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Erasmus+ Capacity Building in Higher Education Project

Engineering curricula modernization in renewable energy in Albanian Universities / ENGINE

619338-EPP-1-2020-1-AL-EPPKA2-CBHE-JP

WP4 – D4.3 Final External Quality Report

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Abbreviations and Acronyms

Abbreviation/acronym

DEF	Deliverable Evaluation Form
DQM	Deputy Quality Manager
DT	Document Template
EACEA	Education, Audiovisual and Culture Executive Agency
EC	European Commission
EEF	Event Evaluation Form
EU	European Union
EQE	External Quality Evaluator
GA	Grant Agreement
HEI	Higher Education Institution
KOM	Kick off Meeting
MEF	Meeting Evaluation Form
QAF	Quality Assessment Form
PQC	Project Quality Committee
QEP	Quality Evaluation Plan
QM	Quality Manager
QPS	Quality Plan Spreadsheet
SC	Steering Committee
TET	Training Evaluation by Trainees
TPM	Transnational Project Meeting
WP	Work Package

WPL	Work Package Leader
WPcL	Work Package Co-Leader

1. Introduction

In order to achieve an objective and independent assessment of the quality of the project outcomes, experts from programme countries institutions were be subcontracted the role of External Quality Evaluators. The EQEs acquired access to all documents prepared during the project implementation visited the capacity building sites in Albania. After discussion amongst partners during the online meeting on 09.06.2021, it was decided that the EQE will be appointed on M23 and follow the last year of the project implementation. The main reason for this was that budget allocation did not allow for an expert following the project for three years and produce reports of high quality. The new scheme is a common practice that has been practiced by many partners and focuses on the last year of the project implantation, when sustainability and impact are the in the focus. During the TPM held on M19 in Sofia, a further amendment was decided. The budget and responsibility for subcontracting the External Quality Auditing were passed from KUL to CRETHIDEV, a partner with great experience in Quality Assessment of CBHE projects, and co-Leader of the Work Package. It was further decided to split the subcontracting in two distinct roles and hire two different persons as EQEs. The 1st EQE would have the role of participating in the Quality Audit field visits and produce recommendations, the 2nd EQE the role of evaluating the project deliverables.

The External Quality Evaluators, will ensure a neutral review and a consistency assessment of the project deliverables, and will conduct constructive evaluation by working according to the terms set by the project QM, PQC and the Project Coordinator. The purpose of subcontracting the EQEs is to ensure independence from project partners.

2. Process of subcontracting the EQEs

According to the decision of the Project Quality Committee made on M19 in Sofia, the EQEs will be selected after a public call and will have to comply with the criteria set in the call. The criteria set for the call were:

Exclusion Criteria

- A PhD diplomas
- A minimum of 10 years' experience as HE Professor in Engineering departments;
- A minimum of five-year experience in the implementation of national, EU or international projects
- Excellent knowledge of English (C2)

Additional Criteria (rated)

- Research or working experience in the Renewable Energy sector (minimum 2 years)

- Experience in the implementation of national, EU or international projects for Renewable Energy

The call for applicants was published on M22 (01.08.2022) by CRETHIDEV and applicants were requested to send their applications by M23 (15.09.2022). During M23 the applications were evaluated by a committee appointed by CRETHIDEV and on 26.09.2022 contracts were signed with Prof. Evangelos Hristoforou (for the role of EQE1) and Prof. Vesna Spasic Jokic (for the role of EQE2).

3. Quality Audit field visits and EQE1 recommendations

The Quality Audit field visit was performed on M27, when all equipment was installed and functional and partners Albanian HEIs were ready to start using it for piloting purposes. EQE1 Prof. Evangelos Hristoforou and DQM Mr. Michail Delagrammatikas visited Tirana and Durres on January 16 & 17 2023.

Special attention was given the all equipment was marked with the Erasmus+ visual identity and ENGINE project GA number and logo, thus making EU co-funding visible.

On January 16, EQE1 and DQM visited the premises of UAMD in Durres, where they met and discussed with Prof. Luciana Toti, Prof. Nikollaq Terezi and Prof. Julian Priska, about the project implementation, and how they are thinking of using the acquired equipment and sustain the results of capacity building achieved through ENGINE project. Then they visited the Physical Measurements laboratory and audited the installed equipment.

