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Educational concepts in the work area renewable energies

In the project "Home 2030" - New Ways in Vocational Training on the "Intelligent use of energy in residential buildings" we had to discuss the existing educational offers relating to the renewable energies, which are provided by the partners of this project.

In this document you will find the results of this survey. This is the basis to develop new courses in the working area renewable energies.

Partner: Handwerkskammer Potsdam (Germany)

1. existing educational offerings (trainings, courses):

training/course	target group	occupation	education or further training	Duration	EQF level
work with intrinsically-safe high-voltage vehicles	professionals/employees, master craftsmen	car mechatronics	further training	12 Units á 45 min.	level 4
analysis technology of buildings	professionals/employees, master craftsmen trainees (without certificate)	construction sector	further training part of education for trainees	8 Units á 45 min.	level 4
Blower Door and A-value measurement	professionals/employees, master craftsmen	construction sector	further training part of education for trainees		level 4

	trainees (without certificate)			8 Units á 45 min.	
infrared thermography and interpretation	professionals/employees, master craftsmen trainees (without certificate)	construction sector	further training part of education for trainees	8 Units á 45 min.	level 4
photovoltaics	professionals/employees, master craftsmen trainees (without certificate)	electrical engineering, electronics	further training part of education for trainees	24 Units á 45 min.	level 4
KNX – projecting and implementing	professionals/employees, master craftsmen trainees (without certificate)	electrical engineering, electronics	further training part of education for trainees	40 Units á 45 min.	level 4
handicraft activities on heat-pump-installer and air conditioning systems	professionals/employees, master craftsmen trainees (without certificate)	plumbing and heating installer, electrical engineering, electronics	further training part of education for trainees	40 Units á 45 min.	level 4
energy adviser	professionals/employees, master craftsmen	construction sector	education	240 Units á 45 min.	level 4

2. Information about (existing) future educational concepts:

- planned courses (Home 2030)
- Energy Management DIN EN ISO 50001 (method of “ecomapping energy” for potentialities and deficits in the energy management of enterprises (intern))

3. Further information about relevant issues in renewable energies which should be included:

- infrared thermography (advanced training course on level 5)
- course for energy storage
- course for energy production
- course for energy management

Partner: BFKK (Poland)

1. existing educational offerings (trainings, courses):

Training/course	Target group	Occupation	education or further training	Duration	EQF level
Eco-energy building, energy efficiency, methods of energy saving, use of waste for energy purposes; Prosumer – a new challenge for Poland and optimal use of renewable energy sources based on practical examples in Poland	The seminar is for lecturers, trainers and consultants from the fields of energy and environment from universities, high schools, chambers of industry, commerce and crafts, unions, further education providers and other relevant promotion institutions.	N/A	Further training	16 x 45 min	N/A

2. Information about (existing) future educational concepts:

a) Introduction

- Global economy – pursuit of non-emission economy
- Technology of saving electric and heating energy, coolness and water
- Introduction to waste management

b) Insulation technologies in building industry

- Influence of insulation of energy efficiency in building and industry – good practices

c) Eco-energy building

- Passive buildings, zero/plus-energy buildings
- Example of zero-energy building in Polish conditions – facts and myths
- Calculating and simulation software

d) Eco-energy building – cont.

- Example of zero-energy building in Polish conditions – facts and myths
- Calculating and simulation software
- Presentation of thermal cameras and video pyrometers
- Presentation of insulation materials and renewable energy technologies

e) Energy legislation and EU directives on

- Energy safety – diversification and diffused prosumer power industry – opportunities and threats

f) Prosumer - as a new entity of economic relations

g) Renewable energy sources technologies and their application

- Overview of technologies – electric heating and gas pumps
- Flat and evacuated solar thermal collectors
- Solar cells
- Biomass
- Errors and problems with adequate design of systems of renewable energy sources
- Practical examples

h) Technologies of heat and coolness accumulation as an element increasing energy efficiency in building.

- Heat and coolness accumulation – practical examples

i) Workshop on choices of technologies of renewable energy sources, thermal modernization, energy efficiency and energy saving.

- One-family building – case study
- Multi-family building – case study
- School, kindergarten – case study
- Office building – case study

j) Workshop on legal and financial aspects

- Financial instruments allowing to carry out investments in renewable energy sources - financial calculators, applications, EU financing

3. Further information about relevant issues in renewable energies which should be included:

The course includes different topics; however its time dimension could be extended so that individual topics could be analyzed more deeply.

