

Qualification of trainer of RES systems installers: Level 6

MINIMUM ENTRY REQUIREMENTS AND SUGGESTED LEARNING E-CONTENTS

KNOWLEDGE	SUGGESTED LEARNING E-CONTENTS	TO READ MORE....	ASSESSMENT
Concepts and general principles of Maths	Mathematics: basic course (ENEA e-learning course in Italian version)	Concepts of Mathematics (ENEA e-learning course in Italian version)	Multiple choice test
Thermodynamics, Thermo fluid dynamics, Thermal Machines, measurements of temperature and pressure	Physics for thermal systems (ENEA e-learning course in Italian version)	e-Quem, course number 2: Energetic fundamentals- modules 1,2,3,4 (ENEA e-learning course in Italian version)	
Principles of Electrical Engineering and Electrical Safety, elements of Electrical Measurements	Electrotechnics and electrical systems design (ENEA e-learning course in Italian version)	e-Quem, course number 2: Energetic fundamentals- modules 5,6 (ENEA e-learning course in Italian version)	
Authorization requirements for civil building thermal systems installations	e-Quem, course number 3: Duties and activities of Energy Manager- modules 4,5,6, annexes		
International and National legislatives	See the legislation section of the Compener web site	e-Quem course number 7: Norms, legislations and contracts in the energy	

		sector (ENEA e-learning course in Italian version)	
Basic Knowledge of Communication	e-Quem course number 9: Communication and Marketing, modules 1,2,3,5 (ENEA e-learning course in Italian version)		
Basic Knowledge of pedagogy	Learning to think (ENEA e-learning course in Italian version)	Learning contests (ENEA e-learning course in Italian version)	
General background on RES and, more specifically, basic knowledge in the RES technology which is object of the training	Solar thermal energy (ENEA e-learning course in Italian, english and french version) Biomass energy (ENEA e-learning course in Italian and english version) Heat Pump Installation (ENEA e-learning course in Italian version) Photovoltaic Energy (ENEA e-learning course in Italian version)		

	<p>The Photovoltaic Technology part I and II (ENEA video-lessons in English version)</p> <p>Geothermal Energy for greenhouses (ENEA e-learning course in English version)</p> <p>Geothermal energy part I and II (ENEA video-lessons in English version)</p> <p>Wind energy (ENEA e-learning course in Italian version) or Wind energy, part I-II (ENEA video-lesson in English version)</p>		
<p>SKILLS</p> <p>The trainer of RES systems installers is a professional with recognized professional experience, who has skills in both the specific RES technology and in the field of adult education. To assure an complete and high level of the training of RES systems installers, it's necessary to qualify two different professional figures: the trainer for the theoretical section and another one for the practical section.</p> <p>Both professional figures have to prove:</p>			<p>EDUCATION</p> <p>Degree or Diploma of technical upper secondary education, in skills required by industry</p> <p>WORK EXPERIENCE</p> <p>To get the qualification of trainer of RES systems installers is necessary to show an appropriate and documented continuing work experience in the energy sector of which at least 50% in the specific area :</p> <p>- Diploma of technical upper secondary education: 10 years - 3 year degree course: 8 years</p>

