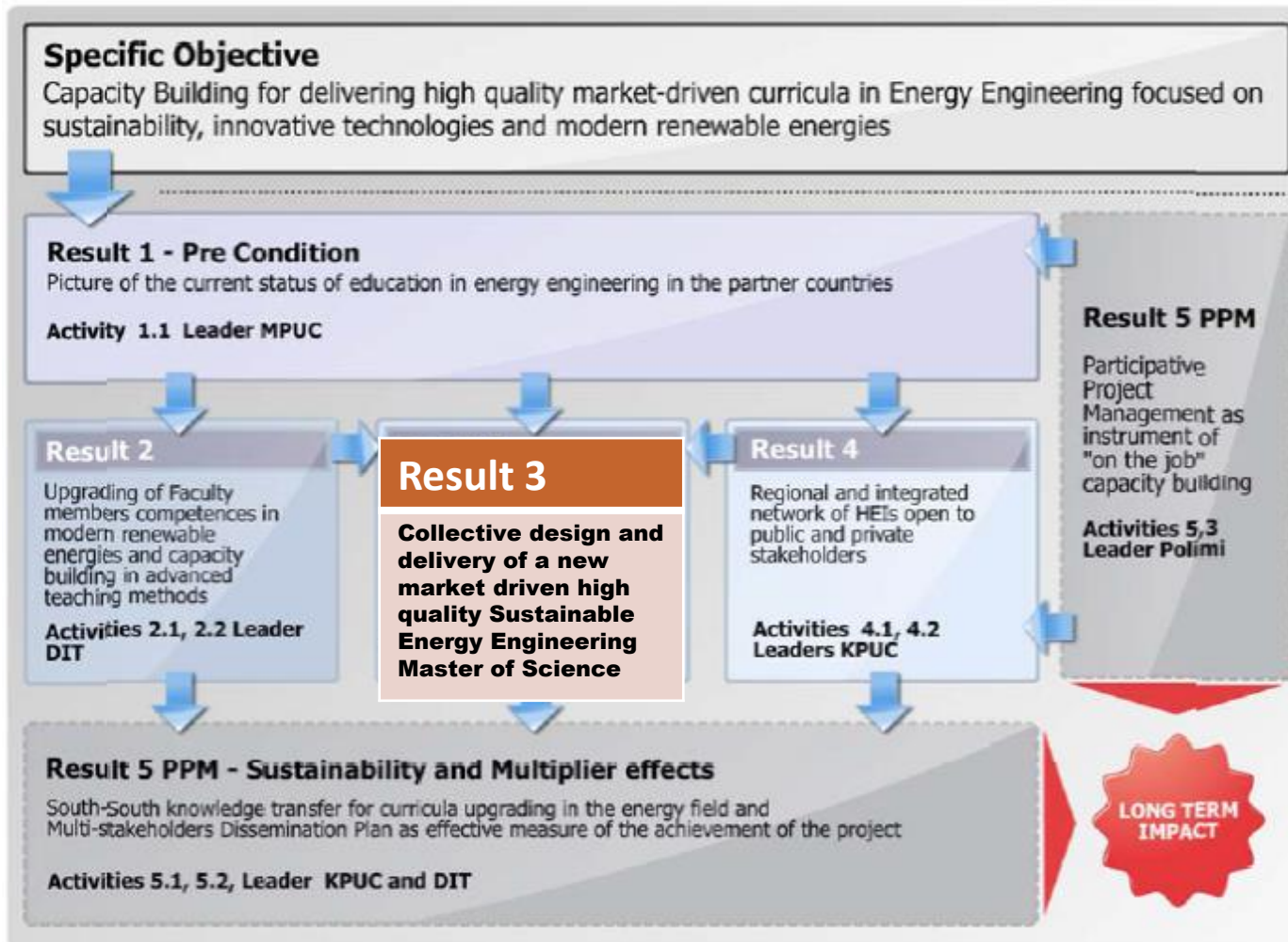


ENERGISE - Expected Result 3

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Activity 3 link with other activities



