

Sustainability Plan for ECO-CAR project

WP-7

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Jordan University of Science and Technology

Mutah University LTD

Tafila Technical University

Al-Balqa Applied University

Al-Hussein bin Abdullah II Technical University

Applied Science University

Al-Zaytoonah University of Jordan

Technische Hochschule Ostwestfalen-LIPPE

Rheinisch-Westfaelische Technische Hochschule Aachen

Universidad de la Iglesia de Deusto Entidad Religiosa

Budapesti Muszaki es Gazdasagtudomanyi Egyetem

National Technical University of Athens - NTUA

Universita Degli Studi Dell'aquila

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1 Introduction

The main objectives of the ECO-CAR project are to design demand driven programs in the field of EV/HEV satisfying industrial and economical needs of Jordan and provide a platform for students to gain skills and life long careers. Further it will increase the employability of Engineers in Local and International Market through training them on the needed skills in the field of EV and HEV. Enhance the quality of available vocational training provided by the vocational training centers, through employing the trained engineers in those centers; Partners will seek signing cooperation agreements with these training centers. Another objective is to improve the level of provided services for repairing and maintaining electric and Hybrid vehicles in Jordanian enterprises and help to move Jordan forward to become a host for Electrical and Hybrid vehicles industry in the future. University enterprise cooperation is another by-product of this project where students and faculty can have a workplace internships and services in vehicles companies. Globally this project will help in lowering harmful emissions of conventional vehicles in the transportation sector.

ECO-CAR aims to enable Jordanian universities face the “fourth industrial revolution challenge” by modernizing their ‘WV/HEV’ curricula and offerings, developing and implementing sustainable certificates/ degree programs, building staff capacity and enhancing the awareness of the EU support and promote technical and cultural visibility of the partners.

The below will explain the main outcomes of this project:

1. Develop, integrate, accredit and evaluate some courses, certificates, diplomas or degree programs with an appropriate practical component in EV/HEV at Jordanian partner universities that are in-line with the Bologna requirements.
2. Engage faculty and engineers in the development of interactive instruction techniques for lectures, laboratory courses, and sharing experiences with EU partner universities.
3. Develop and implement course contents using distance learning.
4. Extend services and training in collaboration with the local and regional industry and community.
5. Improve the human capacity of Jordanian by providing training and upgrading opportunities in the EU for aspiring academic members especially females and technical staff.

The sustainability plan lays out a road map to guide us toward building responsible academic courses EV/HEV with adequate and reliable outputs. Building that future will require not only long-term actions, but also immediate actions and investments that will help to fulfil the short-term jobs required to satisfy the demand needed by EV/HEV businesses and establish the clean energy industry. However, courses that follow along term sustainable plans that will be more successful and competitive than others. As the world of academics becomes ever more competitive on labor market, sustainability will become important not only for success but also, eventually, for survival. This plan will give power to the ECO-CAR project through initiatives that are technically impactful, environmentally accountable and economically justifiable.

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2 Elements of the Program

Having sustainable project elements and processes will lead to a sustainable program. Thus, we need to ensure the sustainability of the derived programs, key components and processes. To do so, we need first to identify the key elements and processes of the proposed programs. The following are the main elements:

1. Location, logistics and labs
2. Academic Staff
3. Students
4. Curriculum
5. Stakeholders

2.1 Location, logistics and labs

To secure sustainability of the above elements, the courses should run at each partner university simultaneously. The commitment of each university toward the program will guarantee and secure a location to host the program. At the same time, performing the accreditation process of the selected programs at all partner universities; will grant the approval and the commitment of all administrative levels in the universities toward the program. Thus, each partner university will provide the required logistics for the new programs in the same manner as the other running courses at the university. This will add minimum cost on each university toward the new courses.

Furthermore, new lab equipment for the project should take into consideration the real need for the program. Each partner university from Jordan will select the labs equipment in such a way to strengthen the courses, allow offering increased training opportunities for the faculty, staff and students. It also should enable students to continue producing visionary work. Thus, we will carefully select the lab equipment to satisfy the academic needs with proper demonstration and satisfy the workplace needs. It also should take into consideration the type of research activity that students can use to carry out some of their hands-on training and research projects. Finally, partner universities will use this equipment as training benches to improve capacities of students on state-of-the-art technologies and systems related to the program.

2.2 Academic Staff

Professors are key elements of any academic program. They educate future leaders by providing ECO-CAR courses in engineering research and education. This includes continued improvement of the undergraduate curricula for education of a new breed of EV/HEV specialist. The graduated students should possess not only a strong knowledge of fundamentals, but also the knowledge required for broad applications and an understanding of technical and research

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issues that determine sustainable and technological choices. The faculty members should be aware that their tasks must include

- Commitment to provide students with fundamental knowledge within the main courses topics, and at the same time, broaden the curriculum by introducing new courses and real examples with continuing focus on professional team projects.
- Establish faculty task force to develop curriculum that fulfil project objectives.
- Develop courses elaborated on the base of local needs and state of the art technologies, and accredited following Bologna requirements including E-learning courses.

To achieve these goals, partner universities will link ECO-CAR program to the already offered “sustainable” programs within its academic and community based programs.

2.3 Students

To achieve sustainability for the student element, we need to insure the enrolment of the maximum number of students at all times. The accreditation committee will determine the program student-capacity according to the number and free faculty members who are involved in the program. To ensure that, we need to attract students to the program by:

- Creating a more welcoming and diverse community through Info days, seminars and advertisement. This part is in process now and will continue.
- Promote increased interaction between undergraduate students and different labor market to be a primary contributor to the environment researches.
- Enhance the partnership with private sector

2.4 Curriculum

In order to have curricula that help in having sustainable courses, it must have the following characteristics:

1. Must be flexible to adapt the changes in the labor market.
2. Courses must be interactive; reviewed every year through clear and preset mechanisms
3. Must utilize all elements of available sustained program. This means to enable the students to take it as a by-product of their degrees or a certified program also to allow them to complete higher education in any other field.
4. The practical component of the program needs to meet the industrial expected outcome and the teaching of the theoretical part needs meet the requirements of an updated sustainable learning outcome.

2.5 Stakeholders

To ensure the sustainability of the program, the project seeks to maintain high quality staff and hire professional technical and administrative specialists. Moreover, a long-term stakeholder engagement plan is necessary: such plan will focus on:

- Building a justifiable communications plan between the academia and stakeholders.

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- Develop marketing tools in collaboration with admission departments supporting ECO-CAR participants and relevant industry
- Prepare and market short courses, industry-based certificates, diplomas and built-in curricula as part of project's outcomes in collaboration with private sector.

The project aims to obtain this plan through:

- Activating the National and International Network (NIN) developed through the project.
- Having members of stakeholders. within the collage councils at faculties hosting the program
- Having a task force from faculty members and members representing the private sector to continuously review outcomes of the program and propose updates to its contents and delivery scheme. They even may recommend market driven changes.
- Maintain links with EU partners to build on the outcomes of this project and continuously share experiences.