for the challenges of today's labor market and promote sustainable development

4.7 Spain¹³

Partner Structure

- Coordination Partner: Institut Pere Martell (VET school), Tarragona
- Ministry of Education at the Government of Catalonia, Barcelona

¹³ Prepared by Aitor Lallana and David Millet, Institut Pere Martell, Spain

c) AGBAR (Water management company), Barcelona

COVE Spain also includes other partners with a binding cooperation agreement:

a) Universitat Rovira i Virgili (Faculty of Chemistry), Tarragona

b) Chamber of Commerce and Industry, Tarragona

c) Escuela del Agua (Water School), Barcelona

d) Institut Esteve Terradas (VET school), Cornellà de Llobregat

Construction and Development of COVE Spain

Most of the training activities were carried out by two VET schools: Institut Pere Martell (in the city of Tarragona, as a full partner in the Project) and Institut Esteve Terradas (in the outskirts of Barcelona, as part of the Ministry of Education at the Government of Catalonia). The reason for this choice is that these two schools are leading training centres in the region when it comes to providing VET diplomas (both EQF 4 and 5) in the water sector, which is the professional and economic arena central to our participation in the Project. AGBAR's Water School was also responsible for some of the training activities, especially those aimed at management personnel and employees of small and medium-sized enterprises. After signing an agreement with URV (Universitat Rovira i Virgili, based in the Tarragona area), AGBAR's other role was to offer posts for 4th-year university students so that they could do 12-ECT internships in any of its branches all over Catalonia in order to accomplish their Dual bachelor's degree in chemistry.

The most difficult obstacle to overcome was the incorporation of the university. It was not until July 2023, after 3 years of the Project's kick-off meeting, that we managed to find a way to do so. This delay was due to the fact that Universitat Rovira i Virgili did not have a Dual Bachelor's Degree program. However, in the 2022-2023 academic year, they started one in Chemistry, which fitted perfectly with the topics that were being implemented in the Project and allowed us to design and establish a mutual cooperation process. As it has been mentioned above, our intention is to expand and look for further cooperation elsewhere because we are conscious that there is always room for improvement. Taking advantage of the organic structure of CoVEs, for example, we are planning to incorporate the Chamber of Commerce and Industry of Tarragona, which will be a straight-forward way to reach different enterprises in the country.

From the Pere Martell Institute, a proposal has been made to adapt the Installation and Maintenance cycle, considering that the center does not have the authority to make curriculum modifications, adapting the maintenance cycle to the needs of the water sector. For these purposes, we have adjusted existing activities to meet the profile requirements and have also established dual agreements with companies in the water sector so that students in the cycle can undertake internships in companies within the sector that were not previously involved.

Lastly, it should be noted that, unfortunately, the WP4 A6.25 Test Training E Cradle to Cradle activity in SMEs could not be carried out due to the inability to find a trainer who met the minimum guarantees required to conduct this training.

Regional Events

a) November 2022: Quality Day, a series of presentations and work café sessions for VET teachers. One of the tables was devoted to international projects, 3LoE being one of them, with 10 participants.

b) June 2022 and 2023: Closing Day, when the Ministry of Education disseminates the achievements of the current academic year among VET teachers. Divided into different rooms according to the interests of the participants, the one led by the international unit had around 50 mobility coordinators.

c) July 2023: iQCampus, a one-week summer training campus for VET teachers. One of the courses was about KA2 and KA3 projects and 3LoE was one of them. Over 50 VET teachers followed the course online.

d) January 2024. Laura Roigé, President of the Tarragona Chamber of Commerce, and Josep Maria Pallarès, Director of the Pere Martell Institute, have signed an ambitious strategic collaboration agreement with a dual objective: on the one hand, to work together to train students tailored to the needs of businesses, thus responding to the demand for qualified professionals; and on the other hand, to highlight the incorporation of the Pere Martell Institute into the 3LoE project.

e) February 2024: 2nd Seminar on Mobility and Cooperation Projects. Around 30 mobility coordinators attended the presentation on the 3LoE Project by a Hanse-Parlament representative.

f) May 2024 marks the realization of the "We Are Future" conference. This event is part of the strategic collaboration agreement signed between our center and the Tarragona Chamber of Commerce, which has a dual objective: on the one hand, to work together to train students tailored to the needs of businesses, thus responding to the demand for qualified professionals; and on the other hand, to highlight the incorporation of the Pere Martell Institute into the 3LoE project. (more than 100 participants students’).

Performed Educational and Consulting activities

a) Vocational and qualification counselling

b) Trainings Water supply technologies

c) Implementation dual vocational training Spain “Electromecanico”

d) Trainings Technologies water saving.

e) Training Wastewater treatment and recycling management

d) Training Preparation and management of SMEs for green economy

- d) Training Waste reduction and recycling management
- e) Implementation Training for SMEs: Energy Efficiency and Renewable Energies
- f) Training Water Resource Management During Drought Periods
- g) Training Resilient Strategies for Water Management in Response to Climate Change
- h) Training Generation of Energy from Wastewater and Waste
- i) Training Operation and Maintenance of Wastewater Treatment Plants (WWTPs) and Industrial Wastewater Treatment Plants (IWTPs)
- j) Training Efficiency in the Operation of Reverse Osmosis Desalination Plants: Advanced Practices and Innovative Solutions
- k) Training Sustainable Management of Wastewater in the Circular Economy: Approaches and Solutions
- l) Training Addressing the Climate Emergency and its Impact on the Water Cycle: Practical Approaches and Innovative Solutions

[Incorporate results of the project work into regional/national educational, economic and regional policy](#)

- a) Engagement with policymakers, educational institutions, industry leaders and community organizations to ensure their input and support.
- b) Alignment of the project outcomes with regional and national policy goals related to the water sector priorities (i.e. water supply and water saving technologies or wastewater treatment and recycling).
- c) Integration the project’s findings into the Vocational Education curricula, developing new courses or modules focused on the water sector and electromechanical skills and knowledge.
- d) Implementation of train-the-trainer courses in the water sector education, providing best practices and ongoing professional training on the new curriculum.
- e) Elaboration of a skills mapping exercise to identify gaps in the current workforce and align the Vocational Training programs with industry needs.
- f) Creating awareness campaigns to educate the community about the importance of Vocational Education in the water sector and the opportunities it provides.

[Assessment of the Cooperation](#)

Coordination and collaboration among the Spanish partners was always easy because we based it upon trust and communication from the very beginning. Frequent meetings,

both online and face-to-face, were very useful and effective in order to evaluate our achievements and to put forth and plan the next steps to take.

One of the aspects that could be improved is the interaction among the VET schools from different countries that are involved in a CoVE, looking for closer cooperation activities in order to benefit from each other.

On the other hand, the relationship between governmental institutions, water sector companies, and vocational training centers offers many opportunities for synergies focused on achieving projects that would otherwise be very difficult for any one party to carry out alone. The relationship among these three organizations promotes smoother project execution and ensures that all sectors involved can be adequately addressed.

Assessment of the COVE program and of the international cooperation

We must analyze the COVE as a point of strength, as the involvement of all partners allows for the proposed objectives to be achieved much more effectively and efficiently. Each member of the COVE contributes their expertise in their respective fields, enriching the outcome of the projects undertaken collaboratively and addressing any potential obstacles that may arise in the process.

Participation as a COVE in the meetings held both in person at various locations and virtually has enabled the establishment of contacts that have led to collaborative projects between organizations from different countries, which would have been more challenging to achieve otherwise. The 3LoE project has been the facilitator of these contributions among partners from the different COVEs. Regarding improvements, we think that perhaps more time should be allocated for bilateral meetings between different organizations to share and discuss similar projects for future active collaboration, taking advantage of the in-person meetings of the seven COVEs.

Continuation of the COVE and international co-operation

As we have previously mentioned, we are very interested in continuing to collaborate in the future to promote synergies among the partners of our COVE. This collaboration aims to result in projects that have a positive impact on society, providing solutions and improving communication between the three entities: government, industry, and vocational education.

The continuation of COVE Spain and international cooperation is secured in accordance with the business and financing plans presented in chapter 7.

5 Concept for the Evaluation of the eight COVEs

5.1 Introduction

Numerous evaluation methods and standards have been established on an international level. The comparison of applied methods shows that concerning the validity, evaluation criteria play a significant role (cf. among others Widmer, Th., Evaluation: A systematic manual, Wiesbaden, 2009). Depending on which criteria certain priority is assigned to, the evaluation results turn out correspondingly. The same significance has the pragmatic di-rection. Therefore, an important question is: what is the evaluation aimed at?

Evaluation aims

The evaluation has the following aims:

1. It aims to provide objectified knowledge about the progress (quantity and quality) of processes.
2. It serves the control of such processes and helps capturing the strong and the weak points. Therefore, it is an instrument of quality assurance.
3. It serves the legitimization. In other words, a successful evaluation is evidence for the competence of the person responsible for the evaluated process.
4. Transparency, to make a dialogue possible.

In order to achieve these goals, the evaluation is performed in a process-related and summative manner: process-related (also formative, development-related) in order to evaluate the quality of the project progress and if necessary to make changes. The summative evaluation or evaluation of results serves the evaluation of the specified objectives within the framework of the project, final evaluation of impact and efficiency of the project lecturers management, of cooperation and transfer.

Formative evaluation includes several evaluation types:

- needs assessment determines who needs the program, how great the need is, and what might work to meet the need
- evaluability assessment determines whether an evaluation is feasible and how stakeholders can help shape its usefulness
- structured conceptualization helps stakeholders define the program or technology, the target population, and the possible outcomes
- implementation evaluation monitors the fidelity of the program or technology delivery
- process evaluation investigates the process of delivering the program or technology, including alternative delivery procedures

Summative evaluation can also be subdivided:

- outcome evaluations investigate whether the program or technology caused demonstrable effects on specifically defined target outcomes
- impact evaluation is broader and assesses the overall or net effects -- intended or unintended -- of the program or technology as a whole
- cost-effectiveness and cost-benefit analysis address questions of efficiency by standardizing outcomes in terms of their dollar costs and values secondary analysis

re-examines existing data to address new questions or use methods not previously employed

- meta-analysis integrates the outcome estimates from multiple studies to arrive at an overall or summary judgement on an evaluation question.

Methods

A combination of qualitative and quantitative instruments will be drawn upon for the evaluation. “If one wants to ensure the availability of statements concerning relevant program conditions and impacts through the framework of mutually reinforcing evidence so the multiple methodic access providers, in general, a more comprehensive and in-formative picture than a monomethod approach” (Brandtstädter, Jochen (1990): Development during the course of life. Approaches and problems of lifespan development psychology. In: Mayer, Karl Ulrich (Hg.): Life courses and social transformation (special issue of the Cologne magazine for sociology and social psychology. Opladen: Westdeutscher Verlag.).

Whereas for the analysis of process-related data (program control, execution etc.) mostly qualitative survey methods are suitable, for the verification of achievement of the goals, of impact and causal assessment quantitative survey and evaluation methods have to be implemented (Stockmann, Reinhard: Was ist eine gute Evaluation. Saarbrücken: Centrum für Evaluation, 2002. (CEval-Arbeitspapiere; 9).

Within the framework of evaluations, the most frequently used methods are:

- Secondary analysis of available materials
- Guided interviews
- Standardized surveys or partly standardized surveys
- Case studies

The selection of methods depends on the specific evaluation aims that will be discussed more specific in the following. Overall, a mixed model – consolidation model – is implemented. According to the general description it means that first quantitative survey/research is performed. The obtained data material is subsequently evaluated quantitatively, then it is followed by qualitative research method which is aimed at the consolidation of achieved results. This provides material for the interpretation of expected and unexpected effects and illustrates the results of quantitative studies based on case examples.

Therefore, standardized as well as partly standardized surveys were used in the form of written questionnaires to evaluate the construction and operation of the seven Centers of Vocational Excellence within the project 3LOE. Complementary results were achieved after that with the help of guided interviews.

5.2 Overview of quality assurance of the 3LOE project

Quality assurance, evaluation and monitoring of four areas:

- Educational measures and innovation promotion (see 2.2 – 2.5)
- Transfers and implementation consulting

- Quality assurance for the implementation of the project
- Development and cooperations of centers of professional excellence

Quality assurance and evaluation of educational measures occur in the Work Packages, in which qualification shall be developed, tested and implemented (WP 2 to 5). The results of quality assurance and evaluation shall be implemented directly into the individual educational measures.

Quality assurance and evaluation of the transfer processes, implementation consulting and the entire project implementation shall occur in Work Packages 1 "Project Management" and Work Package 7 "Dissemination and implementation advice". As the work for these areas is closely linked, the survey and analysis of the data shall be performed using identical methods and generally uniform work processes.

The establishment and operation of the centres of vocational excellence is evaluated separately by

- Project Partner 1 Hanse-Parlament for the centres of vocational excellence in Germany, Poland and Spain
- Project Partner 13 Institut für angewandte Gewerbeforschung for the centres of vocational excellence in Austria and Italy
- Project Partner 22 National Centre for Education for the centres of vocational excellence in Lithuania and Latvia

5.3 Evaluation steps and data collection

Accordingly, the evaluation of the establishment and operation of the seven centers of vocational excellence is based on the following separate data investigations:

- Two written surveys to be filled out by each project partner of the Centers of vocational excellence using an online questionnaire (see Attachment I), towards the end of the first six months after establishment (December 2021) and two years after the start of operations (in May/June 2023).
- Self-evaluation of the work of the established COVE by the project partners in April 2024.
- Separate data collection through expert discussions and personal inter-views with:
 - the coordinator of every center,
 - all other center partners,
 - other participating VET institutions and,
 - if possible, with local/regional education authorities

The consultations, expert discussions and face-to-face interviews will be conducted at the first half of 2024. A guideline is provided in Attachment 2.
- Evaluation of implementation reports prepared by each coordinator of a center of vocational excellence by June 30, 2024.

PP1 Hanse-Parlament, PP13 Institut für angewandte Gewerbeforschung and PP22 National Centre for Education prepare a separate evaluation report for each centre by

31 August 2024, including a summary of the evaluation results and recommendations for the establishment and sustainable operation of centres of vocational excellence.

PP1 Hanse-Parlament prepares a report of all quality assurance and evaluation activities of the 3LOE project with a summary of the results for the four areas by 31 October 2024.

- Educational measures and innovation promotion
- Transfers and implementation consulting
- Quality assurance for the implementation of the project
- Development and cooperations of centres of professional excellence

Attachment I: Questionnaire for the evaluation of the COVEs

Dear Project Partner,

Thank you for taking time to fill out this feedback form on the "Construction, operation and cooperation of the Center of vocational Excellence (COVE)" as part of the Erasmus+ project "3LOE". This survey is anonymous and will take approximately 10 minutes.

I General information

1. Please indicate your country:

2. Please indicate your involvement in the Center of vocational excellence

- ☐ Coordinating COVE partner
- ☐ Project partner
- ☐ Associated partner
- ☐ Other (please specify)

3. Please indicate the type of institution/organization you represent (multiple answers possible)

- ☐ Governmental organization/ Ministry department or similar
- ☐ Vocational School
- ☐ Institution of further vocational training
- ☐ Chamber of industry, commerce and/or crafts
- ☐ Business association
- ☐ Institution of SME promotion
- ☐ University or college
- ☐ Other (please specify)

4. What discipline/knowledge/skills are your top know-how in the center of vocational excellence? Please describe briefly.

II 3LOE Project organization and activities

5. Please rate the complexity of 3LOE project tasks:

- ☐ too easy ☐ simple ☐ suitable ☐ complicated ☐ too difficult

6. Are you completing the 3LOE project activities according to the schedule?

- ☐ Yes
☐ No (please specify – what are the reasons for delays)
-
-

7. Would you say you have been able to give your full contribution to 3LOE project tasks you are involved in?

- ☐ Yes
☐ No (please specify)
-
-

8. How do you evaluate the frequency of project meetings per year?

- ☐ too few ☐ enough ☐ too many

How many projects meeting per year would be suitable in your opinion?

9. Do you have enough resources to complete the 3LOE project tasks?

- ☐ Yes
☐ No (please specify)
-

10. Do you think there are enough tools for cooperation and dissemination in the project?

- ☐ Yes
☐ No (please specify)
-

11. Do you have enough information concerning...

- | | | |
|--|------------------------------|-----------------------------|
| The goals of the Center of vocational excellence | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Your role in the Center of vocational excellence | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| The other partners' roles in the Center of vocational excellence | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

12. How do you rate the collaboration with the other partners in your Center of vocational excellence?

- ☐ very poor ☐ poor ☐ average ☐ good ☐ excellent

13. How do you rate the international collaboration and exchange of experience with the other six Centers of vocational excellence?

☐ very poor ☐ poor ☐ average ☐ good ☐ excellent

III CoVE organization and activities

14. How do you rate the overall work of your Center of vocational excellence?

☐ very poor ☐ poor ☐ average ☐ good ☐ excellent

15. Would you say all relevant institutions are involved in your center of vocational excellence? If "No", what kind of institution is missing?

- ☐ Yes
- ☐ No (please specify)

16. Are the goals of your Center of vocational excellence clearly set?

- ☐ Yes
- ☐ No (please specify)

17. Does anything need to be changed regarding the concept structure of the Center of vocational excellence?

- ☐ No
- ☐ Yes (please specify)

IV First stage: Dual vocational training (EQF 3 & 4)

18. How do you assess the quality of activities implemented in Work package 3 in the project?

☐ very poor ☐ poor ☐ average ☐ good ☐ excellent ☐ does not apply

19. Dual vocational training (EQF 3 & 4) in my institution...

- ☐ was already running before the start of the 3LoE project.
- ☐ was introduced as part of the 3LoE project.
- ☐ does not apply.

20. How do you assess the quality of the dual vocational trainings (EQF 3 & 4) in your COVE in general?

☐ very poor ☐ poor ☐ average ☐ good ☐ excellent ☐ does not apply

V Second stage: Further vocational training (EQF 4 & 5)

21. How do you assess the quality of activities implemented in Work package 4 in the project?

☐ very poor ☐ poor ☐ average ☐ good ☐ excellent ☐ does not apply

22. Further vocational training (EQF 4 & 5) in my institution...

- ☐ was already running before the start of the 3LoE project.
- ☐ was introduced as part of the 3LoE project.
- ☐ does not apply

23. How do you assess the quality of the further vocational trainings (EQF 4 & 5) in your COVE in general?

☐ very poor ☐ poor ☐ average ☐ good ☐ excellent ☐ does not apply

VI Third stage: Higher education (EQF 6) and R&D projects in SMEs

24. Dual Bachelor programs in my institution...

- ☐ were already running before the start of the 3LOE project.
- ☐ were introduced as part of the 3LOE project.
- ☐ does not apply.

25. How do you assess the quality of activities implemented in Work package 5 in the project?

☐ very poor ☐ poor ☐ average ☐ good ☐ excellent ☐ does not apply

26. How do you assess the measures of innovation promotion and implementation of R&D projects in SMEs implemented by you in the 3LOE project?

☐ very poor ☐ poor ☐ average ☐ good ☐ excellent ☐ does not apply

VII Last page

27. After the end of the 3LOE project, the aim is that the Centers of excellence will keep running. Are you interested in further collaboration?

- ☐ Yes
- ☐ No (please specify)

28. What would you suggest doing better regarding the project?

29. Is there anything else you would like to share?

Attachment II: Interview

Consultations, expert discussions and interviews are carried out in the first half of 2024 (01.02. - 30.04.2024).

Instructions on how to conduct the interviews:

- a) The following set of questions serves only as guidelines and does not have to be strictly obeyed. The concerns of the interlocutors and questions that arise during the conversation should also be addressed.
- b) The project should be briefly introduced at the beginning of the discussion and the importance of the conversation should be determined within this context.
- c) Taking notes during the conversation is advisable. However, in order to be able to concentrate sufficiently on the interview, the conversation should be recorded on a sound recorded after the interlocutor has given their consent.

- d) The questionnaires do not have to be worked through "slavishly". If, for example, there is no opinion on individual questions, it is possible to continue immediately with the next question.
- e) Estimated duration of interview: Approx. 30min - one hour.
- f) An information sheet and consent form and the questions will be sent to interviewees beforehand.

Questions for the coordinators of the Centers of vocational excellence:

1. As coordinator, how do you assess the structure, development and achieved status of COVE?
2. Which of the planned activities for the establishment and ongoing operation of the COVE have you already realized? Which are still to be done? What further action do you plan to take?
3. How is the coordination proceeding? Which coordination activities do you carry out? What is the level of effort?
4. How do you assess the cooperation with the other COVE partners? Has the cooperation between vocational schools, chambers and universities proven successful? What are high lights in this regard?
5. Can you cover all tasks with the existing COVE partners? Do you need to recruit additional partners?
6. Are there any associated partners in the COVE? What effects are associated with this? Do you want to involve (further) associated partners?
7. What measures in vocational training are you already implementing? What is your general assessment of the success to date? What is planned for the future? Which measures are particularly positive? Which ones have not been successful or have been less successful?
8. Are you yourself involved in further vocational training? How do you generally assess the success so far? What is planned for the future? Which measures are particularly positive? Which ones have not proven successful or have proven less successful?
9. Are you involved in the implementation of dual Bachelor degree programs? How do you generally assess the success so far? What is planned for the future? Which measures are particularly positive? Which ones have not proven successful or have proven less successful?
10. Are you involved in promoting innovation? In general, how do you assess the success so far? What is planned for the future? Which measures are particularly positive? Which ones have not proven successful or have proven less successful?
11. Are there any problems or bottlenecks in the development of COVE and the implementation of educational measures? Do you need any help?
12. What developments and main activities do you plan after the end of the project?
13. How do you assess a continuation of the COVE after the end of the project?
14. Has the cooperation model proved successful in setting up and running the COVE? Or would a different model have to be realized for the future COVE operation, e.g. foundation of a non-profit company?
15. What are the management's expectations?

Questions for the other project partners of the Centers of vocational excellence:

1. How is the transformation into the COVE assessed? What aspects are assessed as positive? What aspects are assessed as negative? Has anything changed?
2. How do you assess the cooperation with the other COVE partners? Has the cooperation between vocational schools, chambers and universities proven successful? What are high lights in this regard?
3. Can you cover all tasks with the existing COVE partners? Do you need to recruit additional partners?
4. Which own educational measures do you carry out within the framework of the COVE? How do you generally assess the achieved status and success so far?
5. Have you introduced dual vocational training? For which professions? How do you assess the effects? What are the reactions from the companies?
6. What measures in vocational training are you already implementing? What is your general assessment of the success to date? What is planned for the future? Which measures are particularly positive? Which ones have not been successful or have been less successful?
7. Are you yourself involved in further vocational training? How do you generally assess the success so far? What is planned for the future? Which measures are particularly positive? Which ones have not proven successful or have proven less successful?
8. Are you involved in the implementation of dual Bachelor degree programs? How do you generally assess the success so far? What is planned for the future? Which measures are particularly positive? Which ones have not proven successful or have proven less successful?
9. Are you involved in promoting innovation? In general, how do you assess the success so far? What is planned for the future? Which measures are particularly positive? Which ones have not proven successful or have proven less successful?
10. Are there any problems or bottlenecks in the development of COVE and the implementation of educational measures? Do you need any help?
11. How do you assess a continuation of the COVE after the end of the project?
12. Has the cooperation model proved successful in setting up and running the COVE? Or would a different model have to be realized for the future COVE operation, e.g. foundation of a non-profit company?

Questions for associated partners (other participating VET institutions) of the Centers of vocational excellence:

1. A COVE has been established in your region with which you cooperate. How do you rate the COVE in general? Which aspects are positive, which negative?
2. What do you bring to COVE as associated partners? How do you assess the cooperation?
3. Do you carry out educational measures and/or innovation promotions together with the COVE? In which areas? With what success?
4. Should COVE integrate further partners or associated partners?
5. How do you assess the cooperation model? Do you recommend another solution?
6. How do you see the future development of COVE? In which areas is there a particular need for development?

7. Do you have any further suggestions and proposals for the future development of vocational education in your region in general and for COVE in particular?

Questions for local/regional authorities who are responsible for vocational training, further vocational training and higher education and/or for innovation promotion of SMEs.

1. A COVE has been established in your region. Do you know COVE, do you work with it? How do you rate the COVE in general? Which aspects are positive, which negative?
2. What has changed?
3. What has improved?
4. And what has gotten worse?
5. Are there any key changes resulting from the establishment of the COVE?
6. Which changes have been successful, and which have failed?
7. Will there be more dual training provided within the COVE?
8. How is the dual training assessed?
9. Are you involved in funding the COVE? How do you support and promote COVE so far? What are your plans for the future in this regard?
10. How do you assess the cooperation model? Do you recommend another solution?
11. How are future prospects assessed?
12. There are expectations regarding the operation and the further development of the COVE in future.

6 Evaluation Reports

6.1 Written evaluation in the first year of the project

In the following, the results of the first online survey conducted between December 2021 and February 2022 in the frame of the evaluation of the “the development and operation of the 7 CoVEs” are presented. An online survey was created that was shared with the project coordinators.

21 people responded to the feedback survey.

1. General Assessment

	ABSOLUTELY AGREE	SOMEWHAT AGREE	NEITHER AGREE NOR DISAGREE	SOMEWHAT DISAGREE	ABSOLUTELY DISAGREE	TOTAL	WEIGHTED AVERAGE
The TTT met my expectations.	57.69% 15	30.77% 8	3.85% 1	3.85% 1	3.85% 1	26	1.65
The TTT was useful for my work.	53.85% 14	30.77% 8	11.54% 3	0.00% 0	3.85% 1	26	1.69
I would recommend this training course.	53.85% 14	15.38% 4	26.92% 7	0.00% 0	3.85% 1	26	1.85

2. Content and Methods

	FULLY AGREE	SOMEWHAT AGREE	NEITHER AGREE NOR DISAGREE	SOMEWHAT DISAGREE	DISAGREE	TOTAL	WEIGHTED AVERAGE
The content of the TTT was interesting and informative.	53.85% 14	34.62% 9	3.85% 1	3.85% 1	3.85% 1	26	1.69
The methods of the TTT were suitable.	65.38% 17	15.38% 4	11.54% 3	3.85% 1	3.85% 1	26	1.65
The training contents were relevant to my needs.	42.31% 11	26.92% 7	15.38% 4	11.54% 3	3.85% 1	26	2.08
I expect to use the knowledge and skills gained from this training.	53.85% 14	23.08% 6	19.23% 5	0.00% 0	3.85% 1	26	1.77

3. Lecturers/Trainers

	FULLY AGREE	SOMEWHAT AGREE	NEITHER AGREE NOR DISAGREE	SOMEWHAT DISAGREE	DISAGREE	TOTAL	WEIGHTED AVERAGE
The lecturers/trainers were communicative, friendly and approachable.	76.92% 20	19.23% 5	3.85% 1	0.00% 0	0.00% 0	26	1.27
The lecturers/trainers were goal- and result-oriented.	65.38% 17	23.08% 6	11.54% 3	0.00% 0	0.00% 0	26	1.46
The lecturers/trainers were competent and well prepared.	76.92% 20	23.08% 6	0.00% 0	0.00% 0	0.00% 0	26	1.23
The lecturers/trainers responded well to questions and queries from the participants.	65.38% 17	26.92% 7	3.85% 1	3.85% 1	0.00% 0	26	1.46

4. Organization

	FULLY AGREE	SOMEWHAT AGREE	NEITHER AGREE NOR DISAGREE	SOMEWHAT DISAGREE	DISAGREE	TOTAL	WEIGHTED AVERAGE
The overall organization was good.	80.00% 20	16.00% 4	4.00% 1	0.00% 0	0.00% 0	25	1.24
The overall atmosphere of the train-the-trainer was good.	88.00% 22	12.00% 3	0.00% 0	0.00% 0	0.00% 0	25	1.12
The training venue and environment was comfortable and conducive to the learning process.	60.00% 15	20.00% 5	16.00% 4	0.00% 0	4.00% 1	25	1.68
The duration of the training was appropriate.	65.38% 17	23.08% 6	7.69% 2	3.85% 1	0.00% 0	26	1.50
Overall, I am very satisfied with the training and would recommend it to other counsellors.	65.38% 17	19.23% 5	15.38% 4	0.00% 0	0.00% 0	26	1.50

5. Other remarks

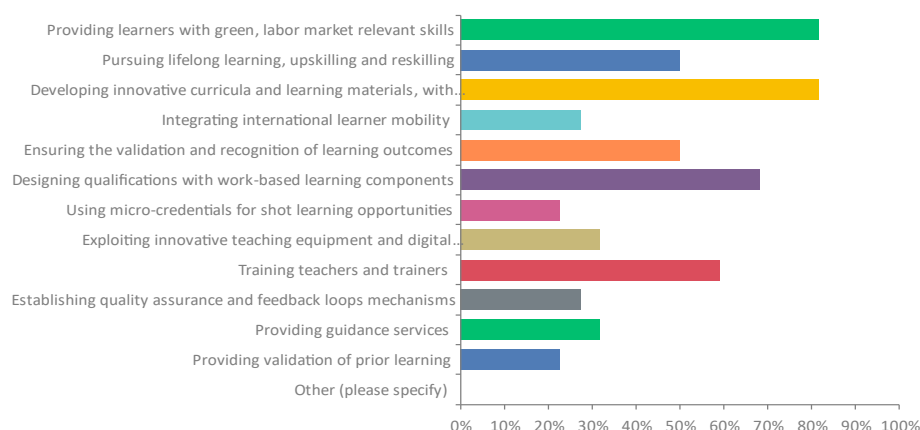
1. I liked that we had to work with mural every day. It provided opportunity not only to acquire the tool itself but also interact with other partners and especially spent some time together in national teams. Good dynamics, supportive and friendly atmosphere, trainers' commitment and interaction with each other during training. Well done!
2. The most interactive and exciting 3 days meeting ever. Partner PP13 IAGF - You did Your VERY BEST. Compliments for creating such a comfortable atmosphere. You rock!
3. Frankly, I didn't expect the training to be so interactive, interesting and useful. Huge thanks to the hosts! Great job! Waiting to meet everyone in Vienna!
4. The inputs collected are many and highly interesting. grounding the results, proposing predeveloped tools to be applied to the COVEs could help to make the inputs concrete. At national level there is a risk of watering down the inputs too much and not getting results. Thank you for the wonderful atmosphere, focused and relaxed at the same time...human relations are the most important things. I agree.
5. Many compliments for the organization even if in tricky times!
6. I think we should allow more time for open discussion on specific topics, especially connected with our COVEs, the successful stories and challenges (and possibly solutions, which we could all work together on.
7. Congrats to Austria for the nicely organized seminar!

6.2 Written evaluation in the third year of the project

The second anonymous survey of all project partners took place around two years after the first survey with an unchanged questionnaire in order to visualize changes in the evaluations over time. All project partners took part in this survey with a total of 25 respondents.

Q4: What teaching and learning activities does your CoVE work on? (multiple responses possible)

Answered: 22 Skipped: 3

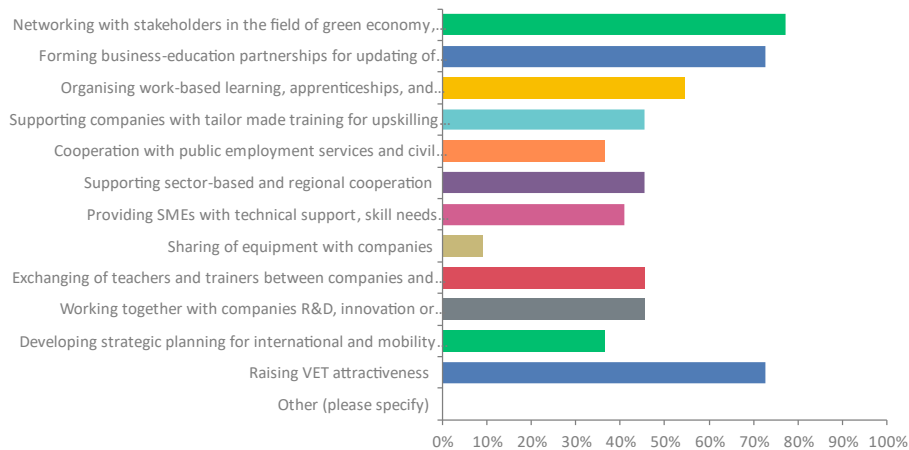


In their entirety, the eight COVEs cover all vocational education and training tasks at EQF levels 3 to 6.

They also fulfil all the tasks of a COVE. Networking with stakeholders in the field of green economy, business education partnerships and raising VET attractiveness are particularly strong (over 70%).

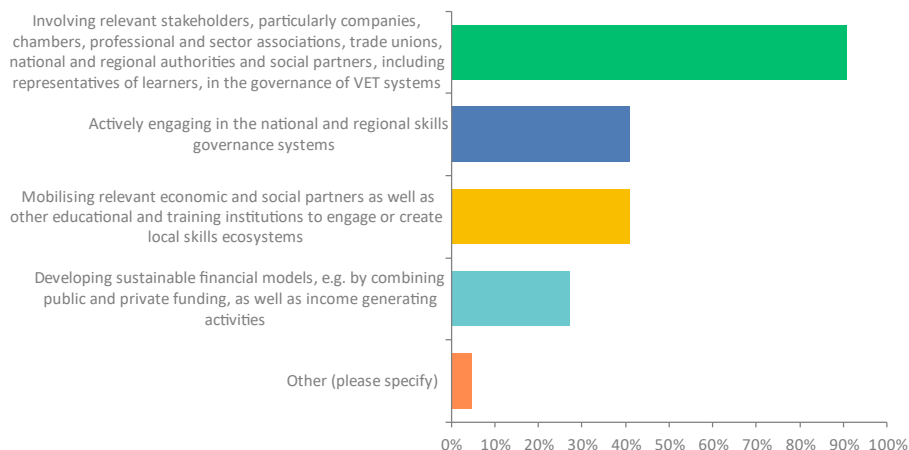
Q5: What cooperation and partnership activities does your CoVE work on? (multiple responses possible)

Answered: 22 Skipped: 3



Q6: What governance and funding activities does your CoVE work on? (multiple responses possible)

Answered: 22 Skipped: 3



Similar to the first survey, around 80 % of the project partners stated that the complexity of the 3LOE project tasks is suitable, while for around 15 % they are still complicated.

Also largely unchanged over time is completing the 3LOE project activities according to the schedule? While 70 % adhere to the work and time schedules, 30 % experience delays.

As in the first survey, 90 % of the project partners have been able to give their full contribution to 3LOE project tasks they are involved in, 10 % could not.

Unchanged from the first survey, all but one of the other project partners are still of the opinion that the frequency of project meetings is good and sufficient.

All project partners are convinced that they have sufficient resources to complete the project tasks and that all tools for cooperation and dissemination are available.

While three project partners stated in the first survey that they did not have enough information about the objectives of the COVE, their role and the role of the other partners in the respective regional COVE, all partners now feel very well informed.

The assessment of cooperation in the COVEs has improved over time. 80% of partners now rate it as very good and excellent, 20% as average.

The assessment of international cooperation and the exchange of experience has improved significantly over time. 85% of partners now rate these as very good and excellent and only 15% as average.

During the course of the project, all COVEs have firmly integrated other institutions (chambers, universities, vocational training organizations, etc.) into the work of the COVEs. With the exception of one partner, all other partners are now convinced that all relevant institutions are involved in the COVE work. With the exception of one partner, all other partners are of the opinion that the objectives of COVE are clear and well defined and that there is no reason to change the concept and structure of COVE.

All partners rate the quality of activities implemented on initial dual vocational training, further vocational training, higher education and on promoting innovation as good or excellent.

For a large number of project partners, the 3LOE project implemented:

- a) dual vocational training was introduced.
- b) further vocational training was greatly expanded and geared towards the needs of the world of work.
- c) dual Bachelor's degree programs were implemented for the first time.
- d) started to promote innovation and the realization of R&D projects for SMEs.
- e) significantly improved the quality of training and support programs.

To summarize, the second survey of the project partners resulted in extremely positive assessments of the structure and work of the eight COVEs. It is also particularly noteworthy that it was possible to complete the partner structure of the individual COVEs in the course of the project and to organize excellent cooperation within the individual COVEs and international cooperation. All project partners are clearly in favor of

continuing the collaboration and confirm that the continuation of the eight COVEs after the end of the project is assured.

6.3 Self-evaluation of the COVEs by the project partners

Working groups were formed with partners from different COVEs, who exchanged experiences on five questions and then determined the following results in plenary.

1st question

How do you experience the cooperation in your COVE? What is particularly good?
What is less good?

- Getting to know other local organizations.
- Diverse levels of education – sharing experiences.
- Create process of recognition between partners.
- Different sectors, different bodies (chambers, universities, VET schools) work together.
- Synergic effects of the 3LOE COVEs.
- Sharing resources to reach common goal.
- Promotion of dual system.
- Bridging the gap.
- Implementation dual system.
- Horizontally and vertically cooperation.
- Guidance by the Lead Partner.
- Resource sharing and implementation Workshops and conferences
- Different location work together, e.g. Riga, Vilnius etc..
- Inability meets physically often (because of location).
- Different regulation affecting different organizations.
- Changing employees of the partners.
- Lack of time and motivation.
- Difference of the COVEs members.
- Distance matters.

Summary 1st question

Most of the experiences reported are positive, in particular the cooperation between educational institutions at EQF level 3 - 6, the use of different resources, learning from each other and the joint processing of activities are emphasized. In addition, the promotion and implementation of dual vocational training and the organization of workshops and conferences are particularly positively highlighted.

In individual cases, the greater geographical distance between partners of individual COVEs (e.g. Italy) and the change of employees at individual partners are mentioned as negative aspects.

2nd question

Which measures and practices have proved particularly effective in promoting cooperation and the long-term continuation of your COVE?

- Physical and online meetings and train the trainer programs.

- Knowing each other's expertise.
- Collaborating on tasks.
- Cooperation through projects and funding opportunities.
- Common application.
- Long term continuation is secured.
- We expand the network and looking for new partner:
- Long term Continuation:
 - Further promoting cooperation within the 3LOE Partners.
 - Expand it with new partners, esp. in Green Economy, e.g. Cooperation with Build skills academy.
- Face-to-face meetings – good for promotion.
- Continuation at the educational level possible if you have legal entity
- Open up to new partners.
- Our goal is a legal entity.
- Four-year project duration is not enough.
- Educational continuation.
- Regular meetings (Zoom & Personal).
- Partner responsiveness is important.

Summary 2nd question

The permanent continuation of all eight COVEs developed in the 3LOE is assured. The activities planned after the end of the project will focus on the development and implementation of educational measures and the acquisition of additional partners. Some COVEs (e.g. Poland) want to create an independent legal form, while the co-operation of COVE Hamburg is already based on a state regulation. Physical and online meetings and train the trainer programs are very important for securing long-term cooperation, but joint work in the development and implementation of educational measures and the achievement of common goals are of crucial importance.

3rd question

How have you benefited from international cooperation with the partners of the other six COVEs? What are the particular highlights?

- Best practice exchange.
- Opportunity to invite to collaborate outside of the 3LOE project, for example project proposals have been developed.
- Summer schools between partners.
- The curricula, to adapt, but a great starting point / layout.
- Great benefits: The Train the Trainer Programs with exchange of knowledge among partners.
- Great benefits: Examples and best practices (such as the German COVE).
- Exchange and cooperation in a big network.
- Cooperation within 3LOE & beyond.
- Productive meetings, e.g. meeting in Rome.
- Finding cooperation partners across the EU.

- Share practices, e.g. Management, networking, learning.

Summary 3rd question

All partners report very intensive and fruitful cooperation. The exchange of best practices, networking and the pooling of individual strengths are highly valued. The 3LOE project has realized a very intensive, international cooperation that will be continued in the long term. Curricula were developed jointly, implementations were mutually advised, summer schools were realized, effective models and legal regulations from one country were implemented in other countries, etc. The cooperation now extends far beyond the narrower scope of the 3LOE project. Project meetings and train-the-trainer seminars, which have proven to be effective instruments for promoting cooperation and exchange, are singled out as particular highlights.

4th question

Which measures and practices have proved particularly successful in promoting international cooperation? What support for international cooperation would you recommend for the future?

- Physical workshops.
- Working in mixed groups.
- The length of the project – getting to know everyone.
- Strong leadership from the lead partner.
- Transferring the COVE idea to other branches.
- Testing the same curricula in different countries with evaluation and sharing results.
- Open and valuable resources for the partner.
- The challenges per country were big.
- Many efforts were driven to face the activities at local level.
- New contract between COVEs.
- In future yearly meetings international at the same time.
- Workshops throughout the whole project.
- Train the Trainer Seminars.
- Continuation of digital collaboration.

Summary 4th question

The excellent international cooperation was achieved and consolidated through biannual project meetings, the implementation of a total of eight train-the-trainer programs, effective management of the project and, in particular, through joint work in international project groups and in the development and implementation of training measures. An annual meeting, online meetings and further train-the-trainer seminars are desired for the continuation of international cooperation.

5th question

Which promotional and educational measures implemented as part of the 3LOE project were particularly important and successful in your COVE?

- Content of curricula corresponds to needs of attendees.
- Legitimacy because of project size, partners, curricula etc.

- Curricula adapted to local needs and different EQF levels.
- Dual education – opportunity for collaboration.
- In the project developed KAIN method.
- Austria: it was very important to involve the professionals in the further vocational trainings.
- Latvia: Green thinking themes are now in the different level of education and trainings.
- Italy: Tests at EQF level 4 will be recognized by the region (principal stakeholder).
- Poland: a new specialization “Ecologic specialization in logistics” as dual vocational training and new dual study program “Green supply chains” at the university.
- In the 3LOE Project developed dual studies.
- In the 3LOE project developed new vocational trainings at EQF level 5.
- Awareness in education: digital & green skills.
- Promotion at homepage and in social media.
- Promotion about press releases, online presents and social media.
- Adaption of existing curricula with focus to digital and green skills.
- Enhancement of curricula.
- Increased awareness about COVEs.

Summary 5th question

The 3LOE project began by comprehensively analyzing the development of the economy, population, labor and education markets as well as the qualification requirements in the seven partner countries. Based on this, over 40 training programs at EQF level 3 - 6 were developed in accordance with the qualification needs and adapted to the different national conditions. The educational programs were tested and evaluated in various countries in order to record the different national conditions and were revised and finalized on the basis of the evaluation results. The completed educational programs were transferred to all eight COVEs and 70 associated partners from 13 countries and individual advice was provided on implementation. The project partners confirm that this approach has proved extremely successful and that they have benefited greatly from it.

6.4 Evaluation results of expert discussions and interviews

6.41 AUSTRIA¹⁴

Partner Structure

CoVE Austria consists of three partners. CoVE Austria is coordinated by WIFI Styria as the extended arm of the Styrian Chamber of Commerce (Körblergasse 113, A-8010 Graz). The two other partners who have signed the “*Cooperation Agreement on the Establishment of a Center of Excellence in the Green Economy in Austria*” are Campus

¹⁴ Prepared by Institut für angewandte Gewerbeforschung der Wirtschaftskammer Österreich

02 - University of Applied Sciences (Körblergasse 126, A-8010 Graz) and the Institute for Applied Business Research as the extended arm of the Austrian Federal Economic Chamber (Wiedner Hauptstraße 63, A-1045 Vienna).

CoVE Austria works together with many other institutions and organizations and maintains a lively exchange. Particularly about the creation of new (dual) vocational training in the area of the "green economy", for example with federal guilds of different professional groups such as chimney sweeps or vehicle technicians or with universities such as the University of Graz or Graz University of Technology, but also the Talent Center of the Styrian Chamber of Commerce. These partners act as loosely associated partners within CoVE and have not signed the CoVE agreement. There was also cooperation with educational institutions such as the WIFI Tyrol and Lower Austria as well as the education policy department of the Austrian Economic Chambers.

"As a department of educational policy of Federal Economic Chambers in Austria, we have not been involved in financing the CoVE. The nature of our support lies in the joint development of qualifications relevant to the labor market and in promoting relevant conditions that facilitate meaningful initiatives in higher VET."

The associated partners provided input for the creation of the content of the "Testing Tool for Vocational and Qualification Counseling", "Basic digital skills", "Service Technician" and "Basic knowledge of sustainability topics", among other things.

COVE structure and cooperation

CoVE Austria is a cooperative partnership consisting of two educational institutions - a vocational education and training provider and an academic education provider - and a company representative.

The two educational institutions, CAMPUS 02 - University of Applied Sciences for Business and the WIFI Styria as the extended arm of the Styrian Chamber of Commerce, are based in the Styrian capital Graz, approx. 200 km south of Vienna. From Vienna, the third partner for the whole of Austria, the Institute for Applied Business Research, acts as an extended arm of the Austrian Federal Economic Chamber as a company representative.

The IAGF has been in existence since 2016 and, due to its innovation activities in the field of skilled trades, has direct access to the individual federal guilds of professional groups from skilled trades and crafts throughout Austria and a dense network of companies that are active in training. A key pillar of the institute is to modernize initial and continuing vocational training and make it more attractive. For example, the IAGF can draw on many years of expertise in the revision and modernization of numerous master craftsman examination regulations in the trade and craft sector.

As this combination of partners provides a good representation of Austria's educational landscape at EQF levels 4, 5, 6, and 7, and direct input from the business community can be acquired through the company representatives, a cooperation agreement was

chosen as the CoVE form, which was signed by all partners. The Cooperation Agreement came into force on 30.06.2021.

"This is very good because several NQF levels are taken into account, not just 4 and 5, but also 6 and 7."

To ensure that the project ran smoothly and to meet deadlines for results, the partners coordinated with each other at regular intervals. This took place in face-to-face meetings as well as online meetings or over the phone.

"If necessary, there is coordination, exchange of experience, and support. - In the beginning, there was a lot of exchange. Then the work packages were worked through."

The effort for project management and coordination tasks is manageable and amounts to around four appointments per year. If necessary, extra appointments were arranged in good time. The cooperation is rated as very goal-oriented, uncomplicated, and open. All partners are interested in achieving the best possible output. The cooperation between training providers and company representatives was perceived as very positive and should be continued in the future.

Only external factors, such as the accreditation of Bachelor's degree programs at universities of applied sciences, were identified as bottlenecks in the development of the CoVE. However, these external factors cannot be controlled, so it can be said that there were no problems with the development of the CoVE.

"The collaboration is great! On the one hand, competent people are involved with a common goal in mind, namely, to improve education in Austria. On the other hand - and this is a real highlight: there was a cooperative spirit, not a competitive one! - Everyone was pursuing the same goal, namely, to create sustainable vocational training together!"

All of the goals set were coordinated, resolved, and implemented within CoVE. CoVE Austria does not have any dedicated "associated partners" in the sense that they have also signed the CoVE agreement. However, there are many existing collaborations with, for example, experts from professional groups (federal guilds), sector representatives of the WKO or universities, and other research institutions, with whom a regular (informal) exchange takes place via CoVE Austria. Feedback is obtained from the partners and possible future collaborations are discussed, either within the framework of CoVE or other education-related collaborations.

"What has improved? - The direct interaction with relevant companies and a better understanding of their qualification needs!" -

"What has changed above all is the cooperation and collaboration with experts from various sectors, accompanied by a vocational training research institute and tailored to the needs of the labor market."

The free choice and form of the cooperation model or legal form is seen as a great advantage for the establishment of a CoVE because it makes nationwide action possible or much easier. The long-term or sustainable financing of the operation of the CoVE would have to be better resolved, as each country has different legal requirements, and non-profit organizations can also be part of a CoVE. Nonetheless, attempts are being made to maintain the CoVE in the long term by selling the developed offer and other sources of funding. It is seen as an advantage that all three partners involved are part of the Austrian Federal Economic Chamber network and that there is a great deal of interest in the training program developed as part of 3 LoE, which combines the dual training pathway with an academic education pathway.

Tasks performed by the COVE (tasks of the COVE)

"Excellence in VET is a priority, I am familiar with the COVE as it has developed learning outcomes for qualifications that are in high demand in the Austrian labor market. Positive aspects: closeness to the labor market and the actual needs of the respective industries."

The main aim of COVE Austria was to develop new vocational training courses for SMEs in the area of "green skills" and "green economy".

"The CoVE has provided pioneering work in the field of CVET based on apprenticeship qualifications in combination with professional experience".

The establishment of higher vocational education and training in Austria at NQF levels 5 to 7 in cooperation with CoVE Austria can be seen as a milestone in innovation and making dual vocational education and training more attractive, which will be further strengthened by the creation of the Higher Vocational Education and Training Act (HBB Act), which will now come into force on May 1, 2024.

The CoVE 3 LoE project was able to make an important contribution to this milestone, as the first pilots on NQF 5 were developed as part of this EU project. These formed the basis for the content and accelerated development of the HBB Act. In addition, the "Technical Consulting for Energy Efficiency" qualification developed in LoE 3 will act as a pilot for the implementation of the HBB Act. This qualification will be the first formal training according to the HBB Act and serves as a template for the development of a handout for interested qualification providers who are planning to submit and implement a new higher vocational training by the HBB Act in the future.

"CoVE is very positive because with CoVE a contact person or expertise is established to support you in your activities - as a further developer in higher vocational education (HBB), but also as a know-how transfer for further development in training regulations in teaching, but also in communication with the stakeholders of the Green Skills Initiative, which range from BMK, bmaw, social partners, research institutes to the networks of the entire WKO (WIFI, specialist organizations, political departments, divisions, education platform, provincial chambers)."

The aim was to lay the foundations for making (dual) vocational training more attractive for trainees and opening up new training and career opportunities for them, while also creating new formal qualification opportunities for companies in the field of the green economy, which were previously lacking.

"Dual VET is at the core of VET in Austria and is therefore very highly rated. The same applies to all initiatives in CVET that build on dual VET qualifications."

CoVE Austria was able to achieve all the goals set in the project, such as the creation of new qualification standards and examination regulations at the NQF5 level, such as "NQF5 Heating technology", "NQF5 Energy efficiency consulting", "NQF5 Fire protection expert", "NQF5 High-voltage technology", "NQF5 Body vehicle technician". The finalization of the "Service technician bachelor" and the "Service technician master course" is planned.

Furthermore, train-the-trainer courses for "basic digital skills", networking activities, and joint regional events were carried out in close cooperation. Training courses were also held for trainers in SMEs. Curricula were also transferred from the Austrian CoVE to the other CoVEs developed in the 3LoE project. Furthermore, a basic course for sustainable topics will be developed by the Austrian CoVE and transferred to all partners.

"We are at the beginning of the great energy transition! The need for a CoVE is unbroken. The focus on the green economy must remain!"

Several promotional activities were carried out as part of the CoVE activities. On the one hand, the results and activities were presented at conferences, festivals, and events of all CoVE Austria partners (see dissemination documentation), on the other hand, the project was presented to relevant stakeholders in networking meetings. The training measures were carried out at the respective organizations by the activity plan. It is planned to offer the Service Technician on NQF 5 and the Bachelor, as well as all content not yet completed at the time of the interview, as products even after the official conclusion of the CoVE project.

As part of the promotion activities and the preparation of the results, we worked together with relevant stakeholders in the region where necessary.

A press conference on CoVE-Austria was successfully held in June 2024 and reported on in one of the highest-circulation regional newspapers (Oberösterreichische Nachrichten).

About the implementation of curricula at levels 6 and 7, CoVE-Austria is thinking aloud about the possibility of including universities.

"One "lesson learned" would be the involvement of universities so that curricula at NQF level 6 + 7 can be implemented more easily because universities of applied sciences in Austria have to have new curricula approved or accredited by the state. Universities have their curriculum commissions (university autonomy). The aim would be to better

involve universities of applied sciences at a political level in the development of curricula so that the quality of universities of applied sciences (high practical relevance) can be incorporated into higher vocational education."

The Federal Trade and Crafts Division also sees the added value of combining practice and theory in

"It might also make sense to involve the scientific community more, such as Prof. Dr. Bernd Gössling from the University of Innsbruck's Institute for Organization and Learning, as this could incorporate the latest findings from educational research."

Due to the long tradition of dual vocational training in this area, CoVE Austria was also able to offer its expertise and support to all those 3LoE project partners who are in the process of implementing or further developing dual vocational training in their country. To this end, an exchange took place at the VESK vocational school in Vilnius, Lithuania, where the Austrian dual system was presented and the advantages from a company perspective were outlined. In addition, a "Train the Trainer Masterclass" was organized for the teachers at the vocational school, where two outstanding experts in the confectionery trade passed on their knowledge in a two-day training course.

International co-operation

CoVE Austria uses the exchange with the international 3LoE partners to implement additional projects.

In close cooperation and exchange with the German project partner Berufliche Hochschule Hamburg, CoVE Austria is working on an Austrian "dual study" model, which will be further developed after the end of the project.

Furthermore, the Basic Digital Skills course was developed together with CoVE Poland. The CoVEs are generally in contact via project management as well as independently to promote further international cooperation. CoVE Austria is pursuing the goal of submitting further international education projects with other CoVEs and their member organizations in the next European call for proposals. The lessons learned by the various partners will be of great value for the further procedure to promote further cooperation.

In the future, it would be desirable for a formal or informal exchange between the individual CoVEs to take place regularly. - As far as the Austrian CoVE is aware, this is also planned by other CoVEs. A general wish to strengthen international activities would be to reduce the management bureaucracy in such projects so that the partners can concentrate even more on the content.

The international cooperation between the project partners is seen as solution-oriented, friendly, and very positive.

Long-term continuation and plans for the future

In the long term, the cooperation is to be continued and intensified. The accreditation of the BSc Service Technician is in progress, as is that of the Master's degree. The basic course for sustainable topics will also be integrated into Wifi Styria's product portfolio once it has been completed.

"... however, what is definite is the increased understanding of the importance of dual VET in general and the development of new qualifications in higher VET in particular. These new qualifications are only open to individuals who already look back on several years of professional experience, as a rule in combination with a first formal qualification, such as an apprenticeship qualification. Learning outcomes and clear assessment procedures have been developed and the first of these new qualifications will be made available to learners in 2025."

Funding for CoVE Austria has not yet been secured and therefore the continuation of CoVE after the end of the project is not yet certain. However, it is in the interest of all partners of the Austrian CoVE to continue it. The independent acquisition of financial resources is dependent on the implementation of the training courses created. The realization of the training courses depends on the number of participants. However, other alternative sources of funding are being sought, for example in the form of further third-party funding for research projects, and it is the declared aim to continue both national and international cooperation.

To be able to develop new training courses, a new CoVE submission or extension would be important.

Furthermore, it is being evaluated whether CoVE Austria should be expanded to include new partners (possibly universities and other educational institutions).

Conclusion (and Recommendation)

In principle, the creation of COVE Austria can be considered a great success. Within four years, CoVE Austria was able to achieve all the goals set within the framework of the project and, through cooperation with regional, national, and international partners, has built up many skills for the future creation of educational products. In addition to the project objectives, further formal training courses in vocational training in the green economy were initiated, which will be continued after the end of the project to establish formal qualifications in the field of green skills and by the HBB Act.

The cooperation with all organizations was very good, goal-oriented, open, and very collegial. And

"The Hanseatic Parliament is a very competent project manager".

The expectations of the management, future-oriented educational products that promote the Styrian and Austrian economy and make companies fit for the future, were fulfilled.

About dual vocational training, two milestones have been achieved, making dual vocational training more attractive - especially in the training offered in the green economy: On the one hand, journeymen and journeywomen can now continue their formal training after completing their apprenticeship at the NQF level 4 by training or specializing at NQF level 5. This improves their career opportunities and opens up new prospects for them. The master craftsman qualification is no longer the only further training option with a formal qualification.

The NQF5 Service Technician pilot aims to improve the permeability between academic and vocational training. Graduates of this two-year training course can go on to study for a Bachelor's degree, which only takes a further two years instead of three. The subject-specific examination is also taken into account when taking the university entrance examination.

This improves career opportunities and opens up new perspectives. The master craftsman qualification at NQF 6 is no longer the only further training option with a formal qualification.

"As regards the development of meaningful qualifications that address urgently needed skills and hence ensure employability of those holding the said qualifications prospects are very favorable." And "Keep close to the relevant industries".