Partner: Confartigianato Vicenza (Italy)

1. existing educational offerings (trainings, courses):

Training/course	Target group	Occupation	education or further training	Duration	EQF level
Biomass	professionals	Installers	further training	16 hours	EQF level 4
Heating Pumps	professionals	Installers	further training	16 hours	EQF level 4
Solar Heating Systems	professionals	Installers	further training	16 hours	EQF level 4
PV Plants	professionals	Installers	further training	16 hours	EQF level 4
Installer compulsory training	students	Installers	education	80 hours	EQF level 4

2. Information about (existing) future educational concepts:

- Home 2030 courses

3. Further information about relevant issues in renewable energies which should be included:

- ICT
- domotics
- Passive house
- Wooden houses
- Renewable energies for e-vehicles

Partner: Liberconsulores (Spain)

Training/ course	Training	Target group	Occupation	Education or futher training	Duration	EQF level
Analysis technology of buildings	- Superior Technician in building projects. Collaborates in the process of energy certification of buildings	Building and Civil Works	- Assistant in energy certification of buildings processes. -Technician in energy efficiency of buildings.	Higher Level Vocational Training CENTRO LIBER course on "renewable energy applied to buildings"	60 hours	LEVEL 5 EQF
Infrared thermography and interpretation				There are entities that certify the level of training and thermographers in level I, II and III.		So far it has no equivalent in any official agency in Spain

				These entities are regulated by ISO, EN, and ASNT standards		
Photovoltaic	<ul style="list-style-type: none"> - Technician in electrical and installation control. - Technician in renewable energies. Responsible for carrying out the coordination of the assembly, commissioning of operation, management maintenance of parks and facilities of wind energy facilities, promotion and development of projects, management, 	<p>Electrical Engineering</p> <p>RENEWABLE ENERGIES</p>	<ul style="list-style-type: none"> - Technical management, operation and maintenance of wind farms. - Responsible for the installation of wind farms. - Responsible for the installation of wind turbines. - Specialist assembler of wind turbines. 	<p>Intermediate training course</p> <p>Superior vocational training course.</p> <p>Centro LIBER: Photovoltaic</p> <p>Centro LIBER: Installations of photovoltaic solar energy</p>	2000 hours	<p>LEVEL 3 and 4 EQF</p> <p>LEVEL 5 EQF</p>

	<p>installation and maintenance of photovoltaic solar systems, management and first level supervision of the assembly and maintenance of electrical substations</p>		<ul style="list-style-type: none"> - Specialist in the maintenance of wind farms. - Promoter of solar installations. - Technician of photovoltaic solar installations. - Responsible for the installation of photovoltaic solar installations. - Responsible for the maintenance of photovoltaic solar installations. - Responsible for 			
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			<p>the operation and maintenance of small photovoltaic solar plants.</p> <p>- Assembler-operator of photovoltaic solar installations.</p> <p>- Responsible for the installation of electrical substations in wind and photovoltaic installations.</p> <p>- Responsible for the maintenance of electrical substations, wind</p>			
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			and photovoltaic installations.			
KNX – projecting and implementing		Control and automation of homes and buildings		Informal training provided by members of the KNX Association in Spain		
Handicraft activities on heat-pump-installer and air conditioning systems	Technician in heat production facilities with general competence in mounting and maintaining heat, solar thermal and fluid installations according to the current legislation, quality protocols, safety and prevention of occupational risks, ensuring its	Installation and maintenance	-Installer / Maintainer of heat production equipment. Installer / Maintainer of heating and ACS systems. Installer / Maintainer of solar thermal systems. Installer / Maintainer of water facilities.	Vocational training Intermediate grade.	2000 hours	LEVEL 3 EQF

	<p>functionality and respect for the environment.</p> <p>- Superior Technician in development of heating and fluid projects.</p>		<p>Installer / Maintainer of gas and liquid fuels installations.</p>	<p>Superior grade (2000 hs.)</p>		<p>LEVEL 3 CNCP= LEVEL 5 EQF</p>
<p>Energy adviser</p>	<p>- Superior technician in energy efficiency and solar thermal energy.</p> <p>- Superior technician in renewable energies.</p>	<p>Energy and water.</p>	<p>Technician in energy efficiency in buildings / Assistant in processes of energy certification of buildings. / Commercial of solar installations.</p>	<p>Superior Grade</p> <p>Superior Grade</p>		<p>-LEVEL 5 EQF</p> <p>LEVEL 5 EQF</p>

			/ Responsible for the installation of solar thermal facilities. / Responsible for maintenance of solar thermal installations / Energy Manager. / Promoter of efficiency energies programs	- CENTRO LIBER course "Introduction to renewable energies"		
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2. Information about (existing) future educational concepts:

3. Further information about relevant issues in renewable energies which should be included: