Challenge Driven Learning
EU Renewable Energy Project

Sustainable Energy Provision
Zimbabwe

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Content:

EU-ZM Project and Partners

Digital Challenge-Driven Circular Energy Transition Learning Collaboration Between EU and Zimbabwe

(EU-ZW)

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Introduction

- This is a project which involves Five Higher Education Institutions (HEIs) in Zimbabwe (NUST, UZ, CUT, LSU, MSU) in collaboration with two HEIs, and one SME, in EU in the "Erasmus+ CBHE" project.
- The project will re-use the framework and learning material developed from three earlier CBHE projects while developing/implementing new courses and programs adapted for local conditions..
- These courses will enhance the modernization process of the Zimbabwe HEIs.
- A challenge-driven student-centered flipped classroom approach in which innovation and entrepreneurship will take a predominant role.

Subthemes

- The Project is built around the following work packages Identified in four main parts:
- Part 1: Preparation and Continuous follow up
  - WP01-Project Management
  - WP02- Learning resources quality improvement process
- Part 2: Preparation of Educational Resources
  - WP03: Refreshment of Course Structure as Proposed in the Application
  - WP04: Development of Program-Specific Theoretical Learning Resources
  - WP05: Development of Challenges & Case Studies
  - WP06: Development of Remote & Virtual Laboratories & Simulations

Subthemes Continued

- Part 3:Implementation of Educational resources into partner curricular
  - WP07: Implementation of Programs and Courses into the Partners Curricula
  - WP08: Certification and Double Degree Processes
- Part 4: Outreach & scalability:
  - WP09: Development, Documentation and Training of “Train-the-Trainers” Modules Adapted to Local Conditions (include Round-Table Forum (Local and Global) of Business & Society Leaders)
  - WP10: Impact and Dissemination

WPO5- Challenge Driven learning

- Challenge Driven learning entails learning while solving real world problems
- Industrialists were invited and these have Energy Provision sustainability Problems,
- The task at hand was for Industry to identify those challenges and share with us .
- Lecturers and students would need data from Industry to solve those problems while learning skills around the Challenge
- The energy demand in the country is currently not being met sustainably and this is the challenge the industry is facing.
- Non-renewable energy resources in use are causing climate change & are unsustainable.
- Presentations on Industrial Sustainable Energy issues were needed and given.

Challenge Driven Learning (CDL)

- This is an effective framework for learning while solving real-world Challenges
- Stakeholders, Industrialists, Min Of Energy, ZERA were consulted to help co-create that learning experience needed
- Their challenges were given and were to be used to learn and make decisions inside and outside of the institution
- These challenges will push the Universities to go above and beyond.
- These challenge will also facilitate creative and divergent thinking
- They Will also give a purpose to design, code and make
- They Will prepare learners to make a difference now and in the future.
- They Will allow full participation and reflection.

Knowledge (K) Intended Learning Outcomes

At the end of the Sustainable Energy Provision Challenge, the students should be able to :

- Define sustainability and describe the perspective used to identify solutions for improving sustainability
- Collect information from various sources, including new media and select the most important and relevant to use in their documentation
- Come up with a framework used in sustainable energy provision with clear connections between proposed actions and expected impact
- Use a multidisciplinary approach and identify sustainability problems in the energy provision
- Develop viable science-based solution options that promote access to affordable, reliable and sustainable energy for all

Skills (S) Intended Learning Outcomes

At the end of the Sustainable Energy Provision Challenge, students should be able to :

- Challenge existing knowledge boundaries and design novel solutions to problems
- Describe and explain the procedures followed and how the proposed solutions can be implemented
- Illustrate the implementation of the proposed measures and show how these will improve the sustainability in energy provision in Zimbabwe.
- Compare the solutions proposed by the facilities to be implemented with the solutions already being implemented

Competence (C) Intended Learning Outcomes

At the end of the Sustainable Energy Provision Challenge, students should be able to :

- Evaluate the efficiency of the solutions proposed by the energy provision facilities both from the perspective of the business (using financial data) and from the perspective of the consumers and Environment (illustrating how the proposed measures will impact the consumer and Environment)
- Use the information gathered so far to generate a business plan responsible for a sustainable energy provision project (create)