Result 3 Activities Flow

Action/Month	4	7	12	14	16	18	21	25	30	35	40	41	42
3.1		█	█	█	█	█	█	█	█	█	█	█	
3.2					█	█	█						
3.3				█	█	█							
3.4					█	█	█	█	█	█	█		

3.1 Joint curricula development

Joint Curricula Rewriting: Harmonization of level description and competences

Development and review of syllabus

Consultation with stakeholder

3.2 Facilities upgrading with appropriate technologies for teaching laboratories in energy Engineering

Updating (for appropriate energy technologies for DGSs)

3.3 Identification and set up of a Quality control System for Teaching

Set up of evaluation processes: students learning by teachers and teaching methods by Students

Students evaluation process and Teaching evaluation process set up (by Teachers and Students)

Employers evaluation process set up

3.4 Pilot Launching of the MSc in Sustainable Energy Engineering

Pilot delivery of the MS in Ethiopia

Staff Exchange

Curricula and syllabus coherence check during pilot phase



Expected result: Collective design and delivery of a new market driven high quality Sustainable Energy Engineering Master of Science is realized

3.1 Joint curricula development

- *Leader:* JU
- *Participants:* POLIMI, DIT, TUK, TUM, Associated Partners
- *When:* from 10 Apr 2014 to Apr 2017 (month 7 – month 42)
- *Output:* 1 document reporting with the new shared curricula and syllabus is ready and published on web.
- *Description:* The focus is on the development of a new approach to prepare and update curricula on Master of Science on Sustainable energy engineering in order to be relevant in the region, respondent to the market demand and to the social needs. Activities are split in 2 phases: the first before the start of the pilot, the second at its end.



(...continued)

3.1 Joint curricula development

Joint Curricula Rewriting:
Harmonization of level
description and competences

Development and
review of syllabus

Consultation with
stakeholder



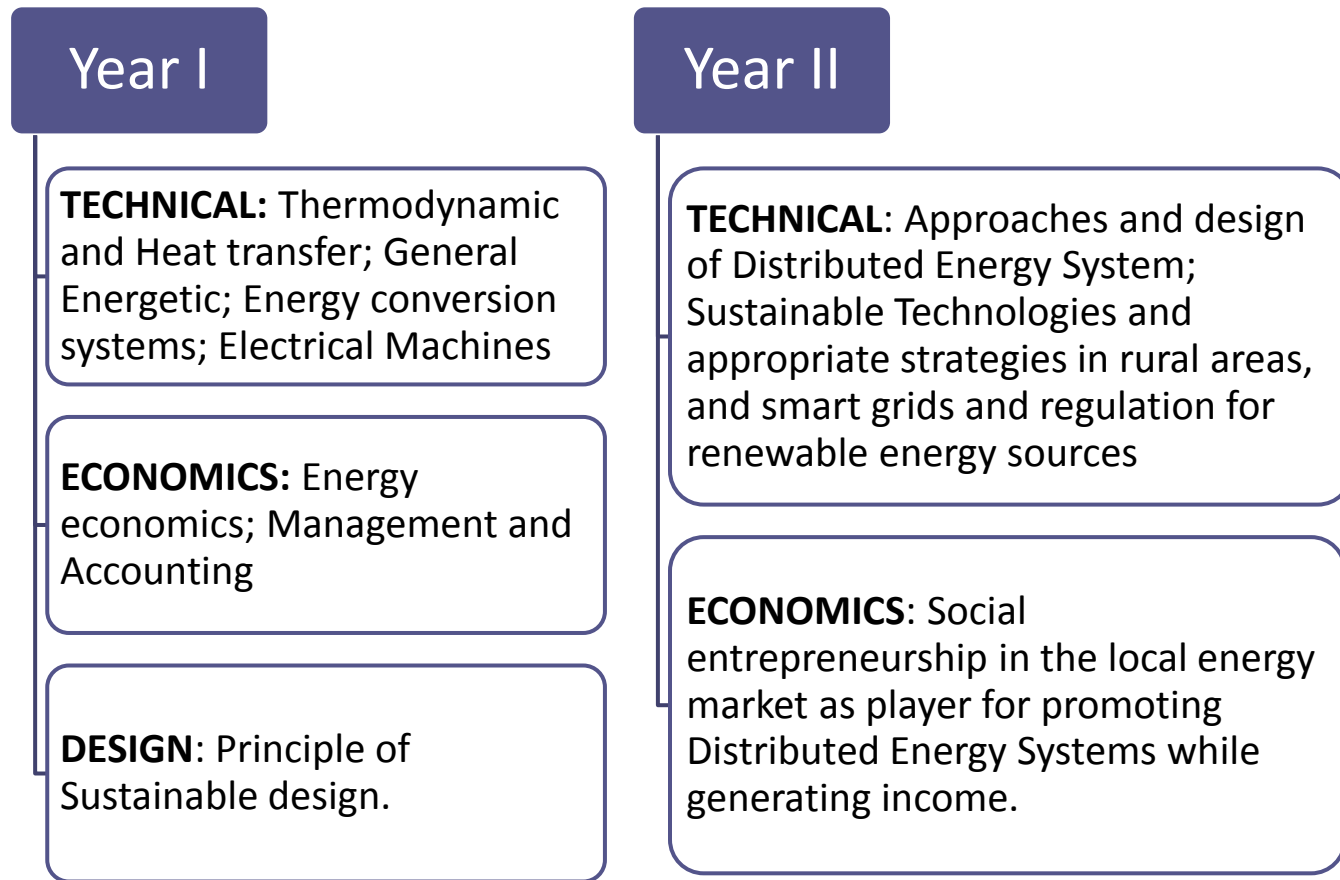
3.1.1 Joint Curricula Rewriting: Harmonization of level description and competences

Based on the outputs from activity 1.1 and 1.3, a new harmonized curricula will be defined by the partnership that could be later “customized” depending on the specific needs and potentials of each country-HEIs.

General Frame work is divided in to two as first year covers courses of energy fundamentals divided in three areas as TECHNICAL, ECONOMICS AND DESIGN while year II is dedicated to the specialization courses.

General Frame Work of the MS curriculum

(...continued)



(...continued)

Detailed curricula and syllabi will be a part of the output of this activities after joint assessment and joint discussion with local partners.

A Master thesis will complete the course.

Thesis will be planned in order to enhance the development of new synergies between HEIs and private stakeholders, through strong applicative approach. Twinned thesis will be supported.

Activities to reach this goal will be mainly delivered and shared through the web platform by the use of synchronous and asynchronous tools. Periodically the team will meet online and will take profit of project meeting or other events “in presence”



3.1.2 Development and review of syllabus

New syllabus will be defined based on the outputs of activity 3.1.1 and the previous assessments (1.1, 1.2).

A strong participative approach will be ensured by the project management approach and the peer-to-peer review that will be performed through the web-platform. Periodically the team will meet online.

3.1.3 Consultation with stakeholder

At the end of each period of activity dedicated to curricula and syllabus, the draft copy of the curriculum will be examined together with stakeholders, companies in particular, with the aim of enforcing the knowledge alliance between University and Business.

3.2 Facilities upgrading with appropriate technologies for teaching laboratories in energy Engineering

- *Leader:* POLIMI
- *Participants:* DIT, TUK, JU, TUM, Informed Associated Partners
- *When:* from 10 Jan 2015 to 10 Jun 2015 (month 16 – month 21)
- *Output:* 1 didactic laboratory in each partner HEIs
- *Description:* This activity is necessary to ensure a basic but proper access to didactical and collaborative tools.



3.2.1 Updating (for appropriate energy technologies for DGSs)

This activity will consist of the definition of necessary tool-kit of energy technologies samples to ensure a concrete approach to didactics.

In each partner HEIs involved, a basic laboratory will be created or updated, based also on results of activity 1.1.3.

A small budget is dedicated to this laboratories, but looking also at the presence of future potential donors. POLIMI will set the basic supply.

3.3 Identification and set up of a Quality control System for Teaching

- *Leader:* JU
- *Participants:* POLIMI, DIT, TUK, TUM, informed Associated Partners
- *When:* from 10 Nov 2014 to 10 Jul 2015 (month 14 – month 21)
- *Output:* The quality system set up is updated and ready to be tested
- *Description:* The focus is on the definition of a Quality System for monitoring and reporting. Different levels of evaluation are considered with an internal and external levels. **The internal level** is with the involvement of students and teachers while the **external level** involves stakeholders (employers) invited to participate to the process.

