



Training methodology

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Summary

This document has been prepared in order to define and describe the training activities envisaged in the URESA project. COMU Turkey coordinates the development of the training methodology as part of work package 4 "update and development of training content". Contributions from other partners are necessary in the area of responsibility for creating national training content.

Training activities are designed to ensure the correctness of the materials being developed, to adapt them to the needs and responses of interested parties and to create a critical mass in the scope of training activity on renewable energy sources (RES).

This methodology summarizes information on the training methodology in the URESA project, which is a combination of modules presented on the Internet platform, the purpose of which is to help partners, interested institutions and other parties implementing online courses based on URESA project achievements.

Chapter 1: Introduction, explains in detail the subject of this methodology, how training activities will be developed, and also presents didactic and methodological structures.

Chapter 2: Selection of user groups, clarifies the procedures for identifying user groups. Explains how a group of users should be chosen and what properties should be characterized. The characteristics of the trainees, competences and skills are defined.

Chapter 3: Modules, refines the training structure, topics of modules and the specificity of learning.

Chapter 4: Materials, presents types of materials and documentation that will be created and will be used during the training.

Chapter 5: Indicators of success. Various criteria adapted to assess the results of the course through training activity.



1 Introduction

The adult education presents a specific views about learning and teaching based on the assumption that adults can and want to learn, that they are able and willing to take responsibility for that learning, and that the learning itself should respond to their needs. Educating adults differs from educating children - adults have accumulated knowledge and work experience which can add to the learning experience.

The adult education makes the following assumptions about the design of learning:

1. Adults need to know why they need to learn something,
2. Adults need to learn experientially,
3. Adults approach learning as problem-solving,
4. Adults learn best when the topic is of immediate value.

In practical terms, it means that instruction for adults needs to focus more on the process and less on the content being taught. Strategies such as case studies, role playing, simulations, and self-evaluation are most useful.

The following Adult Teaching Rules should be considered:

- from easy to difficult things,
- from simple to complicated issues,
- from general issues to details,
- from things known to unknown,
- from examples to abstraction and how adults learn.

The training methods will be adapted to the age of the trainers, their abilities, learning experience and working conditions. Adults need more material repetitions, smaller portions of material and frequent breaks between successive lessons.

Vocational training requires knowledge that is specially prepared and divided into fragments. The volume of fragments of training material should be properly selected for the group of learners. Material appropriately structured and logically connected is absorbed much better. Age-induced changes are neither as great nor important as to exclude adults from teaching. It must be remembered, however, that the methods of education must take into account memory characteristics, which are different than in other age groups.

1.1 General training methods

Two main goals should be defined in order to prepare training:

- a defined training structure,
- methodology for the development of training materials.

Training activities contribute to the professional improvement of the entities involved. Training within the framework of the URESA project is characterized by:

- a simple form,
- friendly access,
- easy start of learning,
- possible integration between modules,
- targeted material, support and help,
- adaptation for adults and professionals,
- matching the design of training modules,
- providing constant support and guidance,
- providing step-by-step access to scientifically tested materials.



It is essential to determine the structure and methodology that will be most effective for a specific training environment, taking into account the following factors:

1. **General learning objectives:** what is expected to achieve through training? In our case, training resources will support the transfer of know-how and innovation by acquiring new skills and qualifications for farmers, farm workers and employees in the agricultural sector. The training will place special emphasis on strengthening the position of RES in context of creativity and innovation to teach new technologies and methods for agro-RES production to develop new services to encourage participation in emerging economic experience. For this purpose, existing pedagogical materials will use photos, relevant videos, knowledge of teaching experts and books.
2. **Who needs training:** categories of learners that will increase the efficiency of training and economic efficiency. In our case, training is needed for breeders and farmers, agricultural advisors, people running a business, energy suppliers.
3. **Expected training results:** what each trained person should be able to do and know at different levels and after the training. Depending on the level of training intensity and module content, knowledge of RES, benefits of renewable energy for agriculture, benefits from renewable energy for the environment, basic energy information and issues related to electricity - methods of energy production and distribution are expected from the training participants.
4. **Scope of training methods,** such as intensive direct meetings, provision of reference materials, on-line training. As part of the URESA project, the consortium decided to stay on-line training as providing the easiest access to training materials.
5. **The final test** assessing the learner's knowledge and the satisfaction of the completed course will take place in order to evaluate the results of the training.

The on-line training program provides:

1. Competence to analyze and identify needs in the context of conducted activities in the context of renewable energy, taking responsibility for planning farm development, preparing a waste management plan, selecting the right type of biomass available on the farm and being usable, preparing a plan and range of geothermal use of the farm, choosing the right plan and scope of solar energy generation, preparing the plan and scope of wind energy use within the farm, preparing the plan and range of energy use from water, preparing the plan and scope of obtaining agricultural biogas and using energy from agricultural biogas.
2. Components of professional training that integrate European data and development into local activity organizations.
3. Opportunities to develop practical skills and abilities in the field of lifelong learning adapted to the conditions of the rural environment.

The completion of the on-line teaching process will be the certificate of completion of the course within the framework of the URESA project.

1.2 Training objectives

The main goal: to raise the level of competence of employees of the agricultural sector in the field of renewable energy.

Individual goals:

- support for knowledge about renewable energy,
- support for entrepreneurship in rural areas,
- increase in farm profits,
- promotion of EU policy on renewable energy,
- promotion of know-how in relation to RES,
- support for improving the efficiency of farms and companies in the agricultural sector,



- support for innovation transfer to farms and companies in the agricultural sector,
- support for actions aimed at improving life in rural areas,
- employment support in rural areas,
- development of new professional skills (services and maintenance of infrastructure related to renewable energy),
- support for innovation in rural areas,
- support for environmental awareness.

All training materials must contain information useful for the inhabitants of rural areas. It is emphasized - as a guideline that training materials must focus on modern technologies in the context of agricultural activity. After completing the course, learners should get a solid improvement in the skills of solving problems and making decisions in the aspects related to renewable energy in an agricultural holding.

1.3 Training conditions

Each partner will ensure availability of the module version developed / updated in English and the national language. All modules will be available for testing during the pilot test session and it is highly recommended to have the test of additional modules available depending on the participants' interest. To consider someone as a trained person, it is obligatory for the learner to read and pass the assessment test from: general module + 2 additional modules.

1.4 On-line environment

The volume of training materials should contain an upper limit on the amount of text in the form of 30 pages of A4 format in a horizontal layout (about 260 words per page, Trebuchet MS typeface 12 points). The lower volume limit is set at 20 pages. In order to ensure appropriate attractiveness of training materials, they should contain from 2 to 5 interactive illustrations / photos / schemes. Technical guidelines for the environment are given in the relevant templates.

1.5 Expected results

The courses are created with the intention of providing an intense and interdisciplinary online work sequence. At the end of the course, the participant should be able to:

- freely use the URESA educational environment and learn from it through daily activities,
- operate knowledge about procedures related to renewable energy transfer knowledge about renewable energy acquired through the URESA platform to other interested parties.



2 Selection of user groups

2.1 Analysis of needs

Training activities carried out within the framework of the URESA project meet the wide spectrum of target groups related to the agricultural sector. Research carried out as part of the project determines the users and their knowledge in relation to renewable energy in the farm. The conclusions are as follows:

1. All partner countries have adapted the European Qualifications Framework for vocational training. Taking into account the needs analysis report, it is recommended to follow the EU guidelines and the results of the needs analysis closely.
2. The form of training materials should be developed through standard LMS technologies, multimedia elements, Web 2.0 technologies, mainly social networks. In terms of content, the processed information should be short, clear and relevant.

The second part of the study was carried out in partner countries. The respondents to the surveys were selected from two groups - RES specialists, for example employees of energy agencies or RES research centers and people from the agro sector with or without very limited experience in RES. The experts' experience included, for example, the construction of renewable energy installations or the preparation and implementation of educational activities related to RES. As part of the study of the target group, managers of companies and companies operating in the area of biogas, politicians and researchers were surveyed. Respondents in particular underlined the positive impact of using renewable energy sources, such as diversification of primary energy sources, increasing the energy self-sufficiency of the institution or, in the case of biomass, more effective waste management.

From the point of view of educational activities, the analysis confirmed positive responses obtained during the survey. Respondents stressed the need for formal and informal education in the field of renewable energy, with particular emphasis on up-to-date, short and accurate information, supported by case studies and examples of good practice. Appropriate forms of education have been listed as e-learning courses with specialist assistance, 'case studies' and presentations of examples of good practice.

As problematic factors of education and practical implementation of the acquired knowledge, the respondents indicated above all the lack of time and the lack of really valuable training / activities. In addition, respondents emphasized the need to support these educational activities that enable learning for people who have little time.

2.2 Learners

Our target groups are farm owners taking part in the work of their farms; self-employed; employed as managers of animal and vegetable farms, animal breeders, rural entrepreneurs, energy suppliers. Considering the interest shown during the needs analysis, the partners have determined the number of trained people at the following levels: PL-40, SK-20, BG-20, TR-50. The total number is 130 trained (the minimum assumed in the project application is 120).

The training is open to all interested renewable energy sources.

Conditions for participation in the course:

- completing the general course,
- completing the form specifying the RES experience.

Conditions for participation in the course:

- completing the general course,
- completion of the evaluation questionnaire.



3 Modules

3.1 Training structure

The aim of the training is to provide participants with the required knowledge and practice based on resources created as part of the URESA project.

The results of the State of the Art analysis confirmed the main assumptions regarding the necessity of development of the content about renewable energy sources. An important message is that during the development and of materials, the focus should be on the needs of small farms. In connection with the above, training materials should be adjusted to the needs of target groups. According to joint decisions made by partners, all materials must be developed in the context of the needs of rural residents, must provide the latest knowledge and information.

Training materials should be in compliance and in relation to the guidelines contained in the European Qualifications Framework (EQF).

Learning outcomes:	Statements about what the learner knows, understands and can do after completing the learning process, included in terms of knowledge, skills and competence.
Knowledge:	The result of learning information through learning. Knowledge is a set of facts, principles, theories and practices related to the field of work or study. In the context of the European Qualifications Framework, knowledge is described as theoretical and / or factual.
Skills:	Ability to apply knowledge and use know-how to perform tasks and solve problems. In the context of the European Qualifications Framework, skills are defined as cognitive (including logical, intuitive and creative thinking) and practical (covering the efficiency and use of methods, materials, tools and instruments).
Competences:	Proven ability to use knowledge, skills and personal, social and / or methodological abilities, at work or in science as well as in professional and personal development. In the context of the European Qualifications Framework, competences are defined in terms of responsibility and autonomy.

It was considered that level 4 EQF would be appropriate for training participants. Partners are free to adapt the contents of the courses as long as they recognize that a higher level of training is needed.



3.2 Module design

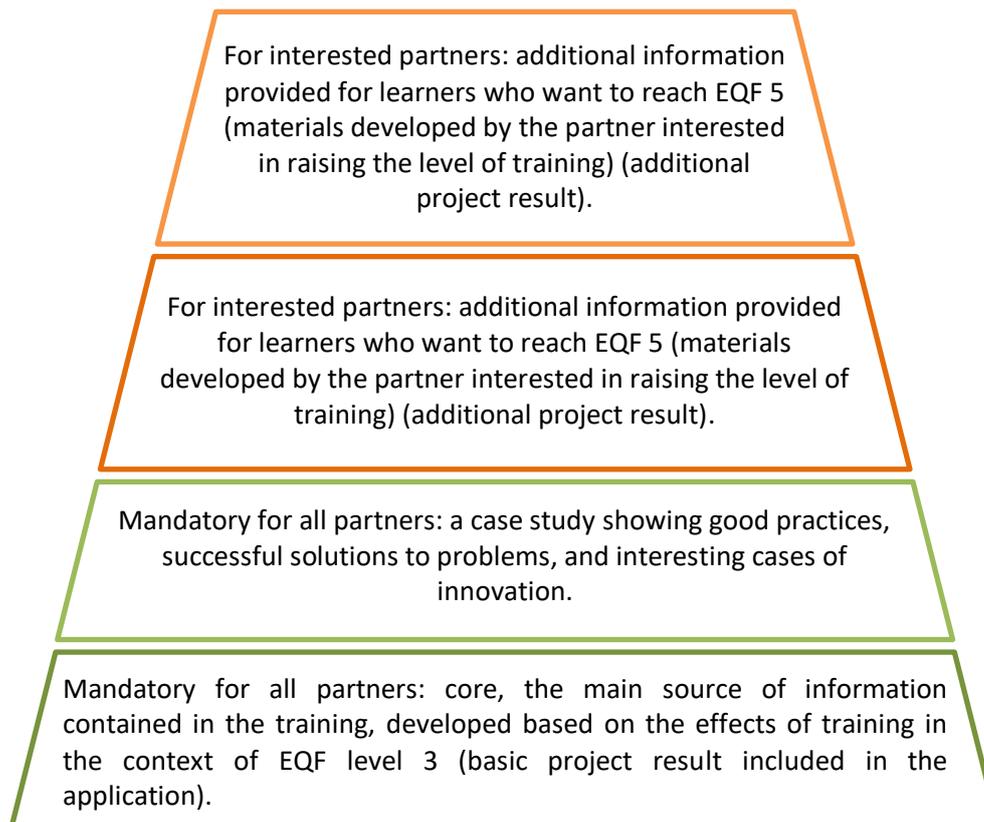
After assessing the needs and level of interest of the participants, it was recognized that the training materials should be easily accessible and adaptable to the needs of learners, taking into account the level of participants' advancement.

MODULE 0 - introduction module
MODULE 1 - module dedicated to biomass
MODULE 2 - module dedicated to solar energy
MODULE 3 - module dedicated to wind energy
MODULE 4 - module dedicated to geothermal energy
MODULE 5 - module dedicated to hydropower
MODULE 6 - module dedicated to biogas energy

Distribution of partners' responsibilities

Module	Name of the module	Partner
0	Introduction module	Association ARID/PL& MODR/PL
1	module dedicated to biomass	Agricultural Institute Stara Zagora /BG
2	module dedicated to solar energy	MODR/PL
3	module dedicated to wind energy	COMU/TR
4	module dedicated to geothermal energy	NewEdu/SK
5	module dedicated to hydropower	BAUN/TR
6	module dedicated to biogas energy	Association ARID/PL

Diagram of the content of modules





Development of the training program:

1. selection of target groups,
2. the title of the module,
3. training effects,
4. training methodology,
5. duration of the training until the tests are passed,
6. evaluation methods.

Each partner sends a training program to the project coordinator before starting the development of training materials.

3.2.1 Intended learning outcomes

International trends in education show a shift from the traditional “teacher-centred” approach to a “student-centred” approach. This alternative model focuses on what the students are expected to be able to do at the end of the module or programme. Hence, this approach is commonly referred to as an outcome-based approach. Statements called intended learning outcomes, commonly shortened to learning outcomes, are used to express what it is expected that trainees should be able to do at the end of the learning period. Addressing the implementation of the Bologna Process by 2010, all modules are expressed using the outcomes-based approach, i.e. in terms of learning outcomes.

Learning outcomes describe what students are able to demonstrate in terms of knowledge, skills, and competences upon completion of a course(s). Clear articulation of learning outcomes serves as the foundation to evaluating the effectiveness of the teaching and learning process.

3.2.2 Preparation of training materials

Common frame for partners serving as a model to develop training materials:

- Information on basic dates and definitions,
- Introduction to the module,
- Basic issues related to renewable energy,
- Characteristics and problems,
- RES installations and their design,
- Environmental aspects,
- Use of renewable energy in rural areas.

MODULE 0 – introduction		
Partner responsible:	Association ARID and MODR /PL	
Task range	Preparation of training materials on: basic RES issues, their use and application, basic terms, values, measures, etc.	
Training effects:	Obtained knowledge (the course participant is able to):	<ul style="list-style-type: none"> - define what the renewable energy is, - indicate benefits of using RES in farms, - describe environmental benefits, - explain basic information on electricity and electricity-related techniques, - classify energy types, production and distribution methods.



	Obtained skills (the course participant is able to):	- apply obtained information about energy, basics of energy production and use in field of own needs and demands.
	Obtained competences (the course participant is able to):	- autonomously analyze and evaluate usefulness of energy types and RES to own needs.
Module resources of the introduction module:		
Introduction module contains:		
<ul style="list-style-type: none"> - information on basic dates, values, measurements used in the power industry; - main Dictionary containing the terminology of all modules; - useful links. 		
The benefits of the introductory module:		
<ul style="list-style-type: none"> - familiarization with the areas of energy and electrical technology; - becoming acquainted with basic values and parameters; - becoming acquainted with energy types and types of energy resources; - talking about ways of producing and distributing energy. 		
Dictionary		
Electricity - basic information, nomenclature, values and measurements		
Transmission of energy.		

<u>MODULE1 –BIOMASS</u>		
Partner responsible:		Zemedelski Institute Stara Zagora/BG
Task range	Preparation of training materials on: the basics of biomass acquisition and use, terms, parameters, values, definitions, descriptions of how it works, information about the latest technological developments in the selected scope of the module. Case study showing the practical use of biomass, advantages and disadvantages of biomass. Waste management.	
Training effects:	Obtained knowledge (the course participant is able to):	<ul style="list-style-type: none"> - define what biomass is, - describe ways of operation, - explain implementation methods, - list benefits of the biomass use, - define technical requirements for the use of biomass, - classify waste management;
	Obtained skills (the course participant is able to):	- choose appropriate methods of biomass production,



	to):	<ul style="list-style-type: none"> - apply tools and materials in the field of biomass production and utilization, - use the waste management, - schedule the plan of implementation the proper use of biomass in their own farm, - calculate profits and risks;
	Obtained competences (the course participant is able to):	<ul style="list-style-type: none"> - autonomously analyze and rate risk level and threats regarding the biomass utilization, - independently assess profits brought by use of biomass and undertake appropriate measures to obtain them.
<p>Module resources of biomass:</p> <ul style="list-style-type: none"> - The basics of getting energy from biomass; - Energy production from biomass; Biofuel; - The farmer as a manufacturer of biomass energy, manufacturer of fuels and electricity; - Use in the context of the changes to the landscape and agricultural practices. 		
<p>Biomass module contains:</p> <ul style="list-style-type: none"> - Text on-line in the form of lessons and knowledge verification elements; - And animations and video; - Helpful links. 		
<p>The benefits of the biomass module:</p> <ul style="list-style-type: none"> - familiarize yourself with the possibilities of the production of biomass and its types; - getting familiar with the issues of energy production from biomass (pyrolysis, gasification, etc.); - read issues of the production of biofuels and synthetic fuels; - to become acquainted with the issues of energy production possibilities and reduction of environmental pollution in the context of agricultural production. 		
Dictionary		
Biomass and its role among renewable energy sources		
Solid biofuels		
Processing of biomass for energy purposes		
Production of electricity from biomass		
Liquid fuels		