6.42 GERMANY

COVE DRESDEN

The new Energy Efficiency Competence Centre, built and equipped by the Dresden Chamber of Crafts with financial support from national funds, was an excellent starting point for the development of COVE Dresden in the green economy. Unfortunately, at the start of the project there were significant staff shortages at the Dresden Chamber of Crafts, which persisted into the second year of the project. One problem, however, was that the responsible employees at the Dresden Chamber of Crafts had no or insufficient English language skills, making international cooperation difficult due to language barriers. In the course of the project, however, the Dresden Chamber of Skilled Crafts recognised the great importance of international cooperation and began to recruit employees with good English language skills and to equip existing employees with these skills while the project was still running.

1. Partner structure

The Dresden CVE is coordinated by the Dresden Chamber of Crafts.

The Dresden Chamber of Crafts signed a cooperation agreement with the company Stiebel Eltron GmbH & Co. KG, the European Institute for Postgraduate Education GmbH EIPOS and the Gustav Anton Zeuner Vocational Training Centre for Technology in Dresden.

2. COVE structure and cooperation

As part of the 3LoE project, the Dresden Chamber of Skilled Crafts has created its own ‘Energy Efficiency Centre for Buildings’ competence centre with funding from national funds, which is integrated into the structure of the Dresden Chamber of Skilled Crafts. In cooperation with other institutions, this competence centre offers numerous courses on energy saving, energy-efficient building technology and renewable energies. The chamber is intensively involved with the topic of the green economy, which was a great help in getting the project off the ground:

“We already had a certain knowledge advantage, as energy efficiency and the green economy were already key features of our training centre.”

Before the 3LoE project, the Dresden Chamber of Crafts was already in contact with the vocational school Gustav Anton Zeuner. The common interest in green economy made them cooperate within the project and sign a cooperation agreement. As they were already in contact before the project, the cooperation was easier and faster:

“Trust was already there. Thanks to this previous collaboration, we also know what training was provided at the vocational school. The vocational school know what courses we run, what opportunities we have.”

Within the COVE centre, the Dresden Chamber of Crafts is cooperating with the training provider EIPOS GmbH and with manufacturers. The latter provide them with heat pumps and are using their technology and facilities in exchange.

Even though the Dresden Chamber of Crafts was already working with other institutions on the green economy before the 3LoE project, the Dresden CoVE took some time to set up due to a change of staff:

“We had a change of personnel in the project. This has really been a bit of a handicap because various courses that we were to test, implement or develop at the beginning of the project had to be changed to meet the needs of our craftsmen.”

3. Tasks performed by the COVE

Dual training is an integral part of the German education system and was therefore not a new feature for the Dresden Chamber of Crafts:

“In Germany, training is based on the dual system. We have been living with this type of vocational training for decades, which is very successful, and so this focus within the framework of the project is very relevant for us.”

The courses developed by the Dresden COVE within the 3LoE project were adapted to meet the needs of the local companies:

“We have to be very careful to develop and offer courses that correspond to the interests and needs of the tradespeople, both in terms of content and organisation, for example in terms of length and timing.”

For example, a new customer service technology course and a modular additional qualification for customer service technicians were developed in the 3LOE project. This additional qualification is intended for trainees in initial training and can only be offered during the holiday period to be taken by apprentices:

“We are tied to certain times. We have to make specific use of the holiday period because the apprentices are otherwise in training, at vocational school, in the company or with us for inter-company apprentice training.”

The Dresden Chamber of Craft cooperated with the training centre EIPOS GmbH to make the training for building energy consultants accessible to everyone, regardless of their diploma. Offering a training for building energy is very important in Germany because every building owner needs to hire an energy consultant to be able to apply for state subsidies. The EIPOS GmbH already offers this course, but it is only accessible to people with a university degree. People without a university degree must take a basic course of 80 teaching units. The Dresden Chamber of Crafts developed a basic course with EIPOS GmbH for people without a university degree within the 3LOE Project, allowing them to access then the training course for building energy consultants offered by EIPOS GmbH.

New modular training courses for builders was also developed to support private people who want to build, construct or buy a building. The course provides the participants with legal bases and knowledge on system technology, but also includes the environmental aspect:

“We sensitise them to take the issue of sustainability into account in their decision.”

The 3LoE project enabled the Dresden Chamber of Crafts to evaluate courses they were already offering before the beginning of the project:

“In the 3LoE project in particular, we have now evaluated the master craftsman course in electrical engineering [...]”.

In the 3LOE project, COVE Dresden developed, tested, evaluated and implemented the following educational measures:

- Customer service technician
- Client seminar
- Cradle to cradle
- Circular economy
- Training of Trainers in SMEs
- Master craftsman course in electrical engineering
- AI seminar

- Basic course for energy efficiency experts
- Heating optimization
- Insulation materials in building services
- Design and planning of heat pumps

4. International cooperation

The cooperation between the Dresden COVE and the other COVEs mainly took place during the project meetings and the courses development. This is partly due to the language barrier but also to the difficult context in the chamber Dresden which the 3LoE project started:

“We started at a time when Covid was around, so some meetings could only take place online. Travelling was restricted, which, of course, also weakened our relationship to a certain extent. We shouldn't underestimate that. Sitting face to face like we do today is actually essential, also to build trust.”

The difference between education systems in different countries made international cooperation within the project very important.

“We were supposed to test a course concept where we realised that this topic is already taken into account in our initial training, i.e. in vocational training, whereas it is a topic for continuing vocational training in other countries. So, the educational programmes and vocational training courses differ from one country to another. This is not transferable 1 to 1.”

There is room for improvement in international cooperation for COVE Dresden. The Dresden Chamber of Craft underlines that it is very important to exchange on the obstacles, successes and the work done by the other COVEs.

5. Long-term continuation and plans for the future

The cooperation within the Dresden COVE will continue. The Energy Efficiency Centre for Buildings was set up with the help of the 3LoE project, has already become very well established, is held in high regard by SMEs and is completely integrated into the structure of the Dresden Chamber of Crafts, so it is sustainable. The centre is necessary to keep up with the different evolutions of the sector of the green economy, which is undergoing rapid growth and transition. Thanks to its partnerships, the Dresden Chamber of Crafts can offer training courses linked to the new technologies:

“We always want to present the latest technology, new technologies. We work together with the relevant actors, who then also provide us with new technology, which we can then incorporate into the lessons and really explore using practical examples.”

In the future, the Dresden COVE wishes to improve the partners' coordination to capitalise on each partner's resources and capabilities:

“We need to look even more closely at how we can make joint use of capacities or even the limited resources, which we are also experiencing in terms of training staff, for example, and also coordinate even more in terms of course developments. I think there are still topics that are perhaps being developed in parallel by one partner and the other, where we can say that we need to coordinate even better in order to be able to utilise resources well [...]. We're still a long way from realising our full potential.”

The Dresden CoVE already covers a large area but should continue to develop at regional rather than national level:

“We want to pick up people who are active in the regional partnerships in the immediate vicinity. And that's why it makes little sense nationally”.

This view is shared by the vocational school Zeuner:

“I also think that a certain regionality is very important right now. We also want to stay local, have contact with local companies and respond to their needs. If we do it centrally, I don't know, for the whole of Germany, then we're just too far away.”

As Saxony lies on the border between Germany, the Czech Republic and Poland, this paves the way for international cooperation with Czech and Polish partners. However, the language barrier is an obstacle that must be taken into account:

“The language barrier should never be ignored.”

As part of the 3LoE project, a good co-operation has been fruitfully developed, particularly with COVE Austria, which will be continued even more intensively in the future.

As Dresden COVE is built around the Chamber of Crafts, it will evolve in line with business needs.

6. Conclusion

The Dresden COVE took some time to set up. Although it already existed in a different form, the activities and structure had to be adapted to become a centre of vocational excellence. Now, Dresden COVE is well established. As it is completely integrated into the structure of the Chamber of Crafts, its business model is sustainable. Thanks to the 3LoE project, the Energy Efficiency Centre for Buildings developed new courses oriented towards the green economy and formalised its collaboration with its partners through agreements. Through the 3LoE project, the Dresden Chamber of Crafts could evaluate its training courses and reflect on what could be improved.

In the future, Dresden COVE is set to expand locally and regionally. It would not be relevant for Dresden COVE to be active at the national level because their activities are designed to meet local and regional needs. Germany being a big country, other regional COVEs on the green economy should be developed and adapted to the regional contexts. The Dresden COVE could however include Czech or Polish institutions at the border with Saxony in the event of demand from companies. To do so, there should be a special focus on language skills to overcome the language barrier.

The importance of international cooperation has been demonstrated in the 3LoE project.

The Dresden COVE will likely have to involve new partners to keep up with the rapid growth and transition the economy is undergoing.

COVE HAMBURG

In the project application, it was planned to develop only one COVE Germany, which was to be developed and operated by the project partners Hanse-Parlament, Hamburg University of Cooperative Education and Dresden Chamber of Crafts. After the project began, it quickly became apparent that the distance between Hamburg and Dresden was too great to carry out educational and promotional measures together. It was therefore decided to develop two independent COVEs in the green economy in Germany, one in Dresden and one in Hamburg.

The Hanse-Parlament and the Hamburg University of Cooperative Education have intensively accompanied and strongly supported the development of the COVE Dresden. A COVE was realised very successfully in Dresden.

At the start of the project, the Hamburg government passed a law to establish a new vocational university in Hamburg (Berufliche Hochschule Hamburg), which is obliged to cooperate intensively with companies, vocational schools, the Chamber of Industry and Commerce, the Chamber of Crafts and the trade unions. The Hamburg University of Cooperative Education was integrated into the Vocational University Hamburg, which began operations in 2022, making the Vocational University Hamburg a new partner in the 3LoE project. As the staff of the former Hamburg University of Cooperative Education continued to work on the project, this change of partner went smoothly. From 2022, the Vocational University Hamburg developed COVE Hamburg in the green economy very successfully. COVE Hamburg is set up and operated on the basis of the Hamburg Act with intensive co-operation between companies, vocational schools, chambers, etc.

The two German COVE Hamburg and Dresden co-operate intensively with each other.

1. Partner structure

The Hamburg COVE is coordinated by the Berufliche Hochschule Hamburg (BHH), a University of Applied Sciences offering dual study programmes that combine theoretical education on EQF6-level with practical training. The BHH collaborates with several vocational schools, companies and the School and Vocational Training Authority of Hamburg. All of them are de facto part of Hamburg COVE.

2. COVE structure and cooperation

The Hamburg COVE is based on legal frameworks such as the Hamburg Higher Education Act, agreements between the BHH and the City of Hamburg as well as the Vocational Training Act. The structure of the Hamburg COVE is considered as a real advantage:

“The advantage we have is that the legal framework makes many things easier because we can simply bring about cooperation more quickly [...]. There is a separate paragraph in the Hamburg School Act on cooperation between learning venues, which enables all participants involved in vocational training, to help shape the educational programmes and also to help develop them further.”

At the same time, the legal framework makes it more difficult to include external partners:

“On the other hand, it is sometimes also a close shop story that outsiders are perhaps not yet allowed in or allowed to participate in the way that would perhaps be helpful for a COVE.”

Other universities are not yet involved, and co-operation with several vocational schools and numerous companies is a matter of course:

“The university perspective is so far removed from the solution-orientated things in vocational schools that you can say, what's the point?”

However, it is very important, notably to support students with learning difficulties:

“As a university, we sometimes have students with learning difficulties, and we don't know exactly what to do with them. An impulse from the vocational school side, which is also very much involved with students with learning difficulties, can certainly be important and helpful. The visibility of mutual support formats or mutual education formats is a central task in the COVE.”

Every year, representatives of Universities of Applied Sciences, VET schools and companies gather during educational conferences to discuss the content of the modules and trainings.

The cooperation is working well. Signing a cooperation agreement is seen positively, as every party involved knows what to do and what to expect. The involvement in the COVE has particularly had positive impacts on the image of VET schools:

“We are now cooperating with each other on an administrative and politically intended level, and it has already upgraded the status of the vocational schools. I believe that vocational schools also benefit from the fact that it is simply recognised that vocational schools can do more than what the general public perceives them to do.”

An obstacle to the development of the Hamburg COVE is the lack of time.

It is sometimes difficult to involve chambers of commerce and crafts in a COVE, because of the potential competition in offering trainings:

“The chamber generally has very strong vested interests and feels constantly threatened [...]. It is a great hindrance.”

3. Tasks performed by the COVE

The central theme of the COVE is to upgrade vocational education and training and attract trainees and students to the companies.

“The vocational schools, which are managed here by the Hamburg Institute for Vocational Education and Training, also have the political task of supporting the dual study programme.”

The BHH offers dual study programmes in a specific format for the first two-two and a half years:

“In the normal dual study programme, you always spend a few months at the company, then a few months back at the university and then it alternates, in an alternating format. That's not the case with us in the first two and a half to three years. The trainees are only at the university in block weeks, which take place during the Hamburg school holidays, and also have so-called seminar afternoons so that there are not too many gaps between the placement process at the university and the examination process that takes place at some point.”

After these two-two and a half year, when the EQF4 level is reached, the dual study programmes at the BHH follow the classic path, meaning that the students spend several weeks and months at the university and at the company at the same time.

Over the course of the project, BHH has developed and implemented five different dual Bachelor's degree programmes, developed a degree programme on energy efficiency, which will be launched after the end of the project, and worked intensively on the development of degree programmes in the green economy in the other COVEs.

4. International cooperation

International cooperation is deeply valued by the Hamburg COVE:

“I think it's always important for the further development of a COVE to look at what advantages and disadvantages the other project partners actually see and how they do it, i.e. simply at this level of exchange.”

The Hamburg COVE has developed close links with other partners of the 3LOE project. A summer school will take place in autumn at the Pomeranian university in Słupsk:

“During this summer school, we can broaden and open up completely different horizons. It is something that represents significant added value for everyone involved, especially for the students and trainees.”

The BHH is also sharing its experience in dual study programmes with Austrian partners and help them connecting vocational and academic education.

The Hamburg COVE wish to continue cooperating with the other COVEs through meetings, for example twice a year during which they could exchange ideas, share successes and difficulties.

5. Long-term continuation and plans for the future

Thanks to its legal framework, the existence of the COVE Hamburg beyond the 3LoE project is guaranteed:

“The structure and form will certainly change a little, but fortunately and thanks to the many good people who have made this happen in the past, the continuation is pretty certain. I think four years is enough to create structures to continue to work on. You can always do it in the same way as with agile project management, you can always improve it, have an iterative approach, but you have a basis.”

Even though four years is considered enough time to establish a base, having a lead partner is essential for the smooth running and sustainability of a COVE:

“In the end it is better to have a lead partner who holds it together a bit [...]. Support from a third party would be an absolute must in order to stabilise the work and maintain the benefits.”

The Hamburg COVE can cover well the core topics needed in the curriculum for the design of their training courses and degree programmes. However, it could be interesting to gain new associated partners on a temporary basis to offer specific compulsory elective subjects:

“Let's take the example of human resources management, leadership and development. There's a relatively big discussion right now, as there is everywhere, about artificial intelligence, to what extent AI can provide support in some way, help, perhaps even make something superfluous. These are completely new developments that you can't yet find in the curriculum in their entirety. They have always been considered, but there is no focus and if you want to develop something like this into a focus, which a university can certainly do, then there is actually still a lack of cooperation partners who can help drive the whole thing forward.”

The efficiency of a OoVE lies in the diversity of its partners:

“You can increase the efficiency of a COVE by cooperating with very different partners.

In the future, the partners of the Hamburg COVE plan to cooperate with research institutes on hot topics and to involve chambers of crafts:

“It is very important for us, because of course they often provide a lot of impetus in terms of content. That is one of the challenges, one of the tasks for the future that we will certainly have to face.”

Further educational courses not related to the degree programmes may be developed in the future by the BHH, even though it is not considered as a priority at the moment:

“It is definitely an issue because, as a university of applied sciences, we are and will be responsible for very application-oriented degree programmes and continuing education programmes. This is something that will certainly develop in the future, but we have not yet made any concrete considerations.”

6. Conclusion

The Hamburg COVE has a unique structure because it is based on legal frameworks. The cooperation with the partners is smooth and well defined. The work performed by the COVE within the 3LoE project has had a positive impact on the VET reputation.

COVE Hamburg is well established regionally but would gain from having new partners, especially chambers of crafts. Cooperation with the chambers is necessary to cover hot topics and include them in the educational offer. This is a challenge, as chambers of crafts sometimes see them as competitors in the training offer and tend to be cautious.

Thanks to the 3LoE project, the Berufliche Hochschule Hamburg increased its international cooperation and has positioned itself abroad as a model for dual study programmes. The challenge is to maintain contact with the other COVEs beyond the project. The support of the lead partner is a decisive factor in ensuring the sustainability of cooperation between COVEs.

For Hamburg COVE, the challenge is not so much to continue to exist, but rather to be innovative to keep up to date and continue to grow.

6.43 LATVIA¹⁵

This report is prepared based on the interviews with the representatives from three CoVE Latvia partners: Liepājas Valsts tehnikums (LVT) (Liepāja State Technical School), Latvijas Amatniecības kamera (LAK) (Latvian Chamber of Crafts), Rīgas Stradiņa Universitāte (RSU) (Riga Stradins University). The fourth interview involved the official from the Vocational and Adult Education Department of the Ministry of Education and Science (MoES). This representative was frequently briefed on the progress of the 3LoE project and was interviewed in their capacity as a national authority overseeing VET education.

Partner structure

LVT: Liepāja State Technical School acts as the lead partner for CoVE Latvia. With a century-long legacy, LVT College is dedicated to vocational education, offering over 20 programs including vocational training, continuing education, and professional development for individuals seeking to enhance their skills and competencies. These programs not only foster personal growth among students but also ensure their alignment

¹⁵ Prepared by Valsts izglītības satura centrs (National Centre for Education), Latvia

with the demands of the job market. LVT collaborates closely with industry partners to provide work-based learning opportunities, enabling students to acquire hands-on experience. Additionally, LVT extends methodological support to other vocational training institutions and promotes ongoing professional development for educators.

LAK: The Latvian Chamber of Crafts is a professional self-governing organisation of craftspeople which promotes the development of crafts trades in Latvia. Its activities, among others, include development and coordination of apprentices' and journeymen's training programs and qualification requirements; placement of apprentices and journeymen with the best master craftsmen for training and instruction; formation of qualifying commissions for the evaluation of journeyman and master craftsman candidates' work; re-training and in-service training, etc.

RSU: Riga Stradins University is a state-funded university which offers various study programs and ensures the realization of scientific projects, providing training of experts in health care and social sciences who work in Latvia and across the world. It is the only university in Latvia which has traditionally been integrated into the healthcare system of the country, and therefore ensures a successful run of the university, which is a precondition for an effective existence of the health care system in Latvia.