(...continued)

3.3 Identification and set up of a Quality control System for Teaching

Set up of evaluation processes: students learning by teachers and teaching methods by Students

Students evaluation process and Teaching evaluation process set up

Employers evaluation process set up

3.3.1 Set up of evaluation processes: students learning by teachers and teaching methods by Students

Academic standards accepted in all HEIs partnership will be defined through workshops, consultations and web platform . The standards agreed will be bound into the Credit Transfer Document and issued to the applicant, the partners and the associates to enhance ownership.

A particular attention will be paid on the coherence with Bologna and Copenhagen process priorities and with the European qualification framework (EQF) to establish a system respondent to the need of competences and not only knowledge.

3.3.2 Students evaluation process and Teaching evaluation process set up (by Teachers and Students)

Evaluation approach and tools will be clearly defined through meetings. Students knowledge and learning outcomes will be assessed by teachers while students evaluate, through questionnaire, the teaching quality and common policy of evaluation available to teachers. Representatives of students will be involved in the process as active players.

3.3.3 Employers evaluation process set up

Employers will be invited to evaluate the coherence of standards of performance of graduates with labour-market needs. Feedbacks from employers will be compiled into a document for reporting of findings. ►



3.4 Pilot Launching of the MSc in Sustainable Energy Engineering

- *Leader:* JU
- *Participants:* POLIMI, DIT, TUK, TUM, Informed Associated Partners
- *When:* from 10 Jan 2015 to Apr 2018 (month 16 – month 42)
- *Output:* 1 complete cycle of the improved Master of Science, new professionals are ready for the market
- *Description:* The Pilot edition of Master of Science will be delivered in Ethiopia during the second year of the project lifecycle. The Master will be monitored in order to verify if it is respondent to expected results and defined standards (coherently with Bologna and Copenhagen Process priorities, and EQF standards for level 7 - Master). During the pilot, based on findings of monitoring processes, correctives will be implemented where necessary. All the results obtained and the experience reached will be analyzed in depth and formalized in terms of Practice to be shared in partnership and interested ACP countries in the future.



(...continued)

3.4 Pilot Launching of the MSc in Sustainable Energy Engineering

Pilot delivery of the
MS in Ethiopia

Staff
Exchange

Curricula and syllabus
coherence check
during pilot phase



3.4.1 Pilot delivery of the MS in Ethiopia

Starting from the second year of the action, the existing Master of Science delivered by JU will be improved with updates of previous activities outputs and it will be used as an ongoing test of implementations shared with the partnership.

Only monitoring and extra-supporting actions will be taken in consideration as possible costs, as for activities in 3.4.2 and 3.4.3.

3.4.2 Staff Exchange

POLIMI PhDs will have a central role in knowledge transfer during teacher trainings and master deliveries to prevent the initial teachers shortage.

4 “seed research founds” will be promoted in order to strengthen joint research to enforce African and European synergies which also creates an opportunity for researches jointly defined with companies, open to the labour-market needs.

3.4.3 Curricula and syllabus coherence check during pilot phase

Control the coherence of the curricula and the syllabus in order to balance learning outcomes and students efforts. A set of surveys will be periodically distributed to teachers and students to verify the expected results of the **pilot delivery of MS in Ethiopia**. The faculty will be then involved in meetings to discuss the obtained results. Moreover, the team will meet online to discuss about results, problems and solutions identified. This activity is strongly related with result 5.



OVI

- Harmonized curricula for the Master of Science in Energy Engineering
- Students answering the quality questionnaire > 70%
- Staff answering the quality questionnaire > 70%
- Increase number of trainees/stagiaires to private sector and regulatory bodies compared to baseline > 20%
- Student and Staff Exchange > 2 per HEIs involved
- New and updated teaching material in more than 6 courses

Critical elements/Relevant considerations

- The needed assumptions are:
A shared vision on the approach to the problem of access to energy; absence of major socio-economic urgency that may oblige HEIs to keep strong attention to the local situation.