MODULE 2 – SOLAR ENERGY		
Partner responsible:		MODR /PL
Task range	<p>Preparation of training materials on the subject: the basics of acquisition and use of solar energy, timing, parameters, values, definitions, descriptions of how it works, information about the latest developments in technology, according to the chosen module.</p> <p>Case studies showing the practical application of the solar energy advantages and disadvantages of solar energy.</p>	
Training effects:	Obtained knowledge (the course participant is able to):	<ul style="list-style-type: none"> - define what solar energy is, - describe ways of operation, - explain implementation methods, - list benefits of solar energy use, - define technical requirements for the use of solar energy,
	Obtained skills (the course participant is able to):	<ul style="list-style-type: none"> - choose appropriate methods of solar energy production, - apply tools and materials in the field of solar energy production and utilization, - schedule the plan of implementation the proper use of solar energy in their own farm, - calculate profits and risks;
	Obtained competences (the course participant is able to):	<ul style="list-style-type: none"> - autonomously analyze and rate risk level and threats regarding the solar energy utilization, - independently assess profits brought by use of solar energy and undertake appropriate measures to obtain them.
<p>Module resources of the solar energy:</p> <ul style="list-style-type: none"> - Basics of obtaining solar energy; - Insolation measurements - methods and instruments; - Thermosolar technologies; - Photovoltaic systems; - Possibilities of using solar energy systems and their application in the agricultural sector. 		
<p>Solar energy module contains:</p> <ul style="list-style-type: none"> - Text on-line in the form of lessons and knowledge verification elements; - Animations and video; - Useful links. 		
<p>The benefits of the solar energy module:</p>		



<ul style="list-style-type: none"> - Familiarize yourself with the basics of the subject matter on the solar power and methods for the measurement of radiation; - Familiarize yourself with the basics of solar related technologies; - Familiarize yourself with the capabilities of the active and passive use of solar energy systems and their impact on the landscape.
Dictionary
Sun
Measurement of insolation
The use of solar energy
Solar thermal collectors
Photovoltaic systems

<u>MODULE 3 – WIND ENERGY</u>		
Partner responsible:		COMU / TR
Task range	<p>Preparation of training materials on the subject: the basics of acquisition and use of wind energy, timing, parameters, values, definitions, descriptions of how it works, information about the latest developments in technology, according to the chosen module.</p> <p>Case studies showing the practical application of wind energy, the advantages and disadvantages of wind energy.</p>	
Training effects:	Obtained knowledge (the course participant is able to):	<ul style="list-style-type: none"> - define what wind energy is, - describe ways of operation, - explain implementation methods, - list benefits of wind energy use, - define technical requirements for the use of wind energy;
	Obtained skills (the course participant is able to):	<ul style="list-style-type: none"> - choose appropriate methods of wind energy production, - apply tools and materials in the field of wind energy production and utilization, - schedule the plan of implementation the proper use of wind energy in their own farm, - calculate profits and risks;
	Obtained competences (the course participant is able to):	<ul style="list-style-type: none"> - autonomously analyze and rate risk level and threats regarding the wind energy utilization, - independently assess profits brought by use of wind energy and undertake



		appropriate measures to obtain them.
Module resources of the wind energy:		
<ul style="list-style-type: none"> - Basics of wind energy generation and conversion into electricity; Wind speed and strength measurements - methods and instruments; - Wind farms; - Small turbines; - Ecological aspects of constructing the infrastructure using wind energy; - Possibilities of using wind energy systems and their application in the agricultural sector. 		
The module of the wind energy contains:		
<ul style="list-style-type: none"> - Text placed online in the form of lessons and elements verifying the acquired knowledge; - Animations and video; - Useful links. 		
The benefits of the wind energy module:		
<ul style="list-style-type: none"> - Getting acquainted with the basics of wind energy issues; - Familiarization with knowledge about air flow and wind power; - Acquainted with the knowledge of how to measure the wind speed; - Familiarizing oneself with knowledge about the types of windmills, turbines and the basics of their operation. 		
Dictionary		
Wind energy fundamentals, values and measurements		
Wind farms		
Basic principles of construction of wind power plants		
Environmental aspects of wind energy		

<u>MODULE 4 – GEOTHERMAL ENERGY</u>		
Partner responsible:		New Edu /SK
Task range	<p>Preparation of training materials on the subject: the basics and the use of geothermal energy, timing, parameters, values, definitions, descriptions of how it works, information about the latest developments in technology, according to the chosen module.</p> <p>Case studies showing the practical application of geothermal energy, the advantages and disadvantages of geothermal energy. Waste management in the context of geothermal energy.</p>	
Training effects:	Obtained knowledge (the course participant is able to):	<ul style="list-style-type: none"> - define what geothermal energy is, - describe ways of operation, - explain implementation methods,



		<ul style="list-style-type: none"> - list benefits of geothermal energy use, - define technical requirements for the use of geothermal energy;
	Obtained skills (the course participant is able to):	<ul style="list-style-type: none"> - choose appropriate methods of geothermal energy production, - apply tools and materials in the field of geothermal energy production and utilization, - schedule the plan of implementation the proper use of geothermal energy in their own farm, - calculate profits and risks;
	Obtained competences (the course participant is able to):	<ul style="list-style-type: none"> - autonomously analyze and rate risk level and threats regarding the geothermal energy utilization, - independently assess profits brought by use of geothermal energy and undertake appropriate measures to obtain them.
<p>Module resources of the geothermal energy:</p> <ul style="list-style-type: none"> - Basics of obtaining geothermal energy; - Ways of using geothermal energy; - Generating electricity from geothermal energy resources; - Heat pumps; - Use in the context of landscape changes and agricultural practices. 		
<p>Geothermal energy module contains:</p> <ul style="list-style-type: none"> - Text placed online in the form of lessons and elements verifying the acquired knowledge; - Animations and video; - Useful links. 		
<p>The benefits of the geothermal energy module:</p> <ul style="list-style-type: none"> - Familiarizing yourself with the possibilities of geothermal energy production; - Familiarizing oneself with the issues of using geothermal energy for the production of electricity and heat; - Use of heat pumps; - Use of geothermal energy in the context of running a farm; - Possibilities of using geothermal energy for relaxation purposes. 		
Dictionary		
Risks from geothermal energy		
A brief historical overview of the use of geothermal energy for the production of electricity		
Heating using geothermal energy		
Heat pump		



MODULE 5 – HYDROELECTRIC ENERGY

Partner responsible:

Balikesir University BAUN / TR

Task range

Preparation of training materials on the subject: the basics and the use of hydro power, timing, parameters, values, definitions, descriptions of how it works, information about the latest developments in technology, according to the chosen module. Case studies showing the practical application of hydro power, the advantages and disadvantages of hydroelectric energy.

Training effects:

Obtained knowledge (the course participant is able to):

- define what hydro energy is,
- describe ways of operation,
- explain implementation methods,
- list benefits of hydro energy use,
- define technical requirements for the use of hydro energy;

Obtained skills (the course participant is able to):

- choose appropriate methods of hydro energy production,
- apply tools and materials in the field of hydro energy production and utilization,
- schedule the plan of implementation the proper use of hydro energy in their own farm,
- calculate profits and risks;

Obtained competences (the course participant is able to):

- autonomously analyze and rate risk level and threats regarding the hydro energy utilization,
- independently assess profits brought by use of hydro energy and undertake appropriate measures to obtain them.

Module resources of the hydro energy:

- Basics of hydro power generation and conversion into electricity;
- Elements of hydropower plants;
- Small water plants;
- Small turbines;
- Ecological aspects of the construction of infrastructure using hydro energy;
- Possibilities of using hydro energy generation systems and their application in the agricultural sector.

The module of the hydro energy contains:

- Text placed online in the form of lessons and elements verifying the acquired knowledge;
- Animations and video;
- Useful links.

The benefits of the hydro energy module:

- Acquainting with the basics of the subject of hydropower;



- Familiarizing oneself with knowledge about the basic types of turbines and the rules of their use.
Dictionary
Hydro-base, values and measurements
Basic principles of construction of hydroelectric power station
Environmental aspects of wind energy

