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ENGINE Engineering curricula modernization in renewable energy in Albanian Universities

Financial and Institutional Sustainability Strategic Plan

July 2022

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Abbreviations

HEI – Higher Education Institution

PCO – Partners Country' Organization

PC – Partner Country

EU – European Union

UET – European University of Tirana

KPT – Professional College of Tirana

AP – Associated Partners

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Summary

This document highlights the main actions to be undertaken by the ENGINE project's consortium to ensure the sustainability of the project and its results after the end of the project in November 2023. This deliverable thus corresponds to task 5.6 "Creation of the financial and institutional sustainability strategic plan", led by the European University of Tirana (UET) and Professional College of Tirana (KPT). The present document has been drafted having in mind the following EU's definition of a project sustainability plan: "*a project is sustainable when it continues to deliver benefits to the project beneficiaries and/or other communities for an extended period after the financial assistance has been terminated*"[1]

Following are highlighted the major project pillars identified to ensure the sustainability of ENGINE:

- Financial and Institutional Sustainability Strategic Plan include the program sustainability: new study programs and upgraded courses will become part of the official university's academic offer, the laboratories will be maintained by the partner HEIs, new teaching methods will be introduced to other courses which are not considered directly in this project too, etc.
- Based on a valorization and dissemination strategy the project will continuously develop dissemination activities, and this is done as an attempt to increase the number beneficiaries as much as possible as well as assure the sustainability of the achieved impact.
- By the end of the project, an exploitation agreement will be signed by the partners for the intellectual property rights and for the use of the results for educational purposes. To facilitate the use of the course materials, they will be translated in Albanian language depending on the user needs. The courses will be integrated in the existing academic curricula and training activities of the partner institutions which guarantees the sustainability of project result.

[1] European Commission Directorate-General Education and Culture (2006) "Sustainability of international cooperation projects in the field of higher education and vocational training - Handbook on Sustainability". Luxembourg: Office for Official Publications of the European Communities, ISBN: 92-9157

- All Program Country partners have proven to be reliable as of previous collaboration in the field of expertise, as well as having a track record in EU projects. They have the experience, skills, and competencies required for significant contribution to the core activities and to mainstream the adoption of new and upgraded VET and bachelor curricula in renewable energy in partner Albanian HEIs. Additionally, they have proven record of ensuring a solid quality assurance and control, and wide dissemination and sustainability of project outcomes beyond the lifetime of the funding period.
- Involvement of non-academic partners - There are 3 non-academic, 2 from Albania and 1 from Greece. Partners are experts in the design and implementation of renewable energy installations. So, they will provide expertise in the subject matter, provide real cases from their practice for the students' projects and practical work and expertise in entrepreneurship and how to create spin-off companies for realization of the research projects of the universities. ASCAL is the national agency in charge of the accreditation process in Albania. They presence in the consortium is considered highly relevant to ensure the successful accreditation of the VET diplomas. Lastly, the identified associated partners are very strategic for the successful project implementation and to ensure the sustainability of the project results. They will provide good insights from the market and facilitate the process of networking of partner HEIs with business representatives from industry and energy sector.
- Associated Partners (AP) involved in this project will contribute to the implementation of specific project tasks/activities and support the dissemination and sustainability of the project. Some of the Associated Partners in this project, are Ministry of Infrastructure and Energy Albania, Balfin Group/Albanian Energy Supplier, Konfindustria, Union of Chambers of Commerce and Industry of Albania, Durres Chamber of Commerce and Industry, The International Renewable Energy Agency (IRENA) / Coordinating Office in Albania).
- Before the end of the project, partner HEIs will sign a statement for financial support and sustainability of the new/upgraded study programs, to guarantee that these courses will be delivered, and students will be enrolled in these study programs for at least next 5 years after the completion of the project.

1. The Project in Brief

The ENGINE project aim is modernization and internationalization of VET and bachelor curricula in engineering for renewable energies in the targeted universities in Albania through innovation of curricula in line with the new development in the area and the labor market demand.

Its specific objectives are:

- To analyze the educational needs in engineering for renewable energies through problem and job analysis, and to define the necessary knowledge, skills and competencies of engineers in the sector of renewable energies in terms of learning outcomes.
- To design syllabi and course content and assessment for compulsory and elective courses in VET and bachelor engineering education for renewable energy to meet the market needs and upgrade the university academic offer accordingly.
- To develop new e-learning courses with modular structure for the innovated curricula of Partner HEIs and to establish a platform for knowledge sharing between Albanian HEIs and program partner institutions.
- To innovate the laboratory equipment and to perform a pilot test and to start the implementation of the joint modules/courses' delivery during the last project year.