<p>1. Significant experience in the planning or implementation or setting up and maintenance of a specific RES system;</p> <p>2. Solid experience in training, as a lecturer - trainer, with or on behalf of organizations, educational institutions, enterprises.</p>			<p>- 5 year degree course: 6 years</p> <p>In addition to the above requirements, the experience in the specific sector must include:</p> <p>a) For the teaching of the theory:</p> <ul style="list-style-type: none"> - significant activity of design and installation of at least 6 systems of significant power installed over the past 3 years; <p>and:</p> <ul style="list-style-type: none"> - Experience in teaching activities for at least 50 hours in the last 3 years, in each issue of his training programme <p>or alternatively:</p> <ul style="list-style-type: none"> - Ongoing teaching activities (covering a period of at least 5 years) courses qualified by authorized bodies and provided with appropriate qualifications and accreditation for at least 80 hours. <p>or:</p> <ul style="list-style-type: none"> - Activities of ongoing research or university teaching in the energy sector of at least 5 years, of which at least 50% in the specific field. <p>b) For the teaching of the practice:</p> <ul style="list-style-type: none"> - Ongoing activities of installation of at least 10 systems of significant power installed over the past 3 years (as a technical manager: according to the DM. 37/2008); <p>or alternatively:</p> <ul style="list-style-type: none"> - Assistance and maintenance activities in the specific area for at least 8 years; <p>or:</p> <ul style="list-style-type: none"> - Activities of continuing education (covering a period of at
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			<p>least 5 years) for at least 80 hours in the specific area, on behalf of educational institutions, manufacturing companies in the industry, industry associations.</p>
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PROFESSIONAL QUALIFICATION

to pass qualified courses on the design and installation of the specific RES system, according to the COMPENER Qualification process.

KNOWLEDGE, SKILLS AND COMPETENCES (EQF), TRAINING PROGRAMME AND ASSESSMENT

KNOWLEDGE

Knowledge to be acquired

The required knowledge is got by attending a classroom course including theoretic and practical sections. The training programme consists of the following issues:

In-depth knowledge of the following issues regarding the certification of the energy operators

- Purpose and Application of the European Qualification Framework - EQF for lifelong learning;
- Regulations and legislations for the certification of installers
- General background of COMPENER qualification and certification process for energy operators;
- European and national legislation and policy in the energy and environmental field;
- Sustainable development, energy efficiency and renewable energy sources.

In-depth knowledge of the following issues regarding teaching

- *Public speaking Techniques*
- *Team building*
- *Didactic methodology, techniques and instruments*
- *Didactical design*
- *Learning styles*
- *Motivational psychology*
- *Methods for evaluating teaching (knowledge and skills)*

Basic Knowledge of the following issues regarding teaching

- *Communication theories, models and techniques (verbal and non verbal communication)*
- *Learning theories (Psychology)*
- *Elements of Behavioral psychology*
- *Elements of pedagogy and andragogy*
- *Didactical methodology, techniques and instruments (including e-learning)*
- *Designing of the learning path and curricula*
- *Elements of copyright legislation*
- *Management systems for high quality teaching and learning*
- *Methodologies, techniques and instruments for the quality control of teaching and learning (ISO 10015)*

SKILLS

Required SKILLS

In addition to the required skills for installation and maintenance of a specific RES technology, the candidate trainer should prove the following skills:

- *Personalization of learning*
- *Design of micro-didactical arrangements in the context of macro-learning and teaching environmental*
- *Acquisition and development of interdisciplinary sources of learning*
- *Communication: dialectical relationship, clarity, speech logic, command attention, active involvement*
- *Ex-ante and ex-post evaluation of the achievement of the learning goals*
- *Didactical techniques*
- *Didactical methodologies*
- *Auto-evaluation of training activities*
- *Improvement of the effectiveness of the learning processes*
- *Improvement of the training performances*

COMPETENCES

Required competences

In addition to the required competences for installation and maintenance of a specific RES technology, the candidate trainer should prove the following competences:

- to have good interpersonal communication skills
- to have open minded and creative thinking,
- to be change and innovation oriented
- to be diplomatic and tactful
- to be perceptive: *to be able to understand* the elements at work in any *change* process
- to be versatile: *to be able to adapt* to a variety of situations.
- To be tenacious to get results
- To have analysis and synthesis capacity
- To have critical understanding
- To be a good listener
- to have an excellent knowledge of national language, written and spoken
- to be able to work in a team
- problem solving

ASSESSMENT

In the qualification process, the final results will be demonstrated by the final examination. Candidate trainers will be assessed in relation to their specific professional profile: theoretical or practical trainer.

The final examination consists of passing the following tests:

1. multiple choice test referring to the acquired knowledge
2. a short interview aimed to verifying the required skills and competences
3. an hour classroom lesson