VISC: National Centre for Education of the Republic of Latvia is the public institution directly subordinated to the Minister of Education and Science. Its main functions include development of Curricula for general and VET education, development of centralized examinations, coordination of special and inclusive education, approval of textbooks and organization of state language proficiency testing.

COVE structure and cooperation

CoVE LV operates on a national and regional levels and provides education for EQF levels 3 – 6. With regard to CoVE levels LVT and LAK represent 1st and 2nd level and are responsible for vocational education and further education. RSU is responsible for higher education and represents 3rd level. VISC as Ministry of Education and Science agency provides political level support on all levels.

When the 3LoE project was launched the composition of Latvian partners changed as the VET partner dropped out and another VET institution and the Ministry's agency stepped in. Consequently, the CoVE composition deviated from the original concept. Additional efforts were necessary to identify shared areas for collaboration among the participating partners. LVT focuses more on the development of STEM fields, RSU – on International Business and Sustainable Economy, and the Chamber of Crafts – on craftspeople. To ensure more efficient coordination and collaboration additional partners needed to be involved to bring in new perspective to the existing partnership, e.g., Latvian Chamber of Crafts strived to achieve this by creating partnerships with regional VET schools and inviting students and staff to attend courses organized by LAK. LVT worked closely with companies to meet their needs regarding the training of their employees.

To effectively monitor continuous improvement and evaluate the impact and effectiveness of the CoVE activities, several mechanisms have been implemented, e.g., data collection including graduation rates, job placement rates, student and instructor feedback, enrolment numbers, assessment results, and other relevant information; program evaluation, e.g., regular evaluation of the curriculum and teaching methods to ensure they are up-to-date and meet industry standards. This involved input from industry experts and employers; a culture of continuous improvement within the Centre was promoted, e.g., professional development and training for staff.

To coordinate CoVE LV activities, monthly meetings were held with representatives from all organizations to discuss how to support each other and cooperate in the implementation of project tasks as well as possible improvements. Additional value was added by 3LoE partners’ meetings and training activities which provided opportunity for learning, exchange of experience and networking.

Tasks performed by the COVE

Liepaja State Technical School, as the lead partner of the CoVE, coordinated and managed the implementation of activities. LVT confirmed that the programs have been executed according to plan and will be completed by autumn 2024. They assessed the CoVE's operations as satisfactory but noted that the frequent changes in project coordinators at LVT necessitated rescheduling several activities to meet the deadlines.

During the project lifetime, LVT implemented several Initial Vocational Education and Training (IVET) and Continuing Vocational Education and Training (CVET) programs. Additionally, they introduced teacher development programs aimed at enhancing skills and knowledge.

VET programs for students pursuing careers as auto mechanics and building technicians were enriched with essential green skills to meet current environmental demands.

Moreover, for professionals already engaged in electrician and construction worker roles, LVT introduced specialized CVET programs. These initiatives aimed to update and expand their expertise in line with evolving industry standards and technological advancements.

The Latvian Chamber of Crafts activities included the implementation of further education programs, specifically those offered by the 3LoE project. Some of these programs were similar to those LAK already implemented or at least covered the same themes. LAK admits that they have received very positive reviews from the trainees who participated in these programs.

The training provided by LAK included substantial practical work within companies, targeting professions such as carpenters, roof layers, blacksmiths, and chimney sweepers. Participants highly valued the opportunity to learn more about renewable energy, the green economy, and other relevant topics. They considered the practical

training and the shared presentations on training outcomes to be the most interesting parts of the program.

Additionally, LAK successfully implemented programs for qualifying crafts journeymen and crafts masters. However, they expressed regret that these qualifications are not binding within the Latvian legal system.

LAK positively evaluated the autonomy they were given in choosing which programs to implement, finding this freedom essential for tailoring education to meet the specific needs and interests of their trainees. This flexibility allowed LAK to ensure that the programs they offered were relevant and engaging.

Looking ahead, LAK is enthusiastic about implementing several more programs from the 3LoE project. They believe these programs play a crucial role in promoting innovations within the VET sector. By introducing new teaching methodologies, integrating modern technologies, and focusing on contemporary issues such as renewable energy and the green economy, these programs are expected to enhance the quality and relevance of vocational training. LAK anticipates that these innovations will better prepare trainees for the demands of the evolving job market, ultimately contributing to a more skilled and adaptable workforce.

Riga Stradins University focused on the development of a professional bachelor's degree sub-program/module on Green Entrepreneurship and Innovation in close co-operation with other CoVE partners as well as partners from relevant industries.

In the development of new courses, the RSU considered the following five areas: (1) socio-economic situation and labour market needs in Latvia; (2) green entrepreneurship and innovation; (3) job-related training in EU and Latvia; (4) development of a bachelor's degree sub-program at the RSU and cooperation with business; (5) promotion of the program.

In the 3LoE project RSU implemented Green Entrepreneurship and Innovation program for LVT students and teachers as well as for those working in construction and energetic sector.

RSU also conducted research related to the green entrepreneurial developments. They have also published articles in prominent research journals and books.

The Ministry of Education and Science (MoES) is very positive about initiatives aimed at promoting vocational excellence. In Latvia's national key policy planning document, the Education Development Guidelines, vocational excellence has been identified as a top priority in VET. However, MoES has encountered some challenges in implementing this initiative.

One of the primary challenges is the absence of specific types or statuses for institutions participating in this initiative. This has made it difficult for MoES to convey to vocational schools that the focus is not on a particular status but rather on the quality of collaboration among different institutions involved in VET. The goal is to foster an

environment where various VET providers work together to enhance the overall quality and effectiveness of vocational education.

In MoES's understanding, excellence should be inclusive, encouraging everyone to perform to the best of their ability. They emphasize that individual excellence involves each person and student reaching their highest potential. Institutional excellence, on the other hand, is closely linked to innovation.

Innovation is achievable only through close collaboration with universities, research institutions, and industries, preferably those involved in high-tech and state-of-the-art developments. These collaborations are vital as they can significantly contribute to both innovation and vocational excellence. By integrating cutting-edge research and industry practices into VET programs, institutions can ensure that their training remains relevant and forward-thinking.

International co-operation

LVT believes that the 3LoE project served as an excellent foundation for the establishment and operation of CoVEs. It not only provided a strong starting point but also facilitated valuable networking opportunities and the discovery of new partners for future projects. LVT particularly commends the work of the Polish and German CoVEs, considering them exemplary models from which other project partners can learn. According to LVT, these two CoVEs have successfully developed a structure that aligns perfectly with the original CoVE concept, demonstrating best practices in their implementation and operations. They have also considered further cooperation opportunities with some of the project partners, especially those who implement similar VET programs. At present LVT is cooperating in another Erasmus+ project with 3LoE project partner from Austria Institut für angewandte Gewerbeforschung der WIRTSCHAFTSKAMMER – IAGF.

During the project implementation, VISC collaborated with "t2i" – Technology transfer and innovation agency – the partner from CoVE Italy, to develop and submit a joint Erasmus+ project proposal. This proposal focused on the development of digital teaching and training materials aimed at VET and company tutors.

LAK highly values the international cooperation opportunities provided by the 3LoE project. These opportunities have allowed them to discuss common problems and exchange experiences at a chamber level, fostering a collaborative environment among participants from different countries and backgrounds.

LAK believes that the project could have been further enhanced by including more exchange visits. These visits are invaluable as they provide participants with firsthand insights into how vocational education is implemented in other countries.

Through exchange visits, participants can observe different teaching and administrative practices in various international settings. This exposure would allow them to gain a broader understanding of global best practices and innovative approaches in

vocational education. It also fosters cross-cultural learning and collaboration, enabling participants to bring back new ideas and strategies that can be adapted and applied within their own institutions.

LAK is convinced that increased exchange visits would not only enrich the learning experience for participants but also contribute to the overall improvement of vocational education systems by integrating successful elements observed abroad.

LAK foresees using the expertise and resources of relevant project partners to further enrich their programs. They plan to organize guest lectures and masterclasses, drawing on the knowledge and experience of international experts. This will not only enhance the learning experience for their trainees but also provide them with diverse perspectives and advanced skills.

Furthermore, LAK looks forward to adopting the idea of a summer school, which has been successfully implemented by some 3LoE project partners. The summer school concept will offer intensive, hands-on training sessions during the summer months, allowing participants to immerse themselves in specific topics and develop practical skills in a focused setting.

Long-term continuation and plans for the future

LVT, LAK and RSU agree that 3 level CoVE initiative is worth continuing, However, they believe that to fully capitalize on its potential, participating institutions should cultivate greater shared interests. In their opinion, the CoVE should encompass institutions implementing programs for similar qualifications. For example, Riga Technical University would be an excellent CoVE partner in the future by providing third-level education for LVT graduates. This partnership would not only offer a seamless educational progression for students but also foster collaboration with involved companies to boost innovation. By aligning their programs and objectives, these institutions can create a more cohesive and effective network that enhances vocational excellence and meets the evolving needs of the industry.

LVT believes that, without concrete political decisions regarding the future of the Centres of Professional Excellence, there is currently no need to change the Centre's status. The Center will continue implementation of 3LoE VET programs and involve new partners which could bring added value to the CoVE operation.

All CoVE partners unanimously agree that international cooperation with other Centres of Vocational Excellence should be continued. They recognize that such collaboration introduces new ideas and perspectives, which are invaluable in enhancing their current initiatives. By engaging with international CoVEs, they can share best practices, learn from each other's experiences, and drive continuous improvement in their work.

MoES is dedicated to promoting a culture of continuous improvement and excellence within vocational education, understanding that this requires a concerted effort from all stakeholders involved. They are actively encouraging VET institutions to embrace

collaborative approaches and innovative practices, which are essential for achieving vocational excellence and preparing students for the demands of the modern workforce.

MoES is doing as much as it can to promote vocational excellence. However, there is no specific funding allocated for this initiative. Consequently, efforts to promote vocational excellence rely heavily on individual initiative and persuasion rather than being part of a systematically funded policy. This reliance on ad-hoc initiatives poses a significant challenge.

MoES believes that for vocational excellence to be truly effective and sustainable, it needs to be supported by dedicated financial resources. Without earmarked funding, the initiative lacks the stability and structure necessary for long-term success.

MoES consider the 3LoE project to be an excellent pilot of the operation of Centres of Vocational Excellence and support further development and implementation of vocational excellence.

Conclusion

The 3LoE project offered practical experience in operating 3-Level Centres of Vocational Excellence, giving participants a comprehensive understanding of the day-to-day functions and challenges of such centres. Through hands-on involvement, participants gained valuable insights into best practices and innovative approaches to enhance the performance and impact of these centres. This experience not only highlighted areas for improvement but also underscored the importance of collaboration, adaptability, and continuous learning in running successful vocational excellence centres.

An important role in the operation of CoVE plays international cooperation. This collaboration facilitates the exchange and implementation of innovative solutions and the adoption of best practices from partners. For example, CoVE benefits from already piloted VET programs developed by its international partners. This exchange not only enhances the quality and effectiveness of CoVE's initiatives but also ensures that they remain at the forefront of educational advancements and industry standards.

The Ministry of Education and Science believes that dedicated financial resources are crucial for the true effectiveness and sustainability of vocational excellence initiatives. Without earmarked funding, these initiatives lack the stability and structured support necessary for long-term success. Securing consistent and targeted financial backing will ensure that vocational excellence centres can innovate, and continuously improve, ultimately benefiting students, industries, and the broader economy.

6.44 LITHUANIA¹⁶

¹⁶ Prepared by Valsts izglītības satura centrs (National Centre for Education), Latvia

This report is prepared based on the interviews with the representatives from three CoVE Lithuania partners: Business and Hospitality Vocational Career Centre (Verslo ir svetingumo profesinės karjeros centras) – VESK; Panevezys Chamber of Commerce, Industry and Crafts (Panevėžio prekybos, pramonės ir amatų rūmai) – PCCIC; Panevezys University of Applied Sciences (Panevėžio kolegija – PANKO and associated partner – Lithuanian Hotels and Restaurants Association (Lietuvos viešbučių ir restoranų asociacija) – LHRA.

Partner structure

The Centre of Vocational Excellence Lithuania is established as a cooperative network consisting of 3 different institutions: VESK, PCCIC, and PANKO.

VESK is the coordinator of CoVE Lithuania and one of the largest vocational training centres in Lithuania, providing education, initial and continuing training, non-formal education and vocational rehabilitation services, taking into account the ever-changing situation on the labour market and the expectations of society. The Centre has established close networking links with employers and local industry, which ensure that the courses prepare students for the careers they intend to pursue.

PCCIC is another CoVE partner which acts as a cooperating body for vocational education at EQF Levels 3 – 6, carrying out vocational trainings and further trainings, examinations, consultations, and in particular representing SMEs, advising and integrating them as training partners for dual education.

PANKO – a higher education organization which implements dual Bachelor programmes and innovation projects for SMEs at EQF Level 6 is the third CoVE LT partner. They also participate in the development of curricula and new learning methods, provide lecturers, trainings for teachers and managers of VET schools, etc.

COVE structure and cooperation

CoVE LT is active in all three levels – IVET, CVET and HE and operates in the regions of Vilnius and Panevėžys, where it builds skills ecosystems conducive to innovation, regional development and social inclusion, as well as interacts with centres in other countries through international cooperation networks.

The CoVE LT has established a well-defined governance structure that outlines roles, responsibilities, and decision-making processes for all stakeholders involved in the CoVE, which ensures smooth coordination. The cooperation agreement has been signed by all three partner organizations.

All three CoVE LT partners agree that the chosen structure of CoVE is perfectly suited for implementing the planned project tasks and for ensuring the continued operation of the Centre after the project concludes. They see significant added value in their prior collaborative experience, as all three institutions have previously worked together on other projects. In working on this project, they have discovered new areas of mutual collaboration that they had not previously considered. This established working

relationship is the primary reason why the coordination of project tasks proceeded smoothly and adhered to the timeline. PCCIC believes that the 3LoE project has contributed to their growth as institutions, as education providers, and as individuals.

To maintain progress and ensure that everyone remained on the same page, regular coordination meetings were organized. These meetings played a crucial role in facilitating communication, addressing any issues promptly, and making necessary adjustments to keep the project on track. The familiarity and mutual understanding among the partners fostered a productive environment, where tasks were efficiently managed, and project goals were consistently met. PCCIC mentioned that during the project, the CoVE lead partner was always there to help whenever needed. This dependable support helped quickly solve any problems, making the project run more smoothly and encouraging teamwork.

Initially, the primary issue that hindered cooperation between VESK and PANKO was their representation of distinct sectors, which made it challenging to identify common points of interest and interaction. VESK was oriented towards the HoReCa (Hotel, Restaurant, and Catering) and health sectors, while PANKO focused on business and technologies. This sectoral divergence created a significant barrier to collaboration.

However, this challenge was effectively addressed by identifying alternative points of common interest. For instance, PANKO provided Continuing Professional Development courses for VESK teachers, which not only enhanced the professional skills of the VESK staff but also fostered a collaborative relationship between the two institutions. Additionally, PANKO offered methodological devices that further supported VESK's educational initiatives. By leveraging these shared interests and resources, VESK and PANKO were able to establish a productive and cooperative partnership despite their initial sectoral differences.

The need for additional partners was discussed among all three CoVE partners, and the decision was to engage new collaborators as needed. For example, in program implementation, PCCIC worked also with two other VET schools outside the project because they were geographically closer. Due to sectoral differences among partners, VESK required additional partners to cover all necessary tasks comprehensively. To address this, CoVE LT initiated a collaboration with the Lithuanian Hotels and Restaurants Association. As a result, the LHRA became an associated partner, contributing their expertise and resources to the project.

LHRA rates CoVE as a positive initiative and considers that it brings innovation not only to the region but country wide and provides the potential for changing economic conditions and supplying the skilled work force. It also builds the bridge between the world of work and vocational school.

CoVE LT enrolls students in dual education programs, which necessitates a close partnership with various companies to ensure practical, hands-on learning experiences. To facilitate this, CoVE LT collaborated with companies they had previously worked with, leveraging established relationships to provide consistent and reliable

opportunities for their students. Additionally, CoVE actively sought out and engaged new companies, expanding their network and creating a broader range of internship and training opportunities to benefit their students.

Asked about negative aspects, partners find it challenging to pinpoint specific issues directly stemming from the collaboration. However, PANKO identifies that many of the challenges they faced were closely linked to the ongoing restructuring of the education sector in Lithuania. This restructuring has introduced a significant degree of uncertainty and continuous change, which sometimes restricts the scope and opportunities for long-term projects.

Due to these reforms, there is often a lack of clarity regarding regulations, policies, and future directions within the education sector. This unpredictability can make it challenging to plan and execute long-term initiatives effectively, as project parameters may need to be frequently adjusted in response to the evolving educational landscape. The constant changes can lead to disruptions in project timelines, create obstacles in resource allocation, and necessitate ongoing revisions to project strategies. Consequently, the partners must remain adaptable and resilient, continually navigating these challenges to achieve their project objectives.

Tasks performed by the COVE

Activities of Lithuanian CoVE cover the following sectors: engineering technologies, construction, utilities, tourism, food industry, health care and social assistance, hospitality, beauty services, IT, education, etc. The focus areas are green skills, entrepreneurship, emerging technologies, digital skills and dual education.

CoVE LT considers introduction of dual apprenticeship training in VESK and dual bachelor programs in PANKO a success. These programs were piloted and turned out to work very well so the piloted parts were introduced in other ongoing programs and students in certain study blocks will do their apprenticeship in a company. PCCIC role in this activity was to assist VESK and PANKO in finding suitable companies for the students. At the end of the training VESK also carried out their inner evaluation and over 90% of students evaluated it as a very good program and positive feedback was received from employers, too.

In addition to this, VESK has introduced Continuing Professional Development programs for all teachers working at the school. These programs are crucial for maintaining and enhancing the teachers' professional skills and knowledge. Some of the CPD programs are delivered by colleagues from PANKO, while others are conducted by various external providers. The CPD training sessions are held regularly and are compulsory for all teachers, ensuring that the faculty remains up to date with the latest educational methodologies and industry developments. This commitment to ongoing professional development underscores VESK's dedication to providing high-quality education through a well-trained and knowledgeable teaching staff.

Partners are of the opinion that overall, the implementation of the CoVE tasks proceeded smoothly, albeit with some additional effort required when collaborating with educational authorities to formalize specific VET programs. Recognizing the potential challenges in navigating formal education frameworks, VESK opted for a non-formal education approach. This decision was driven by the desire for increased flexibility and autonomy in program development and delivery. As a result, VESK perceives the execution of training programs as less effective, primarily attributing this to their non-formal educational nature.

Although CoVE LT carried out numerous activities in cooperation, there were also activities implemented by one or two of the CoVE partners, tailored to their specific fields of operation. This allowed for a more focused and specialized approach, ensuring that each partner could leverage their unique expertise and resources effectively. For instance, VESK dedicated significant time and resources to advancing the initial 3LoE green concept, elevating it to a new level. They started with the development of a comprehensive module on sustainability, which has been integrated as a mandatory component in all their training programs. This ensured that every student received essential education on sustainable practices, preparing them to contribute to environmentally responsible sectors.