Main activities are:

- Through analysis of the domains, the necessary skills and knowledge in terms of learning outcomes will be defined for the necessary knowledge and skills.
- The courses will be developed to meet the current needs of industry regarding the technological forecasts. Each university will develop courses in its best fields of expertise and will benefit from courses developed by other universities in their areas of specialization. This pooling of resources will enable the building of a repository of high quality fully online courses for the benefit of all participating universities.
- The laboratories of Albanian partner HEIs will be updated with new equipment for both practical work of students and development and delivery of ICT-based materials. Teachers will be trained on new teaching methodologies and pedagogical approaches with the use of learning outcomes and on the development of e-learning materials.
- The third project year is devoted to testing and implementation of courses. The pilot test will be conducted with different groups of learners form the universities.

- During the 3rd year of the project year, procedures for accreditation/recognition of new or innovated curricula will start.
- To facilitate the use of the course materials, they will be translated in Albanian language depending on the user needs. After the project ended, the courses will be integrated in the existing academic curricula and training activities of the partner institutions which guarantees the sustainability of project results.
- Quality assessment, which will be based on a careful self-evaluation carried out by the institutions involved in the project, will be followed by external evaluation by peers.

Project Partners:

- P1. Polytechnic University of Tirana [UPT] – Albania;
- P2. Katholieke Universiteit Leuven [KU Leuven] – Belgium;
- P3. Technical University of Sofia [TUS] – Bulgaria;
- P4. National and Kapodistrian University of Athens [NKUA] – Greece;
- P5. "Kadir Has" University [KHAS] – Turkey;
- P6. European University of Tirana [UET] – Albania;
- P7. "Aleksandër Moisiu" University of Durrës [UAMD] – Albania;
- P8. Professional College of Tirana [KPT] – Albania;
- P9. "Albenecon" – Albania;
- P10. Quality Assurance Agency in Higher Education [ASCAL] – Albania;
- P11. Creative Thinking Development [CTD] – Greece.

1.1. Purpose of the Financial and Institutional Sustainability Strategic Plan

The Financial and Institutional Sustainability Strategic Plan (further - sustainability plan) document is a blueprint for how ENGINE partnership will work to ensure the long-term sustainability of the project main outputs and outcomes:

- New/upgraded study programs in renewable energy and energy efficiency (New study programs, upgraded curricula's, new courses, Report on the need analysis and competence matrix with learning outcomes, and Report on the best practices in Program HEIs and global trends).

- A platform and procedures for knowledge sharing between HEIs in the Partner countries and European academy and students (Virtual mobility through e-learning provided by ICT, training of Partner Staff on micro learning, practice-oriented teaching and gamified learning)
- Innovated laboratory equipment's (laboratory course material developed, through equipment to be acquired in the framework of this project, academic staff will have the opportunity to teach and research in modernized laboratories).

Sustainability for each Partner HEIs will depend on the specific internal and external environment. That's why it is important to have a plan for sustainable life of the ENGINE project. There is no single formula or answer to the sustainability challenge. However, creating a written sustainability plan will provide a road map and serve as guidance for sustainability efforts. The process of creating a written sustainability plan can also strengthen ENGINE partners' investment and understanding of the efforts needed to keep ENGINE partners working and improving.

The sustainability plan helps to identify sustainability pillars of the project, what resources are necessary to sustain the project, encourage the development of partnerships and support collaboration, and help define progress and the necessary action steps needed to ensure long-term success after the ENGINE project ends.

1.2. Defining "Sustainability"

Sustainability is a measure of the partner country organizations' (PCO) ability to fulfill their mission and serve their stakeholders over time. This document is designed for the PCOs, for which improved sustainability means broader sources of funding and an enhanced ability to deliver vital services to target groups.

There is a wealth of knowledge about the process of improving HEIs' sustainability, built on the experiences of many people who have worked over many years to improve the sustainability of many different organizations. The main insight from this collective experience is that an institution's level of commitment to sustainability is the most important factor in its success. There must be full commitment to the process throughout the institution, from the Board of Administrators through academics and the entire staff of a university. This is because

sustainability is a process, not an end. An institution does not "become" sustainable and then rest on its success. Sustainability involves all the elements and functions of an organization, and every major decision made within the organization — from human resources to finances to service delivery — must be considered through the filter of sustainability.