A

B

Figure 1. A) EQE1 Pror. Evangelos Hristoforou auditing the ENGINE project Equipment in the Physical Measurements Lab, UAMD, Durres. Prof. Luciana Toti, Prof. Nikollaq Terezi and Prof. Julian Priska are explaining the intended use of equipment, which mainly focuses on energy auditing of buildings and infrastructure. B) Thermal Camera (IR)

On January 17 EQE1 and DQM, visited the partners educational organisations in Tirana. Namely UPT, where they met with Prof. Raimonda Bualoti and Prof. Celo Marialis, who guided them in the Electrical Power Laboratory, where equipment for simulation of the different energy production, storage, transfer and operation systems, acquired by the ENGINE project was installed. The equipment is complementary to previously owned infrastructure, acquired through other EU funded project and National funding, which brings additional value and testifies to sustainability. Fruitful discussion was made on who UPT upgraded their post graduate curriculum for a one year to a two years master's degree and the collaboration they have with industrial partners and most important hydroelectric power production plants, expanding both to research and educational purposes (study visits, internships). Concern was expressed on how solar and wind power can be introduced to the Albanian electrical energy mixture, and how this may be supported by UPT as the largest and most important Electrical Engineering School in Albania.

A

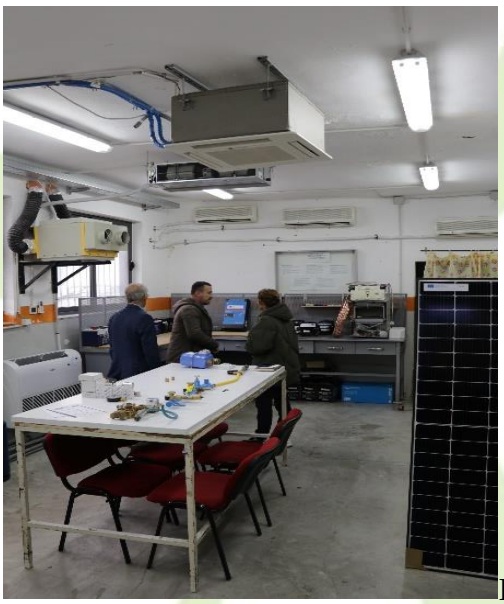
B

Figure 2. A) EQE1 Pror. Evangelos Hristoforou auditing the ENGINE project Equipment in the Electrical Power Systems Lab, UPT, Tirana. Prof. Raimonda Buhaljoti and Prof. Celo Marialis explain the intended use of equipment and its use in under and post-graduate studies. B) Electrical Power Systems simulating equipment, partially acquired through EU funding and the ENGINE project.

On the same day, EQE1 and DQM visited the campus that houses, amongst others, the UET and KPT. In KPT they met and discussed with Ms. Diana Biba, on the professional courses offered by the college and visited the laboratories, where the ENGINE project equipment is used, namely the Automotive Engineering Lab and the Thermohydraulic Lab. While in UET, they met and discussed with Ms. Kebjana Haka and Prof. Hasimin Keci, who guided them to the Building Materials laboratory where ENGINE equipment is installed and used for training engineers on the energy efficiency of buildings, which allows

for testing building materials of low carbon footprint and high thermal insulation properties against the regulatory properties needed for application in constructions.

A



B

Figure 3. EQE1 Pror. Evangelos Hristoforou auditing the ENGINE project equipment in the Automotive Engineering Lab (A) and Thermohydraulic Lab (B) KPT, Tirana.

A

B

Figure 3. A&B ENGINE project equipment in the Building Materials Lab, UET, Tirana.

The recommendations provided by Prof. Evangelos Hristoforou after the field visit are the following:

1. Plan as many as possible hands-on laboratory exercises for students, using the ENGINE-acquired equipment, unless special circumstances or nature of the equipment demands for demonstration laboratory exercises only.
2. Use the equipment for applied research purposes and for providing services to the industry. Accreditation of certain equipment maybe needed for this but this should not contradict the educational purpose of the acquired equipment. In any case, demonstration laboratory exercises should be -at least- offered.
3. Promote collaboration with the industry within the educational process, not excluding undergraduate students, through study visits and internships as well as more collaborative actions such as learning factories.
4. For the energy sector, focus on renewable energy systems, both those existing in Albania (Hydropower plants) and those that need to be introduced to the energy mixture (Solar and Wind power).
5. For the energy sector focus on novel technologies and applications in energy storage systems.
6. For the construction sector, focus on novel alternative materials that have a low carbon footprint during production and enhance the energy efficiency of buildings.
7. For the construction sector, enhance collaboration between ENGINE partners for combining equipment that tests the mechanical properties of -novel- building materials with the energy efficiency of buildings.
8. For the industrial sector, invest in collaboration between the partners for offering in common services to the industry for increasing energy efficiency of processes (operation) and infrastructure.
9. Seek follow-up funding to ensure the sustainability of the project results. A diverse range of funding sources should be sought as e.g. private funding (industrial projects and services to the industry), EU funding (not only in the frame of educational but also research projects)
10. Enhanced educational collaboration with European HEIs through internalization of post-graduate studies (e.g. Erasmus Mundus Joint Masters)

The recommendations were disseminated amongst the partners and discussed in the workshop held on June 2023 in Durres and the Final Project Meeting in Tirana.