Then VESK continued with conducting short training sessions to help everyone understand the principles and importance of a green economy. Yet, there was a recognition of the necessity for deeper and more profound and comprehensive changes in the day-to-day operations and lifestyle at VESK to fully embrace these principles.

To this end, VESK began implementing a short supply chain system, emphasizing local sourcing and sustainability. One of the most notable changes was the initiation of growing their own vegetables on campus. In addition to its focus on local sourcing, VESK also prioritizes effective waste management practices. To address this concern, VESK has implemented innovative smart composting units on its territory. These units are specifically designed to handle the waste generated from the culinary laboratories. Instead of discarding organic waste, such as vegetable peels and food scraps, into traditional waste bins, these materials are diverted to the smart composting units.

Recently, VESK achieved certification with ISO 14001, a globally recognized standard for environmental management systems. This certification serves as a testament to VESK's commitment to implementing effective environmental practices and reducing its ecological footprint. VESK considers that this achievement is not merely a recent development; rather, it is the culmination of a journey that began four years ago with the initiation of the 3LoE project.

PCCIC main task was implementation of continuous training programs tailored for various companies. While the training programs developed by the 3LoE project served as the foundation, PCCIC customized these programs to meet the specific needs of each company and to align with the local context. Recognizing that companies were not interested in programs spanning several months, PCCIC made significant adjustments

by shortening the duration of these training sessions. This approach ensured that the training was both relevant and manageable for the companies, enhancing their engagement and maximizing the impact of the training. By doing so, PCCIC was able to provide valuable and practical learning experiences that were better suited to the operational realities and time constraints of the businesses they served.

PCCIC also played an important role in supporting the implementation of dual apprenticeship training by acting as a mediator between IVET and HE institutions and companies. Their responsibilities included explaining to companies the significant benefits of prolonged work practice for apprentices, such as improved skill acquisition and job readiness. PCCIC worked to convince companies to engage in the dual apprenticeship model by highlighting how it could meet their needs for skilled labour, reduce recruitment costs, and ensure a workforce that is well-trained and aligned with their specific operational practices.

PANKO contributed to lifelong learning by offering continuous training and upskilling opportunities tailored to the specific needs of various industries. These training programs were designed to enhance the skills of the workforce, contributing significantly to regional development and improving employability. By aligning their offerings with industry demands, PANKO ensured that individuals can continuously develop their professional skills and adapt to changing market conditions.

Additionally, PANKO actively promoted industry-school collaboration through various initiatives such as specialized training programs, shared resources, and apprenticeship opportunities. One notable achievement is the renewal and launch of the "Electrical and Automation Equipment" degree program in 2023. This program, along with an upgraded Business Management program, was implemented as part of the project framework. Furthermore, PANKO has introduced and integrated new study modules focusing on critical and emerging areas such as "Fundamentals of the Circular Economy," "Waste Management Technologies," "Governance and Technologies for the Circular Economy," and "Sustainable Economic Management." These modules have already been completed by over 60 students.

PANKO also emphasized the promotion of sustainable business start-ups, encouraging innovation and entrepreneurship aligned with environmental and social sustainability goals. To better meet the needs of industries, PANKO has extended the duration of practical training components within their programs. This extension has been well received by industry partners, as it allows students to gain more in-depth, hands-on experience, thereby enhancing their readiness for the workforce.

As PANKO is engaged in providing vocational training, they place a high value on collaboration with the Chamber. This partnership has yielded significant benefits, enabling the university to extend the duration of practical training and integrate numerous practical tasks directly into the course curriculum. By working closely with Chamber, University ensures that their training programs align closely with the needs and expectations of the industries they serve.

Another important aspect is the continuity of studies facilitated by PANKO. Graduates of the vocational school have the opportunity to transition into higher university courses, ultimately earning a higher education diploma. This pathway provides a clear and accessible route for individuals to further their education and expand their career prospects.

The Lithuanian Hotels and Restaurants Association as an associated partner, also made significant contributions to CoVE LT, particularly in curriculum development for VESK students. Leveraging their deep industry insights and expertise, LHRA helped to develop and update the vocational curriculum, ensuring it met current industry standards and anticipated future needs. They provided valuable data and analysis on emerging trends, technologies, and skills gaps within the industry, which guided CoVE LT to concentrate on the most relevant and pressing areas for vocational training.

Additionally, LHRA played a pivotal role in facilitating connections between VESK and various businesses, enhancing opportunities for apprenticeships and job placements for students.

Moreover, LHRA collaborated closely with VESK to organize several sessions and short training programs where industry professionals were invited to share their knowledge and experiences with students. These sessions provided students with first-hand insights into the industry, exposing them to real-world scenarios and best practices. This collaboration not only enriched the educational experience but also helped to better prepare students for successful careers in the sector.

International co-operation

One of the 3LoE project tasks is to foster international cooperation, mutual learning, and the exchange of best practices among educational institutions and industry partners. This initiative aims to create a collaborative environment where partners can share knowledge, experiences, and innovative strategies to enhance vocational education and training. CoVE LT partners highly valued the peer-learning opportunities and train-the-trainers' workshops.

As the project evolved, it provided opportunities to establish contacts with new partners from other countries and discover common grounds of interest, which had been challenging within the framework of CoVE LT due to the diverse sectors represented by the partners. CoVE LT established good working collaboration with 3LoE project partner from Austria Institut für angewandte Gewerbeforschung der WIRTSCHAFTS-KAMMER - IAGF. Austrian colleagues acted as guest lecturers and provided master classes for those involved in cooking programs. These master classes offered an invaluable opportunity to students and teachers learn from experts, gain new culinary skills, and expand their knowledge in their chosen field. This collaboration not only enhanced the students' educational experience but also strengthened the partnership between the institutions. Both IAGF and VESK are looking forward to the continuation of this cooperation. They recognize the significant benefits that have arisen from their

collaborative efforts, including enhanced educational opportunities, shared expertise, and strengthened institutional relationships.

CoVE LT has also started discussing expanded opportunities for cooperation with the project partner from Pomeranian University in Słupsk, Poland.

Long-term continuation and plans for the future

CoVE LT partners agree that 3LoE project was a good opportunity to try out the practical implementation and operation of Centres of Vocational Excellence. They also consider that the well started and piloted initiative of 3 Level Centres of Vocational Excellence should be sustained and continued. However, they acknowledge that significant changes need to be implemented to continue running the CoVE in future.

To ensure the continuity of IVET, CVET, and HE program implementation, it is crucial to achieve alignment across various sectors of the economy. Currently, the programs offered by CoVE partners span different economic sectors, which leads to a lack of cohesion. Establishing a unified approach will facilitate a seamless transition between different levels of vocational and higher education, creating a more integrated and efficient educational system that better meets the needs of both students and the labor market.

Another reason to seek additional CoVE partners is to sustain the implementation of dual vocational training in both IVET and HE. While PCCIC helps schools in finding companies for this purpose, involving more associations in CoVE will better ensure the availability of necessary work placement opportunities for students.

CoVE LT partners are sure that the existing three level CoVE structure should be sustained, and no other form is necessary as it has proven to work well.

Establishing and maintaining a CoVE requires significant financial and human resources. It will be necessary to look for funding mechanisms after the 3LoE project ends.

Conclusion

The 3LoE project provided an opportunity to put into practice the operation of Centers of Vocational Excellence across various educational tiers, including initial vocational education and training, continuing vocational education and training, and higher education. This practical implementation not only enhanced the partners' understanding of the operational aspects of CoVEs but also provided valuable insights into how to tailor CoVEs to meet the diverse needs of learners at different stages of their education.

To successfully establish and operate a Center of Vocational Excellence, securing policy-level support is paramount. Without the active involvement and endorsement of education authorities at the regional or national level, the initiative is likely to remain localized and face significant challenges in terms of sustainability and scalability. Policy-level support provides legitimacy and institutional backing to the CoVE, signaling

its importance within the broader education framework and ensuring alignment with educational goals and priorities. Moreover, education authorities can provide crucial resources, funding, and regulatory guidance necessary for the effective functioning of the CoVE. Additionally, policy-level support can facilitate collaboration and partnership opportunities with other educational institutions, industry stakeholders, and government agencies, enhancing the CoVE's reach, impact, and relevance.

6.45 ITALY¹⁷

Partner structure

Three partners have founded CoVE Italy. The coordinator is Emilio Sereni, based in Rome, a public agricultural school at the first level of the CoVE (NQF 3 and NQF4), which reports directly to the Ministry of Education Management.

Also based in Rome is the SFC, a training institution at the second level of the CoVE (NQF5 and Continuous VET), as well as a labor market actor focusing on manufacturing such as wood & furniture, chemicals, and every economic sector. SFC is the national vocational provider of Confindustria.

The third partner, Trasferimento Tecnologico e Innovazione Scarl, or t2i for short, is based in the Italian region of Veneto. As a technical agency of the Chamber of Commerce of the Veneto region, it supports companies - primarily in the private sector - in developing innovations. Its main objectives are training activities, start-up activities, and incubators.

COVE structure and cooperation

“I see the free choice and form of the cooperation model for this CoVE as an advantage because it makes it possible to act nationwide.”

Based on the three very active and multifaceted partners mentioned above, CoVE Italy was created, which now has a large network and many other associated partners to commonly develop innovative educational measures at all three center levels in the field of the green economy. CoVE Italy is going into depth and driving forward its activities in the field of sustainable development and the circular economy, for example through cooperation with the newly acquired Associated Partner UniSMART: UniSMART is the foundation of the University of Padua, which was established to promote technology transfer and postgraduate education.

Through its Unit Academy, it supports the promotion and management of the University of Padua's Master's degree programs and courses and the “Lifelong Learning” training courses, providing all the necessary technical and administrative support. In article 1, paragraph 2 of the Statute, the University of Padua undertakes to “promote the

¹⁷ Prepared by Institut für angewandte Gewerbeforschung der Wirtschaftskammer Österreich

development of a culture based on universal values such as human rights, peace, environmental protection, and international solidarity”, with environmental issues playing a central role and being constitutive of its activities.

The University of Padua, reference body of the Foundation under art. The University of Padua, which acts as the Foundation's reference body by Art. 1.2 of the Statute, has also adopted its own “Charter of Sustainability Commitments”, divided into five lines of action in the various areas in which environmental sustainability is expressed, and participates annually in the “Festival for Sustainable Development” promoted by the Italian Alliance for Sustainable Development (ASviS) for the joint development of a cultural and economic background that enables the implementation of the United Nations 2030 Agenda and the achievement of the 17 Sustainable Development Goals at national level. - Possible objectives of cooperation with the CoVE include:

- Creation of dual study programs.
- Ensuring the exchange of information and experience, written and electronic knowledge, and technology transfer for SMEs in the form of meetings, information and training courses, group coaching, etc;

Promoting innovation for SMEs and carrying out research and development activities in and with SMEs.

Another partner is ESEV-CPT, an institution jointly managed by the University of Construction and the trade unions of construction workers in the province of Verona. This - VERONESIAN CONSTRUCTION TRAINING SCHOOL AND THE TERRITORIAL JOINT COMMITTEE FOR ACCIDENT PREVENTION, HYGIENE AND WORK ENVIRONMENT OF THE PROVINCE OF VERONA, or ESEV for short - aims to provide initial training initiatives for young people entering the sector, young people entering the sector, as well as to promote, organize and implement initiatives for further training, qualifications, retraining, specialization or updating for “their” workers, administrative staff, technicians and managers. A further interface with CoVE Italy with the ESEV-CPT can be created at EQF level 3: ESEV manages and coordinates the three-year qualification period for construction workers at this level.

"CoVE Italy has enabled us to work together with different chambers. We hope that this will give us greater strength, assertiveness and reach - in other words, to be able to put out feelers even more for new partners and expanded networks."

The Sant'Anna School of Advanced Studies (SSSA), a public university with a focus on applied sciences, including economics, law, political science, agricultural sciences, medicine, and engineering, is also contributing its expertise in the field of sustainability and the green economy. - SSSA's departments include the Interdisciplinary Research Center for Sustainability and Climate, a transdisciplinary research area that operates in the social and experimental sciences. The Center promotes research, teaching, and

the development of innovative solutions to issues of sustainability and the urgent challenge of climate change. The SuM - Sustainability Management Laboratory cooperates with the SFC as part of the 3LoE project. The Sustainability Management Laboratory (SuM Lab) combines business and policy knowledge with the principles of sustainability through scientific research and empirical studies in the following areas: Circular Economy and Natural Capital (CENC); Energy and Resource Efficiency (ERE); Life Cycle Thinking (LCT); Corporate Social Responsibility and Resilient Communities (CSR); Environmental Management and Industrial Symbiosis (EMIS); Climate Change and Decarbonization (CLIMA).

Then, there is CIS, the company of the Reggio Emilia business association (Unindustria Reggio Emilia) that has been designing and developing business management services for almost 40 years. The CIS Business School delivers different paths related to the main business areas (General Management, Innovation, HR, Marketing and Sales, Operation, Purchasing, Sustainability and ESG, Strategic Planning). Their projects are designed and implemented for the growth and development of people's skills, to keep pace with a constantly evolving global market.

ANCE is a business association representing Italian companies of all sizes operating in the construction industry. Their objective is to promote policies that combine the entrepreneurial skills of the construction sector with the interests and needs of civil society, aiming at Economic, Social, and Labour Growth; Energy-Environmental Sustainability; and Country well-being.

ANCE fulfills the task of representing the industry in institutional bodies, protecting its interests, and cooperating with the government, parliament, national institutions, and other social partners.

ANCE's objective is to contribute to the economic growth of the sector, to employment, and to the development of an advanced system that allows the country to face the increasingly demanding challenges of the global market.

The Test Training for Trainers in SMEs could successfully be carried out with Fondazione ITS Meccatronico del Lazio. The Foundation runs the Istituto Tecnico Superiore della Meccatronica del Lazio, which awards the Mechatronics Technician qualification recognized as an EQF 5 qualification.

The foundation represents the dual model for mechatronics in Italy and aims to integrate and improve the technical-practical preparation of new graduates, through in-depth theoretical and technical studies and, above all, by carrying out numerous hours of company internships, to acquire and/or improve skills in the field.

The numerous presences of experts from the world of work contributes to testifying the level of in-depth and up-to-date training content, also through the testimonies of company operators and case studies, thus making available the experiential, technical, and specialized training capacity of companies.

The Department of Agricultural and Forestry Sciences (DAFNE) at the University of Tuscia is a renowned center of excellence for both teaching and research, with a strong emphasis on sustainability, climate adaptation, and food safety. Equipped with state-of-the-art facilities and deeply rooted in the regional context, DAFNE spearheads cutting-edge projects such as "SAFE_Med" and "D.I.Ver.So." The department holds a prominent international standing and plays a significant role in contributing to Italy's National Recovery and Resilience Plan (PNRR) and various European Union initiatives. Its commitment to innovation and education positions DAFNE as a leader in addressing global agricultural challenges.

“As associate partners, we contribute our extensive expertise in advanced agricultural research and innovation, offering insights into the latest trends and technologies shaping the sector. Our role is to ensure that the CoVE remains at the cutting edge of agricultural education, equipping students with the knowledge and skills needed to thrive in a competitive workplace. The cooperation has been highly productive, marked by dynamic exchanges of ideas and effective collaboration on various projects. We view our partnership as a resounding success, with mutual benefits that enhance both our research endeavors and the educational outcomes of the CoVE.”

DAFNE actively collaborates with CoVE Italy on educational initiatives aimed at familiarizing students with the latest innovations and, most importantly, precision agriculture and sustainable farming practices. A collaborative approach has proven successful in preparing the next generation of agricultural professionals.

“The success of these initiatives is reflected in the positive feedback from students, who have not only gained valuable knowledge but are also very satisfied with the quality and relevance of the courses.”

Latuaideadimpresa® is the business game that takes students to create business projects and become real startupper. Conceived in 2010 by Noisiamofuturo® and promoted together with Sistemi Formativi Confindustria, partner Umana. - All students are offered training modules and the publication of their projects (business plan + video) on the latuaideadimpresa.it platform where Italian entrepreneurs view and vote on the students' work. The best projects, winners of the territorial stages, compete at Festivaldegiovani® where a jury of entrepreneurs proclaims the national winner and awards special prizes.

Tasks performed by the COVE (tasks of the COVE)

All the objectives set could be solved and implemented within the CoVE” - and this at all 3 levels of the 3LoE project from the first center level within WP3 to the third center level “Higher Education” within WP5, such as the implementation of an ‘Advanced course at EQF level 4 for skills and innovation in the agriculture/agro-food industry’ or the ‘Continuing vocational training’ ‘Animal Welfare for a Better Future’, ‘Techniques of Organic Farming’, ‘Use of drones in Agriculture’ or ‘Vertical Farming’.

“The main advantages were the possibility to benefit from excellent training programs on sustainability issues, which were then adapted to the needs of the local context in which we operate.”

Further Training and Test training in the area of sustainability were carried out by the CoVE within the cooperation of its Associated Partners such as in “Fundamentals of the Circular Economy”, “Cradle to Cradle in SMEs”, “Enterprise and Entrepreneurship in Green Economy”, “Energy Service Manager” or in “Preparation and Management of SMEs for Work in Green Economy” and much more.

In addition to many other measures (easy to find in the final report), the following were successfully implemented as part of WP4: Training I for SMEs: Energy Efficiency and Renewable Energies as well as of two EQF5 courses “GPP – Green Public Procurement” and “Industrial Symbiosis” as well as a Lean Management in the Building Sector.

Manageable R&D Projects for SMEs were as well conducted as modules for higher education tested, i. e. “Management & technologies of the circular economy” or “Management of sustainable economic activity”.

Examples of successful dissemination by CoVE Italy include the presentation of the 3LoE project at the “Job Orienta Verona”, the “Didacta Meetings Florence” and at an event with the Minister of Education.

Now that the training measures have been successfully implemented, the company is also considering making them available to other CoVEs:

“For some activities that came up for the 3LoE project, we can propose them to other CoVE, e.g. all training courses of the 3LoE addressed to the building sector can be promoted to the 3LoE project.”

International cooperation

Exchange, networking, finding a common language, and going beyond one's boundaries - these were the main interests of CoVE Italy that should and could be realized within the framework of this project!

CoVE Italy initially operated primarily on a regional basis, but as part of the project, it was also able to expand its innovative measures nationally in Italy and maintain an international exchange with the project partners.

“Among the project's outcomes, in addition to a strengthening of internationalization, there was also a fruitful synergy between national funding sources for training accessed client companies and the 3LoE project, which amplified the results and gave the implementation of the training programs an international reputation and ultimately greater solidity and credibility.”

“It was of great interest to us that we had the opportunity to join a large network of transnational partners, both operationally and as a network, which gave us a broad

exchange of experience and the opportunity to implement good practices for our own company at the end of the project.”