The seven elements of sustainability are:

1. Vision: Clarity exists about fundamental issues such as what is being sustained, for how long, and at what level of activity; all partners in the initiative embrace the vision.
2. Results Orientation: The entire focus is on the success of the university, national education institutions and industry/business collaboration.
3. Strategic Financing Orientation: A long-term perspective is taken to financing activities, cultivating multiple diverse sources of revenue to maintain financing of the ENGINE at sufficient levels.
4. Broad Based Community Support: Community members show solid support of the ENGINE project and its activities through volunteerism, donations, cooperation and other forms of involvement.
5. Ability to Adapt to Changing Conditions: Flexibility is maintained to change strategies, services, systems etc. over time without losing sight of the end results sought.
6. Strong Internal Systems: Internal organizational functions – governance, finance, human resources, evaluation, and others – are reliable and effective.
7. Sustainability Plan: A written plan has been developed and agreed by the ENGINE members and is used to guide actions to promote long-term sustainability.

2. Sustainability Strategy and Actions

This plan aims to maximize the impact of project results over time by optimizing their value, strengthening their impact, and transferring them to context of HEIs. The main objective of the ENGINE project is the Modernization of curricula in engineering for renewable energies in the targeted Albanian universities and higher technical colleges, through new study programs and updated BSc curricula in line with the new development in area, the labor market demand, and the opportunities for virtual mobility through e-learning provided by ICT.

To achieve this, the PCs objectives will be as follows:

- Preparation – to assess the current market needs in Albania in the field of energy and assess current academic offer at each partner HEI and mapping the existing VET curricula and bachelor in Program Countries which after will be used as a reference point for the development of the new curricula and update the existing study programs. The assessment of the academic offer at Partner HEIs will be done through problem and job/content analysis, and to define the necessary knowledge, skills and competencies for engineers in the sector in terms of learning outcomes.
  Responsible Partner: KHAS/UAMD
  Main KPIs: In-depth desk research assessment and report for Albania and partner HEIs
  Creation of the competence matrix
  Report on the best practices in Program HEIs and global trends
  Job/domain analysis and development of guidelines for learning outcomes
- Development – Syllabi and course content development. The overall aim is to design syllabi, course content and assessment for new higher VET degrees and updated bachelor programs in renewable energies education to meet the user needs and to the learning outcomes defined in WP1.
  Responsible Partner: TUS/ KU Luven
  Main KPIs: Design of the new program in Electrical Engineering and Renewable Energy.
  The number of new courses designed for existing relevant study programs.
- Development – e-learning courses development and capacity building for staff. This objective aims at performing the instructional design for e-learning courses and developing the learning materials and assessment tests for e-learning courses. Additionally, it aims at the training and capacity building of the relevant staff who will soon teach the new courses at Partner HEIs. ENGINE Platform will be created and will incorporate microlearning paradigm in the form of a cloud-based solution. The ENGINE platform will enable the setup and usage of remote and virtual engineering labs, enabling web-access to engineering equipment related to smart grids for practical work of the students. E-learning courses will be uploaded on the ENGINE platform too.
  Responsible Partner: NKUA/ UET
  Main KPIs: The number of designed and developed e-learning courses
  Creation of the ENGINE online platform and new teaching materials
  The number of staff participating in training sessions.

- A quality assurance process will be conducted and will ensure that the project activities are in line and approved by institutional and national authorities. The project activities are implemented following a good dissemination and exploitation plan; thus, the results will be visible in all partner countries to all stakeholders and interested partners. The project has also planned several specific activities in this regard (dissemination materials, website, newsletter, national info day, conference paper, etc.) which will spread the results of the project at country level. Consequently, the results of the project will impact not only the ENGINE partner institutions but the countries at large.
  Responsible Partner: KU Leuven/ CRE.THI.DEV
  Main KPIs: Quality of indicators set
  Opened channels of communication
  Successful implementation of each activity

3. Internal and External Stakeholders

In the table below are identified the direct and indirect stakeholders in the sustainability area of the ENGINE Project. Each of these stakeholders might benefit and simultaneously play an important role in the success of this project after its lifespan.

Stakeholder	Expected Result/Outcome/Role
Students at PC universities	• Enrolled in new/upgraded study program in renewable energy and energy efficiency. • Internationalization of higher education with e-learning platform and e-courses will improve the quality of education and learning practices.
University Staff	• Improves academic quality and teaching practices. • Fosters development of human capacities through national and international collaboration, knowledge sharing and new laboratories.