MODULE 6 – AGRO BIOGAS PLANTS	
Partner responsible::	Association ARID
Task range	<p>Preparation of training materials on the subject: the basics and the use of energy from agro-biogas, deadlines, parameters, values, definitions, descriptions of how it works, information about the latest developments in technology, according to the chosen module.</p> <p>Case studies showing the practical application of energy from agro-biogas, advantages and disadvantages of biogas. Waste management in the context of the biogas.</p>
Training effects:	<p>Obtained knowledge (the course participant is able to):</p> <ul style="list-style-type: none"> - define what agro biogas plant and agro biogas energy is, - describe ways of operation, - explain implementation methods, - list benefits of agro biogas energy use, - define technical requirements for the use of agro biogas plant;
	<p>Obtained skills (the course participant is able to):</p> <ul style="list-style-type: none"> - choose appropriate methods of agro biogas plant energy production, - apply tools and materials in the field of agro biogas plant energy production and utilization, - schedule the plan of implementation the proper use of agro biogas plant energy in their own farm, - calculate profits and risks;
	<p>Obtained competences (the course participant is able to):</p> <ul style="list-style-type: none"> - autonomously analyze and rate risk level and threats regarding the agro biogas plant energy utilization, - independently assess profits brought by use of agro biogas plant energy and undertake appropriate measures to obtain them.



Module resources of the biogas module:

- Basics of obtaining energy from agro-biogas;
- Energy production from agro-biogas;
- Farmer as a producer of energy from agro-biogas, a producer of fuels and electricity;
- Use in the context of landscape changes and agricultural practices.

Biogas module contains:

- Text placed online in the form of lessons and elements verifying the acquired knowledge;
- Animations and video;
- Useful links.

The benefits of the biogas energy module:

- Familiarizing oneself with the possibilities of agro-biogas production and its types;
- Getting familiar with the issues of energy production from biogas;
- To become acquainted with the issues of energy production possibilities and reduction of environmental pollution in the context of agricultural production.

Dictionary

Agro-biogas and its role among renewable energy sources

The processing of agro-biogas for energy purposes.

Production of electricity from agro-biogas

3.2.3 The assessment methods

All learning outcomes are assessable, they are written in terms that enable testing of whether or not the trainee has achieved the outcome. It is necessary to have a form of assessment in order to determine the extent to which learning outcomes have been achieved.

Summative assessment is assessment that tries to summarise student learning at some point in time – usually at the end of a module or programme. Summative assessment has been described as end-of-course assessment and essentially means that this is assessment which produces a measure which sums up someone’s achievement and description of what has been achieved.

The use of summative assessment enables a grade to be generated that reflects the student’s performance.

Assessment Method: the exam at the end of each module. The exam provides a multiple choice questions (10 questions after each module) that addresses the core knowledge, skills and competencies indicated in learning outcomes. To achieve the passing mark, the trainee must achieve at least 60% of proper answers.



4 Training materials in the form of a textbook

The training materials will be printed in the form of a textbook. The guide accompanies online training. The manual will be published in the languages of all partners. All materials (photos, pod castings, film and text) will be produced by partners and will be free from encumbrances resulting from copyright.

Detailed technical guidelines explaining how to prepare the textbook are provided in the relevant template.

4.1 Indicators of success

The assessment process will be based on the Donald L Kirkpatrick training assessment model - four levels of education assessment. This task includes defining the assessment criteria and how the success of the training will be measured.

Assessment questionnaires will be developed on the basis of multiple-choice tests to assess the knowledge acquired during the course. The evaluation will take place in the on-line environment at the last stage of each module.

Satisfaction questionnaires will also be used to check understanding gained by participants. This will be particularly useful during the pilot and first editions of the training, in order to improve and possibly rebuild the training structure in preparation for subsequent releases.

4.2 Tools for evaluating the course

The tool for evaluation will be available on-line under the link:

https://docs.google.com/forms/d/1zC4AH4yxSk1cC-vXsoc1g4Ry-FL9Ap_COhbXhTYusUc/viewform?edit_requested=true



5 Country Report Template

1. Introduction
 - a. short info about when and how the training was organised, tools of testing applied
 - b. dissemination and involvement of stakeholders
 - c. problems encountered, lessons learned, recommendations for others
2. Description of the training group
 - a. country, urban/rural, age, experience, gender, type (whatever info we decide to collect)
 - b. which tools of pilot were implemented and how (workshop, online, other)
3. Feedback per tools used
 - a. Feedback of the pilot training
 - b. Feedback on the training content
4. Conclusions
5. Annexes
 - a. Lists of participants
 - b. Pictures, if any
 - c. Any other information