“... it was a valuable opportunity to exchange views with other training providers on strategic issues and to consolidate an international positioning in the field of continuing education.”

“Among the many things we learned, for example, we learned from our colleagues from Hamburg, the German colleagues, a methodology we tested on Veneto territory, it’s called Kain Method, a methodology for training that in short, to put it simply, it allows getting inside organizations in general, so we experienced it both at the level of students, but above all with businesses.”

The work continues and the successful exchange is to be continued, both nationally and internationally A national CoVE hub is already being considered.

Long-term continuation and plans for the future

The desire for a continuation - even after the end of the project - was clearly expressed several times:

“In the long term, the cooperation is to be continued and also deepened.”

“The inclusion of new partners is also conceivable. For example, if the University of Milan is interested in collaborating, it could become part of CoVE Italy.”

“To ensure the continued relevance and effectiveness of vocational education, it is essential that these programs remain flexible and responsive to the fast-paced changes in the agricultural sector. We suggest a greater focus on interdisciplinary approaches combining traditional agricultural knowledge with emerging fields such as digital agriculture, biotechnology, and environmental management. Additionally, strengthening partnerships with international institutions could provide valuable perspectives and enhance the global competitiveness of our vocational education system. For the CoVE in particular, ongoing engagement with industry stakeholders and the incorporation of their feedback into curriculum development will be critical for maintaining its leading role in vocational training.”

The future success of the CoVE will also be linked to a targeted focus on specific topics:

“Looking ahead, the future development of the CoVE should prioritize areas with the highest growth potential, particularly in the integration of innovative technologies and artificial intelligence (AI) in agriculture. These areas represent the frontier of agricultural advancement and will be crucial in addressing future challenges such as food security, climate change, and resource management. Ensuring that the CoVE remains a leader in these domains will require continuous investment in cutting-edge research and the development of specialized training programs.”

“Another advantage is that this project not only established these CoVEs at the local level but that there was and hopefully will continue to be the opportunity to work at European level.”

“So the challenge was to find common languages in a rather complex context because goals are easier to train than languages, but also specific activities to continue.”

“Another advantage is that this project not only established these CoVEs at the local level but that there was and hopefully will continue to be the opportunity to work at the European level.”

“So the challenge was to find common languages in a rather complex context because goals are easier to train than languages, but also specific activities to continue.”

“So it’s a challenge that we were able to overcome and that we hope we can continue to overcome in the future.”

Conclusion (and Recommendation)

In principle, CoVE Italy can be seen as a great success on several levels, e.g. in terms of the goals achieved, the input on the region, the expansion of cooperation, and the implementation of various training measures from the regional to the national level, as well as a successful international exchange and knowledge transfer, keyword Kain method to name a concrete example.

“In summary, thanks to this project, we can offer companies targeted products that have been tested and validated at European level.”

“The establishment of a Center of Vocational Excellence (CoVE) in our region is a significant step forward, presenting numerous opportunities for regional growth and development. The CoVE enhances the quality of vocational training, ensuring that young professionals are well-prepared to become key contributors to the agricultural sector. Among the positive aspects, we particularly appreciate the emphasis on innovation and the practical experience of hands-on training courses provided to students. This initiative helps bridge the gap between academic knowledge and industry requirements.”

“The current cooperation model is highly effective, fostering a collaborative environment that benefits all parties involved. The synergy between academic institutions, industry partners, and vocational training centers has created a robust framework for innovation and education. We see no need to alter this model; instead, we recommend building on its strengths, particularly by expanding the networking activities to further enhance its effectiveness.”

The relatively loose structure of a “Cooperation Agreement” was seen as an advantage, as this system allows a high degree of flexibility, as well as the ability to remain open to new partners and projects and at the same time to continue successful, newly acquired collaborations.

6.46 POLAND

All interviews were recorded (after the interviewees had given their consent) and transcribed using a free Word transcription tool (AI). The voice recordings are available. The results of the interviews can be summarized as follows.

Partner structure

The Polish partner structure consists of the Mechanical and Logistic Schools Complex named after engineer Tadeusz Tański, a VET school (Zespół Szkół Mechanicznych i Logistycznych im. inż. Tadeusza Tańskiego w Słupsku), the Pomeranian University in Słupsk and the West Pomeranian Chamber of Crafts and Entrepreneurship in Szczecin. It is worth noting that the Pomeranian University in Słupsk obtained its university status on 1.06.2023 (before this it was listed as an Academy).

The Polish CoVE is coordinated by the VET school, the Mechanical and Logistic Schools Complex.

Cooperation institutions:

- Association of Polish Mechanical Engineers
- Vocational School in w Kamiennym Moście (level 1)
- Vocational School in Maszew (level 1)
- Board of Education in West Pomerania
- City of Słupsk
- Markos - producer of composite materials including rescue, life and pleasure boats, partner in dual Bachelor Degree Program
- Chamber of Commerce in Słupsk
- Słupsk Municipal Services Office
- Słupsk Water and Sewage Treatment Facilities
- Słupsk Chamber of Industry and Trade

COVE structure and cooperation

Establishing a COVE and the cooperation within the Polish COVE is positively assessed by the partners.

(CoVes are ..)Perfect for vocational education, I cannot imagine a vocational school without cooperation with employers because it is our statutory obligation to educate for the needs of the labor market and respond to their needs and cooperate with the university. This is a logical consequence of our work, and we educate at the secondary school level in cooperation with employers and the university, because they also support us and later our students can continue their education at the University or other universities in general because, as we discussed, this system could be introduced throughout Poland that every school is obliged to cooperate with universities in this way.

The operation of the CoVe opened up a communication gateway between schools, SMES and higher education.

What I really liked was that in the end entrepreneurs started talking to science.

The CoVE allowed the VET school and the University to develop permeability (the eco-logistics technical secondary school program and the Green Logistics university study program)

The structure allowed the VET schools and the Chamber to develop and conduct pedagogical trainings, which ended in official certifications. The demand was so high that two editions were organized.

What has changed for the better is that enterprises and entrepreneurs have finally understood that it is up to them to educate future employees.

Apart from project activities, practical benefits, the CoVE partners had the opportunity to participate in a CoVE structure, which is a novel concept in Poland.

A lot of effort was dedicated to understanding how dual studies should look like in Poland on the university level (legal requirements, employee / employer / university contracts etc.). The University of Słupsk had to reach out to the Ministry of Education and to one of few higher education institutions in Poland that focus on dual higher education, in order to obtain an overview as it is not openly available on a national level.

CoVE empowerment was a phrase that is worth mentioning; certain institutions (e.g. universities) are more independent in their decision-making process while other institutions (vocational schools) are dependent on the Municipality/City council and need to go through a long decision-making process which may impede CoVE durability (commercial activities).

One of the bottlenecks that was mentioned was the rigidity of study programs. Higher education study requirements in Poland may be strenuous for dual study students, an example of this is a required number of hours of Physical Education classes that must be included in all study programs. More flexibility / modular programs would be beneficial for dual programs.

Overall, the CoVE cooperation is considered to have been beneficial with regard to institutional cooperation, cooperation, mutual effort and organization set-up.

This is what should happen, i.e. organizations associating enterprises, yes, business, university, vocational school, chamber of crafts, in fact, what we have here (note: CoVE) is very similar, all of these pieces complement each other beautifully.

Tasks performed by the COVE

In general, I assess the project very positively, especially when it comes to improving employee qualifications and developing training opportunities in our companies.

Some of the tasks performed by the CoVe include:

- Dual bachelor’s degree Studies – 7 employees simultaneously work at Markos and study at the University of Słupsk. This novel approach is one of very few examples of a dual bachelor’s degree Program being carried out in Poland
- Pedagogical courses for SME employees, the demand was so high that a second edition was organized. The VET school trained the participants, and the Chamber provided certifications (only Chambers in Poland are allowed to provide certifications for this type of course). 20 participants in the first training and at the time of the interview there were 20 more registered for the second edition. This was a novel and innovative approach as 2 CoVE partners coordinated and funded this from the project budget, trained participants and provided legally recognized certificates.
- In collaboration with the Pomeranian University of Słupsk, an eco-logistics vocational training specialization was introduced at the VET school (currently 3rd year students). After the 5th year, graduates may attend the University of Słupsk, and continue to study Green Logistics. Certain modules from the technical secondary school training will be credited towards the studies. Students will also be able to study two specializations: Green Logistics and Management, this will be possible since multiple modules from the vocational educational programme will have been credited toward the Green Logistics studies, which will give the students time to apply themselves to another specialization.
- A Circular Economy training was carried out in the logistics specializations at the VET school, this module has now been fully adapted into the school’s curriculum.
- Continuous training in the area of operation of electrical devices and installations
- Markos (a boat manufacturing company) is preparing a concept on factory school facilities - they will create a facility within their company which will be a school facility for young people, they will have a classes on site.
- A new specialization called Eco logistics was introduced as part of the vocational schools offer.
- A new class in boat building has been initiated at the VET school. This school is tailored toward educating specialists in boat/yacht making and plastics used for manufacturing, this is in cooperation with the company Markos.
- Establishing in house SME trainers at Markos.
- specialized training in areas such as renewable energy, specifically in photovoltaics and heat pump systems (continuing education).

We need to get closer and closer in terms of the distance between teaching at the vocational level, i.e. the mechanics school (note: Vocational School) through professional training at the higher level, and the introduction of graduates to the real challenges they face today.

[International co-operation](#)

International exchange was stated to be a great opportunity to look at how other international models of collaboration function.

Additional elements that could be beneficial within the project framework and within international CoVE collaboration: student and teacher exchange (short exchanges) and employee exchange i.e. getting to know best practices in various areas of a company in a different country (manufacturing, HR, project management etc.).

Projects like this aim to organize the transfer of knowledge and skills between different countries. It's different in every country, and it's the same in our partner countries. We're trying to put it together.

Long-term continuation and plans for the future

We are developing talents, the participation of our employees in the dual studies program, I see it as the development of these talents. It is so hard to acquire talents, there is talk about a global crisis of talents, so we just don't wait yet for the talents to come to us, we will get them ourselves: we need to create and support development opportunities.

There are plans, ideas and concepts to work on the durability of the 3LOE national CoVE as well as share and present the benefits of CoVEs to the national audience in Poland. Some of these include:

- the University of Słupsk is preparing an academic thesis on dual studies in higher education which is based on the experience from the 3LOE CoVE. This will be shared amongst universities and other target groups
- the VET school is testing an internship specialization pilot with multiple SMES, the results of this pilot will be assessed in the next 2-4 years. The pilot focuses on increasing the number of pupils' practical days at SMES (more practical days than required by the national curriculum)
- the Dual Bachelor Degree Program at the University of Słupsk is ongoing and will be finalized after the project duration
- the Chamber of Crafts in West Pomerania is looking into education pathway permeability options in collaboration with the West Pomeranian Technical University
- the Board of Education in West Pomerania would like to introduce the concept of COVES on the Board of Education level of all voivodships
- More national universities are finding out about the COVE concept e.g. the concept was introduced at the national VET expert convention in Elbląg (2023)
- multiple SMEs want to collaborate with the VET school in the area of on-the-job training
- the VET school will try to obtain external funding to maintain certain activities developed within the project framework
- financing could be secured by commercializing CoVE services, for this a separate national COVE website should be available (or should be available as a

subpage on the main website), this could lead to commercialization opportunities and also keep the national COVE motivated and connected after the duration of the project.

- establishing a COVE association could be an option, especially since this kind of associations have training/ schooling opportunities
- developing a specialized vocational school on the premises of one of the businesses which took part in the project. The idea is being discussed with the Marshall of the Voivodship.
- some companies involved in the project are planning long term cooperation within the 3-level structure and are looking for ways on how to finance this initiative.
- the University of Słupsk will continue involvement with businesses in the area.

Working in a CoVE opened lots of other collaborations and resulted in even greater openness and I think it debunked this myth that if you go to university, it is only to study and get a diploma, and that you should not go to university if you want to cooperate and create something together.

Conclusion and recommendations

The overall conclusion is that setting up CoVEs on a national level is of great benefit and opens communication and collaboration gateways between vocational schools, businesses and higher education.

The interviewees stated that thanks to the initiatives developed within the 3loe project students are being trained not only in their specific trades but also in understanding the broader environmental impact of their work. This holistic approach is seen as crucial for shaping future leaders who are conscious of both their technical/professional responsibilities and their environmental footprint.

The list of conclusions and recommendations is as follows:

- CoVEs are still a novel concept in Poland
- the established CoVE provided a supportive framework for information flow between vocational schools and higher education institutions
- the curriculum (s) provided and developed within the 3LOE project framework improved the acquired qualifications of the students in a way that raises their competitive advantage on the labour market
- ongoing vocational training for teachers is needed to keep up with the rapid pace of technological change
- thanks to the CoVE in Poland, vocational education teachers have access to current information about the educational trends; what is in progress, what is being developed and what has already been submitted for implementation/production at higher educational institutions. These insights allow the vocational teachers to include the newest trends and technologies into study curriculums and therefore gives them and their students an advantage. They have access

to knowledge that they would not have had access to without collaborating with higher education institutions.

- strong English skills are needed to develop a CoVE within a European Union project framework
- an increase of practical training in vocational training programs is needed in order to prepare pupils to enter the workforce
- aligning educational content with the latest industry trends and technologies, particularly in renewable energy (vocational schools) is of great importance
- each National COVE should have a separate website and an equivalent of a name in the national language, this would make it easier to continue CoVes after the project durations end
- a European system of vocational certification recognition is crucial for EU employee mobility
- there could be more focus on Micro companies in the future, teaching skills that are needed across the board (e.g. logistics, management)
- it would be beneficial for all project trainings to result in a nationally acknowledged certificate
- study visits would be a great option to organize within the COVE development process, this would tighten the collaboration and also allow teachers to observe the research process at universities as well as help spark their students “technology curiosity”.
- in Poland, there is a need for publicly accessible information on how dual studies can function on the higher education level (legal requirements, contracts between employer, school and entrepreneur).
- students from VET schools are willing to take part in the extended curriculum courses due to the environmental values that are being taught, at the same time it is important for them to know what kind of impact it will have on their career financially (specific qualifications = better salaries in the future)
- even more focus on training and developing the trainers, creating courses which allow vocational school trainers to develop their competencies so they can relay the information to their students.
- support with technical stations at vocational schools. Many VET schools in Poland could use assistance with regard to technology support e.g. a kit for teachers that would allow them to build a technology station with students, this kit would cost up to 20 EUR and allow the teachers and students to build it up on their own (example topic: comparing the energy efficiency of incandescent and led bulbs). Later on, the teachers could use the build models for research purposes.
- career counseling at the primary school level is an idea that would allow for better career guidance from the very beginning of the educational pathway
- Poland is working on Vocational / Industry Skills Centers (Branżowe Centra Umiejętności) which are part of a ministerial project focusing address niche vocational training needs in various trades, ensuring that even less common

professions can be supported through specialized training programs. There are synergies to be found between CoVEs and Vocational / Industry Skills Centers

- bridges must be built between multiple stakeholders and State Universities of Applied Sciences (Państwowe Wyższe Szkoły Zawodowe) should be involved.

CoVEs as a systemic solution should be introduced in Poland as a standard.

6.47 SPAIN

1. Partner structure

The Spanish COVE is made up of the VET school Institut Pere Martell in Tarragona, the Ministry of Education of the Government of Catalonia in Barcelona, and the water management company AGBAR in Barcelona. It is coordinated by the VET school Institut Pere Martell in Tarragona.

The 3LoE Spanish project partners have cooperated with the the University of Rovira i Virgili in Taragona, the Chamber of Commerce and Industry in Tarragona, the Water school Escuela del Agua in Barcelona and the VET school Institut Esteve Terradas in Cornellà de Llobregat within their COVE. These institutions have become permanent partners of COVE Spain.

2. CoVE structure and cooperation

The Spanish COVE was formed based on already existing cooperation. The Institut Pere Martell is a public VET school supervised by the Ministry of Education of the Government of Catalonia. The Spanish CoVE has grown and integrated new partners to implement sustainable dual vocational trainings in green economy in education, training and higher education.

Green economy courses offered within the 3LoE project are not part of the curricula of educational institutions, which are supervised by the national government. The VET school Institute Pere Martell faced difficulties finding participants in the courses:

“Another difficulty was to find students who want to enroll in the different courses because they are doing dual trainings in the companies, so they are working and studying at the same time. It is hard for them to find free time to do these courses”.

The VET school called on the Chamber of Commerce and Industry in Tarragona to find companies interested in these courses. The Chamber of Commerce and Industry in Tarragona was looking for centres to meet companies' training needs:

“We are in contact with companies, and they are looking for people that are trained on green energies, so we have to find centres that can train these people in order to help the companies”.

The Institute Esteve Terradas is, with the Institute Pere Martell, the only VET school of the region that offers a specialisation in the water industry. It hosted some of the

courses developed by the Ministry of Education of the Government of Catalonia and brought its expertise:

“They were the pioneers in some of the studies that we are offering in the COVE and most of their students are working at AGBAR. So, everything was a perfect match and came together”.

It was much more difficult to involve a university in their COVE to deliver dual training in green economy in higher education. Neither the VET schools nor the water management company AGBAR worked with a university before the 3LoE project:

“There are also new things that we are incorporating. For example, the relationship between vocational education and university did not exist before and we never imagined it could exist”.

“For us it is the first experience with the university. We have many people in vocational training doing dual courses with our companies but not in the university”.

The setting up of a COVE in the green economy in Spain as part of the 3LoE project has built bridges between vocational education and higher education. The University of Rovira i Virgili in Taragona was integrated in the Spanish COVE after creating a dual bachelor’s degree in chemistry, the first one in Spain.

The cooperation within the Spanish CoVE is positively assessed by the partners. It allowed them to strengthen their relationships with the other institutions. They also gained knowledge, as the Institute Esteve Terradas:

“With the help of the 3LoE project, we learned a lot about the green economy and improved different courses.”

The newly established cooperation with the university is very valuable for the company:

“I think this is a very huge social value that we are offering by this collaboration between university and private companies.”

Joining the COVE allowed the university to incorporate a new company in their dual training programme.

However, the collaboration between the VET school and the university has been difficult because they have different approach:

“Sometimes it is difficult to collaborate with the university. They go with one path, and we go with another path; sometimes it is difficult to find a common way”.

3. Tasks performed by the COVE

With strong support from the other seven COVEs, COVE Spain has implemented a large number of promotional and educational programmes in the 3LOE project:

a) Vocational and qualification counselling

- b) Trainings Water supply technologies
- c) Implementation dual vocational training Spain “Electromecanico”
- d) Trainings Technologies water saving.
- e) Training Wastewater treatment and recycling management
- d) Training Preparation and management of SMEs for green economy
- d) Training Waste reduction and recycling management
- e) Implementation Training for SMEs: Energy Efficiency and Renewable Energies
- f) Training Water Resource Management During Drought Periods
- g) Training Resilient Strategies for Water Management in Response to Climate Change
- h) Training Generation of Energy from Wastewater and Waste
- i) Training Operation and Maintenance of Wastewater Treatment Plants (WWTPs) and Industrial Wastewater Treatment Plants (IWTPs)
- j) Training Efficiency in the Operation of Reverse Osmosis Desalination Plants: Advanced Practices and Innovative Solutions
- k) Training Sustainable Management of Wastewater in the Circular Economy: Approaches and Solutions
- l) Training Addressing the Climate Emergency and its Impact on the Water Cycle: Practical Approaches and Innovative Solutions

Furthermore a “train-the-trainer” training was organised at the Institute Pere Martell for the students’ mentors in the company:

“So that they are ready when VET students come to the company, so that they know how to welcome them, how to teach them and how to take the best out of them.”

4. International cooperation

International cooperation is valuable for the partners of the Spanish COVE:

“It is a good thing to see another point of view because sometimes you are very focused on what we are doing, and if you can see another way of doing things, you can realise that you like that type of classes and that you can do the same thing in your classes.”

The 3LoE project was the reason and starting point for intensive cooperation with international partners:

"There are so many different countries with so many different vocational schools that enable exchange and intensive learning from each other. [...] We will take action and hope very much for support in order to continue to be in contact with the vocational schools of the project even after the end of the project."

5. Long-term continuation and plans for the future

All partners of the Spanish COVE wish to continue and increase their cooperation in the green economy. Most of them already worked together before the 3LoE project, but they agree that being part of the COVE has strengthened their relationship and fostered exchanges. This cooperation is essential:

"It is a bit strange because the number of unemployed people is high, but at the same time, companies are looking for employees. Maybe the problem is that the young people is not good educated. So maybe we must align ourselves better and make courses specifically according to the needs of the companies."

However, to do so, companies must invest in schools:

"Sometimes, it is hard because the companies say that our students are not well prepared [...], but we do not always have the necessary tools to prepare our students. [...]. In the Basque country, companies invest in schools and buy the latest tools and things to better prepare the students. In Catalonia, it is still difficult."

More and more students from vocational schools later follow a bachelor's degree at the university. There is an urgent need to develop the cooperation between VET and higher education, which remains marginal:

"Nowadays, I think that the universities only work with companies. They go directly to the companies at the end of the process and, I do not know, they do not ask us to collaborate."

"We need to strengthen the relationship between universities and vocational schools. [...] We need more communication, and this centre of excellence might help us go in this direction."

The university will draw on the experience of vocational schools of the Spanish COVE to design a training programme for the industrial and academic tutors:

"The vocational schools here already developed a guide to train the industrial and academic tutors. [...] we also need to develop this guide but at the bachelor level. Taking this as a base, it will help us to go faster in developing these training programmes."

The partners also emphasise the necessity to increase the cooperation between the universities and the companies:

"I think that universities and companies must talk and work more together. Sometimes students finish a degree and arrive in a company and realise that there is no connection between them."

The objective is to create more dual bachelor’s degrees, not only in chemistry but also in other strategic fields.

Being part of projects such as 3LoE is essential for the companies:

“It is very important for the strategy to know what is happening, the trends. Here in Spain at least the education legislation has had a lot of changes in the vocational training and on the university level as well. So, for us, it's important to know what is coming and be prepared.”

The Spanish COVE must continue, as the renewable energies are a fast-growing sector. Companies need skilled workers in this field and need the support of educational institutions and the government:

“We need more students in renewal energies. [...] We have a lot of work because the companies are putting solar panels everywhere. [...] I think the government has to do more efforts to fund students, to minor specialties that are very important for our companies.”

To motivate the students to take part in this kind of training, it would be interesting to offer them the possibility to do part of it abroad.

However, the impact of the Spanish COVE is limited:

“[...] We are a bit limited because obviously a centre vocational excellence implies curricula changes. [...] the core of it comes from the central government in Madrid and we cannot touch it.”

A new educational law will be passed in Spain in September to create a new dual model that is more interesting for the companies and the students. The green economy, the 2030 Agenda and sustainability will be part of the new curriculum.

The cooperation model of the Spanish CoVE, which gathers companies, educational and governmental institutions, will be essential in implementing this law:

“I think in the future we are going to do more things together.”

To foster cooperation within the actors of the Spanish COVE, the company suggests reducing administration as much as possible:

“Finish bureaucracy as much as possible would be the most effective way of supporting companies and universities.”

All partners of the Spanish COVE emphasise the benefits of dual studies for the companies and for the students. The companies can employ better skilled students and already know how they are working and if they are a good fit for them. It is easier for the students to find a job and they usually have access to better jobs.

The Spanish COVE may grow; the faculty of chemistry of the University of Rovira i Virgili is currently helping other faculties of chemistry in Spain to create dual bachelor's degrees:

“We know at least five faculties that are trying to develop a dual training programme for next year and we are in close contact with them because they are taking us as reference.”

6. Conclusion

Renewable energies and the green economy have gained importance in the recent years in Spain. The new school curriculum of the Spanish government will integrate the green economy and the 2030 Agenda and sustainability from September 2024. Thanks to the 3LoE project, the Spanish COVE partners are one step ahead: they are already familiar with the green economy, and it is already part of their activities. Their experience is valuable to all Spanish institutions willing to integrate green skills into their training programmes and interested in dual degrees. Spain's first dual bachelor's degree in chemistry was developed within the 3LoE project at the University of Rovira i Virgili. Other Spanish universities are already working on the development of a similar degree taking inspiration from what has been done within the Spanish COVE. Therefore, dissemination of the results and good practices of the Spanish partners in the 3LoE project should take place not only at regional level, but also at national level.

The partners of the Spanish COVE have benefited greatly from the cooperation established within the 3LoE project. The presence of the Ministry of Education of the Government of Catalonia in the COVE has been very helpful to make connections with new partners. The VET school Institut Pere Martell and the company AGBAR have cooperated with a university for the first time. It has been a milestone in the development of the Spanish COVE, but this cooperation is not self-evident. The relations between VET schools and companies with universities need to be strengthened in the future.

The cooperation within the Spanish COVE will continue beyond the project and is considered essential by the partners. In the future, the Spanish COVE should include more companies and get them to invest in their future employees' education. The Basque model, where companies invest in the schools' tools could serve as a starting point. International cooperation with other COVEs on green economy should be developed.

7 Business models for the continuation of the COVEs

7.1 Ensuring the permanent continuation of the project activities

After the end of the project, the work of the eight centers of vocational excellence will be continued with the following main tasks and their financing will be secured.

Areas of activity	Main tasks	Responsible partner	Financing	Remarks
Ongoing operation and further development of COVE	Securing the ongoing operation and cooperation	Vocational schools	National funding	
	Involving other regional players in the cooperation	Chambers, SME association and vocational education institutions	Membership fees of the companies	
	Promotion of smart regional development, regional economy, inter-regional cooperation with local and regional authorities and integration of value chains	Colleges and Universities	National funding Fundings from COVE members	
Train the Trainer Programs	Training for personnel and center management.	Colleges and Universities	National funding Fundings VET provider Participant fees	The Train the Trainer programs are transferred to 22 colleges & universities, which run them on an ongoing basis, so that well-qualified teachers and consultants are constantly available in sufficient numbers in all regions.
	Training for consultants and teachers for the implementation of educational consultations			
	Training for teachers to conduct dual vocational training			
	Training for teachers to conduct further training			
	Trainings A Basic Digital Skills and B Advanced Digital Skills			
	Training for university lecturers and SME advisors to conduct dual Bachelor programs and innovation promotion			
	Comprehensive career counselling for young people and their parents	Vocational schools Chambers	National funding	The charging of consulting fees is under consideration.

Initial vocational training		Talentcenter of WKO Steiermark/WIF	National & own funds	Consultations by colleges & universities
	Implementation of dual vocational training for the various professions	Vocational schools SMEs	National funding Own funds	Transfer of training programs from countries with dual vocational education and implementation consultations.
	Extensive qualification, support and counselling tasks for young people with learning difficulties or social disadvantages as well as implementation of special staged vocational training courses for people with learning difficulties in co-operation with companies	Vocational schools Chambers SMEs	National funding National funding & own funds Own funds	Corresponding concepts and first staged training programs with curricula, teaching materials, etc. were developed in the 3LOE project. Consultations by colleges & universities
	Education courses for strong learners who receive additional qualifications and early further trainings already during the vocational education	Vocational schools SMEs	National funding Own funds	Consultations by colleges & universities
	Training the trainers in companies and accepting the trainer aptitude examination	Chambers, SME association and vocational education institutions Vocational schools	Participant fees National funding & participant fees	In order to enable companies to provide vocational education within the framework of dual systems.
	For persons with completed vocational education implementation of trainings to become a technician or vocational master	Chambers, SME association and vocational education institutions Vocational schools	Participant fees & national funding National funding	Successful completion of the course should also entitle to study at a university. Vocational schools primarily training technicians.
	Promotion entrepreneurship and execution of business start-up	Chambers, SME association and	Participant fees &	Successfully tested education and counselling

Further vocational training	courses and accompanying consultation by business founders up to the establishment or takeover of a business	vocational education institutions	national funding	programs are available.
	Demand-oriented implementation of further training programs covering all relevant aspects of the strongly growing need for further training of entrepreneurs, managers and skilled workers	Chambers, SME association and vocational education institutions Vocational schools	Participant fees Participant fees	Consultations and, if necessary, provision of lecturers by colleges & universities.
	Implementation of professional further education for entrepreneurs, managers and skilled workers with recognized official further education degree	Chambers, SME association and vocational education institutions Vocational schools	Participant fees Participant fees	Corresponding concepts, examination regulations and initial training programs were developed in the 3LOE project.
	Targeted further training for women and men during the family phase as well as qualification and counselling tasks during the re-entry into the working life	Chambers, SME association and vocational education institutions	Participant fees & national funding	Consultations and, if necessary, provision of lecturers by colleges & universities
	Conducting further training and counselling programmes for older people	Chambers, SME association and vocational education institutions	Participant fees & national funding	Consultations and, if necessary, provision of lecturers by colleges & universities
	Carrying out retraining, qualification and integration measures for the unemployed	Chambers, SME association and vocational education institutions	National funds of the employment services	Concepts and integration programs were developed in the 3LOE project.
	Implementation of training for refugees and other foreigners and integration into working life	Chambers, SME association and vocational education institutions	National funding	Successfully tested education and counselling programs are available.
	Implementation of dual Bachelor study programs	Colleges & Universities SMEs	National funding Own funds	In addition to the study programs developed in the project, other study programs are transferred from

Higher education and promotion of innovations		Vocational schools	National funding	Germany and implementations are advised.
	Implementation of trial Bachelor study programs with integrated vocational master training	Colleges & Universities SMEs Vocational schools	National funding Own funds National funding	Successfully tested study programs are available.
	Exchange of information and experience as well as the transfer of knowledge and technology in writing and electronically	Colleges & Universities SMEs Chambers & SME association	National funding Own funds National & own funding	In particular through the personal exchange which is so important for SMEs, in the form of meetings, information and training courses, group coaching, etc.
	Promotion of innovations for SMEs as well as implementation of R&D tasks in and with SMEs	Colleges & Universities SMEs Chambers & SME association	National funding Own funds National & own funding	A coaching and innovation support program was developed and successfully tested in the 3LOE project.

The business model outlined above for the continuation of the work of the eight Centers of vocational Excellence was created, extensively deliberated, and bindingly agreed upon by the partners of all COVEs. The specified forms of financing were also examined and agreed upon; the financing of all listed work has been secured.

Development work (e.g., development of new educational or support programs) is being done across COVEs.

7.2 Business model for coordination and international cooperation

The tasks of coordination, management, implementation of development tasks and international cooperation will be carried out COVE overarching by the Hans-Parlament after the end of the 3LOE project. This concerns the tasks listed below and their financing. The COVE partners involved in each case bear their own costs or finance them from the sources indicated in chapter 7.1.

Task focus I: Coordination of the eight COVE

The Hanse-Parlament will continue to coordinate and manage the seven COVEs after the end of the project. This includes the following work in particular:

- management and coordination of the COVE.

- ensuring and coordination of the cooperation of the 7 COVE with each other.
- joint consultations, regular exchange of information and mutual exchange of experience at general meetings and at working sessions of the Hanse-Parlament.
- providing information as part of the daily management, as well as consultations and provision of documents for various target groups, e.g. for companies, educational institutions, politics, public administrations etc.
- transfer of developed funding concepts, curricula, and best practice examples and consultations for implementations.
- demand-oriented application of process consulting and support with the implementation of educational and promotional measures.
- in-depth exchange of experience, advocacy and broad communication of information on needs, concepts and implementation options for dual vocational and higher education.

All general meetings and working sessions of the Hanse-Parlament are dedicated to joint consultation, feedback, further development of existing and drafting of new additional educational and support measures.

These tasks are financed from the Hanse-Parlament's own funds (primarily membership fees).

Task focus II: Conducting development work

The education, counselling and support programs available at the end of the project will require ongoing updating and further development in the future. These tasks are often linked to implementation of vocational training and university degree programs. Accordingly, they are financed from sources described under chapter 3. Coordination by the Hanse-Parlament ensures that all COVEs receive the realized further developments free of charge.

Comprehensive new developments (e.g. on educational programs) and research work are also imperative after the end of the project. Implementation of more complex events, development work or R&D tasks, is secured by projects developed with funding from national and especially EU funds.

Once a year, the Hanse-Parlament organizes a half-day to one-day workshop with all members and COVE partners on the needs, identification, consultation and structuring of required development and research projects. On this basis, the Hanse-Parlament develops comprehensive project outlines. These are coordinated with all stakeholders, and it is jointly decided which partners will be involved in the implementation. The elaborated project applications are submitted for funding in suitable EU programs and, in the case of smaller projects, also in national programs. The projects are then implemented under the leadership of the Hanse-Parlament together with the selected chambers, other SME promoters, vocational training institutions as well as colleges and universities. All other members of the Hanse-Parlament and COVE partners are involved as associated partners in the overall project implementation.

In the second half of the 3LOE project, priority topics for important development and research projects have already emerged, for which the following project proposals have been developed and submitted to the EU for funding:

- Regional and international Education Partnerships for Workplace Innovation in SMEs (Project has already started)
- Digitalization for the Green Economy in SMEs (Project has already started)
- Promoting energy efficiency in residential buildings (Project has already started)
- Generation Z – Happy Green Jobs (Project has already started)
- Old labour virtues for shaping the working world of tomorrow (Project has been applied for, funding decision in autumn 2024)

The analysis and identification of development and R&D projects to be carried out as well as the preparation of funding applications is financed from the Hanseatic Parliament's own funds and those of the partners involved. In case of approval, the implementation will be carried out with funding from EU funds and additionally from national funds.

In order to comprehensively prepare and secure the implementation of this work after the end of the project, a political strategy program was developed in the 3LOE project, and all EU funding opportunities were analysed (see result 2.4 Political strategy and action program).

Task focus III: Transnational Cooperation

The Hans-Parlament is a non-profit institution comprising 50 chambers, other SME promoters and institutions of vocational training and 24 colleges and universities from 13 countries. Ten of these members are partners in the 3LOE project, who run the eight COVEs together with the other project partners.

The remaining members of the Hanse-Parlament are involved in the 3LOE project as associated partners. They continuously contribute their wishes, needs and conditions to the project work and receive all project results and consultations for implementation. This ensures that the 70 associated partners from 13 countries, as transfer recipients and implementation partners, use the project results themselves in their countries/regions and implement them on a permanent basis. Following the example of the 3LOE project, centers of vocational excellence are also to be developed in these countries in the medium term. Since these are members of the Hanse-Parlament, it is in the self-interest of the Hans-Parlament to continue this transfer and implementation work intensively after the end of the project and thus comprehensively promote its members. The Hanse-Parliament and its members finance the implementation of this work from their own funds. For the implementations, the individual members receive comprehensive funding from national resources.

The 70 associated partners from 13 countries (= members of the Hanse-Parlament) are also intensively involved in the transnational cooperation with the seven COVE during the project period. This pursues the objectives that:

- a) the eight COVE of the project benefit from the experiences and work results of 70 educational institutions and SME promoters from 13 countries, best practices are transferred, intensively involved in international cooperation and bilateral and multilateral project work is initiated. This transnational cooperation has made a significant contribution to the development of such a comprehensive range of educational programs in vocational training, continuing education and higher education during the project period.
- b) the 70 educational institutions and SME promoters intensively accompany the establishment and development of the seven COVEs, receive first-hand information, benefit from the international exchange of information and experience and receive all project results so that they can implement them themselves on a permanent basis with advice from the COVE partners and develop their own COVEs in their countries.

This intensive cooperation of the eight COVE and the 70 associated partners will be continued intensively under the coordination of the Hans-Parlament after the end of the 3LOE project. Extensive use is also made of conferences, meetings, workshops, members' meetings, etc., which the Hanse-Parlament holds as part of its daily business. The continuation of these cooperations after the end of the project is financed from the Hanse-Parlament's own funds and those of the partners involved. For individual cooperation activities and events, additional funding is obtained from national funds and EU funding is used in connection with the implementation of other projects.

The business model for central coordination, development tasks and international cooperation outlined above was developed by the Hans-Parlament and intensively discussed and agreed with

- all partners of the 3LOE project and
- the members of the Hanse-Parlament.

Further consultations and coordination took place at a conference, involving all COVE partners and representatives from companies, politics and administrations. At a general meeting, the members of the Hanse-Parliament discussed the concept and decided to implement it.

Funding has been secured to continue this work after the end of the project.

7.3 Conclusion

The business of all partners of the 3LOE project relates to the development and implementation of measures for vocational training, further education and higher education. They are strongly involved in these educational areas and have a strong self-interest in continuing the tasks of the 3LOE project after the end of the project.

Any funding and intensification of vocational training is an outstanding socio-political concern and is one of the most important tasks in overcoming the challenges of the future. Strengthening and improving the quality of vocational training is also the most important funding task for the economy in general and SMEs in particular.

During the implementation of the 3LOE project, the project partners made the experience that, with the help of EU funding, they were able to jointly develop and implement extensive education and funding programs, benefit greatly from international cooperation and the realization of three-stage centers of vocational excellence represents an outstanding model for mastering important educational tasks and for smart regional development.

Therefore, all project partners want to pursue the objectives and tasks of the 3LOE project with all their strength after the end of the project and continue to carry out this work in their own interest and also in the interest of society and economic policy. To this end, they have developed, advised, coordinated and made binding decisions on the business models listed above.

Towards the end of the project, each of the eight centres of vocational excellence concluded a comprehensive written agreement with the respective project partners and the other institutions involved in the COVE on the continuation of the COVE and on further international cooperation after the end of the project.

The permanent continuation and further development of the project activities and their financing are secured.