University	• Creates strong links and interactions between ENGINE partners and other stakeholders. • Modernization and internationalization of study programs. • New laboratories/ equipment's.
External stakeholders (housing, service, industry, and transport sector)	• Raise awareness about the importance of energy efficiency. • Addressing the rules for building new buildings or renovating them. • Measures that will affect the reduction of energy consumption will be the implementation of the Energy Code of the buildings, existing and new stock of public buildings and private. • The application of fiscal incentives for renewable energy sources.
Policy Makers	• Modernization and internationalization of Higher Education as a priority of Albanian Government. • Renewable energy and energy efficiency policies. • Opening/ licencing of the new study program. • Accreditation of study programs (ASCAL)

3.1. Role of Media in the sustainability

In this age of digital interconnectedness, people's perception of modernization and internationalization of study programs is changing largely because of media. Nowadays, education – mainly in terms of modernization and internationalization – is a much larger topic in

media presentations. In this framework, ENGINE's legacy must also be integrated and disseminated through relevant media platforms.

The promotion of ENGINE's outcomes must then be done through various type of media including electronic and digital platforms and newspapers that deal with promoting qualitative education and innovative learning ways (such as e-Platform) to engage young people into another dimension of modernization and internationalization.

In addition to the digital platforms and as part of the sustainability of the project, the use of printed media and relevant science education publications and journals must serve the dissemination of the project findings.

Based on a valorization and dissemination strategy the project will continuously develop dissemination activities, and this is done as an attempt to increase the number beneficiaries as much as possible as well as assure the sustainability of the achieved impact. To achieve such objective, transparent instruments of communication will be used, as well as adequate and timely inclusion of targeted audience for the project. There will be a well-designed Dissemination and Exploitation Strategy, ensuring a smooth roll out of key messages, while synchronizing targeted outreach with project implementation milestones. A variety of communication tools will be used for measuring communication and awareness raising effectiveness. To ensure cohesive delivery of project outputs and results, internal communication activities will be performed concurrent to the external ones.

ENGINE should be available on several social media including Facebook, Twitter, Instagram, etc. as part of its communication strategy.

Responsible Partner: UET/ KPT

Main KPIs: Project website
Dissemination and Exploitation Strategy
The number of dissemination activities
Engagements, clicks, likes, shares, comments, etc.

4. Funding viability after the end of EU funding

ENGINE's consortium role is to promote the sustainability of the project and to embed policy linkages between modernization and internationalization of study programs through policy and decision-makers.

As part of its mandate in finding out effective ways to ensure the legacy of ENGINE's results, PCs are also in charge of seeking additional financial and intellectual support through strategic partnerships to ensure that the outcomes of ENGINE are kept up and running once the grant period is over.

- The sustainability of the new/upgraded study programs will be guaranteed by Albanian HEIs (institutions annual budget and students fees).
- The project personnel will be trained to form competences on accessing new funding sources from funding programs.
- Knowledge and expertise acquired by the partner institution staff during the project will be an added value.
- Continuous promotion of the values of modernization, internationalization, trainings, research improvement, etc.
- Social media promotion of ENGINE Project and association with local enterprises.

5. Conclusions

The sustainability of ENGINE Project will mainly rely on the continuity of offering of new/upgraded study programs and a supportive and cooperative functioning within the ENGINE's consortium together with a solid partnership with the surrounding networks and collaborating institutions, which are essential for the sustainability of the project. A strong commitment among all partners is a vital factor for the legacy of ENGINE.

The end of ENGINE's project will be marked by the generation of new/updated modernized and internationalized study programs in the field of renewable energy and energy efficiency.

The approaches to ensuring sustainability include:

- Offering of new/upgraded study programs by PC's HEIs.
- Launching of an Online Learning Platform for all partners to support e-learning.
- Further cooperation with Program countries involved in the project, beyond the lifetime of the project to progress the cooperation.
- Strong collaboration with the business and other external stakeholders.
- Knowledge and expertise acquired by the partner institution staff during the project will be the added value.
- Dissemination materials, website, newsletter, national info day, conference paper, etc. and social media to increase awareness in national level.
- Experience of work with regional partners for a three years, will help in developing mutual trust and understanding, which will be important for development of common ground of cooperation and positive impact.