4. Deliverables assessment by EQE2

The quality of the project deliverables was audited by the 2nd EQE Prof. Vesna Spasic Jokic, who was granted access to the deliverable, following a methodology that was discussed with the Project Quality Committee. According to this, the deliverables were evaluated against four criteria:

- Relevance to the project objectives
- Scientific and/or Educational Soundness
- Impact that they can induce during the project implementation and beyond
- Sustainability potential

The outcome of the evaluation was categorized in each of the criteria in four categories: “inadequate”; “low”; “high” and “very high”. Deliverables that do not constitute an open resource and are intended only for internal consortium use were not assessed and marked “N/A”. Some deliverables were assessed in their full, yet not final form. These deliverables are indicated by an asterisk.

The evaluation of the project deliverables is presented in Table 1:

#	Title of the Deliverable	Relevance	Scientific/ Educational soundness	Impact	Sustainability potential
1.1	In-depth desk research assessment and report for Albania and partner HEIs	Very High	Very High	Very High	High
1.2	Development of questionnaire and interviews with relevant stakeholders and creation of the competence matrix	N/A	N/A	N/A	N/A
1.3	Report on the best practices in Program HEIs and global trends	Very High	Very High	Very High	Very High

1.4	Job/domain analysis and development of guidelines for learning outcomes for VET and bachelor new and updated study programs	Very High	Very High	Very High	Very High
2.1	Design of the new VET degree in Electrical Engineering and Renewable Energy	Very High	Very High	Very High	Very High
2.2	Design of the 6 new courses for existing relevant bachelor study programs	Very High	Very High	Very High	Very High
2.3	Preparation of application documents and the licensing and accreditation of the new VET degree created at Partner HEIs	N/A	N/A	N/A	N/A
3.1	Design, development and deployment of e-learning courses	Very High*	Very High*	Very High*	Very High*
3.2	Capacity building for Partner HEIs teaching staff in micro learning, project-oriented teaching (new teaching methods) and gaming	Very High	Very High	Very High	Very High
3.3	Creation of the ENGINE online platform	Very High*	Very High*	Very High*	Very High*
3.4	Creation of the new teaching material for laboratory work	Very High	Very High	Very High	Very High
4.1	Evaluation Plan	Very High	N/A	High	High
4.2	Internal evaluation reports	N/A	N/A	N/A	N/A

4.3	External evaluation reports	N/A	N/A	N/A	N/A
5.1	Setting up and maintaining the project Web site (including project visual identity – logo)	Very High	Very High	Very High	Very High
5.2	Consolidation of Dissemination and Exploitation Strategy	Very High	Very High	Very High	Very High
5.3	Two papers on project activities and results published in relevant scientific magazines and/or presented at relevant international conferences	Very High	Very High	Very High	Very High
5.4	Organizing 4 dissemination events with relevant stakeholders (workshops, info days)	Very High	N/A	Very High	Very High
5.5	Final International Project Conference in Tirana	Very High	N/A	Very High	Very High
5.6	Creation of the financial and institutional sustainability strategic plan	Very High*	N/A	High*	Very High*
5.7	Sustainable cooperation with labour market	Very High*	N/A	High*	Very High*
5.8	Creation of the partner network between all institutions involved in the project	Very High*	N/A	High*	Very High*
6.1	Steering Committee and Advisory Board establishment	N/A	N/A	N/A	N/A

6.2	Partnerships agreement signature and Management Plan	Very High	N/A	Very High	Very High
6.3	Progress and final project report	N/A	N/A	N/A	N/A

Table 1. Quality Assessment of the Deliverables of the ENGINE project.

5. Conclusions

ENGINE project managed to fulfil its goals and achieve impactful and sustainable results during the 3 years of its implementation.

External evaluation results show a great degree of success for the project activities, while recommendations on deliverables quality were mitigated during project implementation and recommendations after field visits were discussed during transnational project events, namely the Workshop held in Durres in June 2023 and the Final Project Meeting.

For EQE1

Prof. Evangelos Hristoforou

For EQE2

Prof. Vesna Spasic Jokic