

TRAINING, SKILL AND CERTIFICATION IN PV INSTALLATIONS



ITALIAN AGENCY FOR NEW TECHNOLOGIES,
ENERGY AND DEVELOPMENT OF
SUSTAINABLE ECONOMICS

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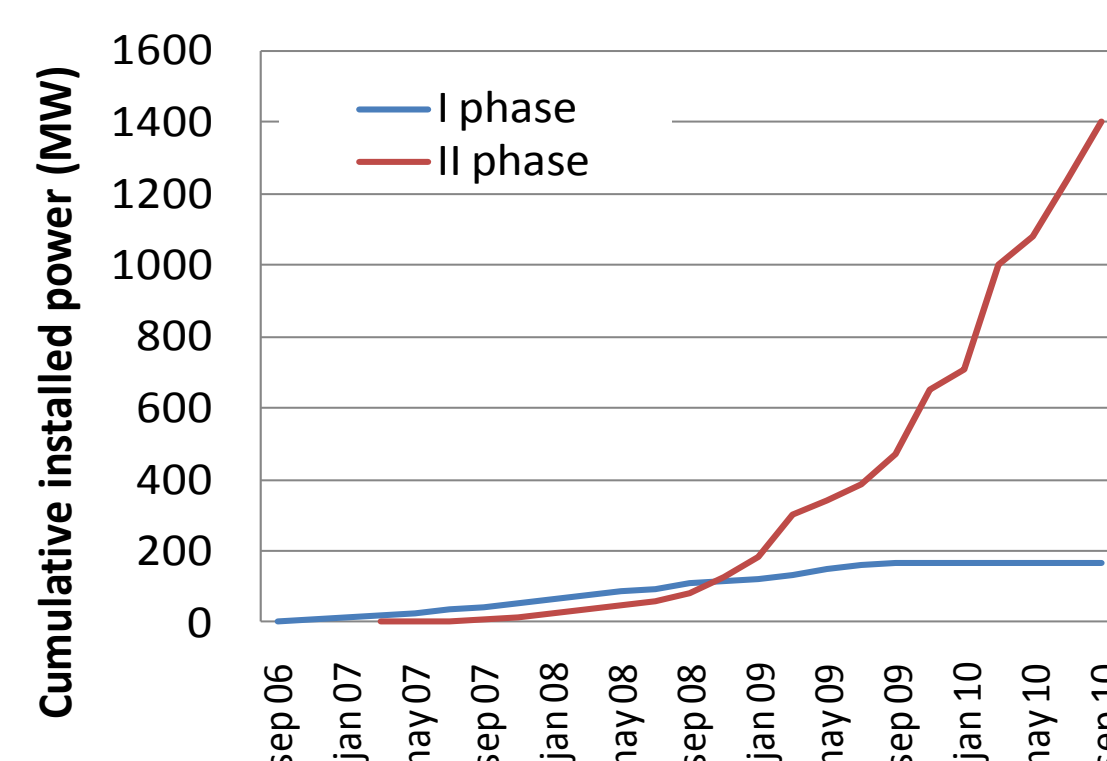


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ABSTRACT In Italy the PV business has reached an annual amount of 130 M€. In this context it is interesting to evaluate the qualification and skills of designers and installers, and whether they are a match for the quality standards in the present Italian market. The **Directive 2009/28/EC** of the 23rd April 2009 introduces a novelty for installers of PV plants. Before December 31st 2012, the Member states have to provide the installers a certification or a qualification system, based on a mutual recognition. ENEA and Mesos have performed interviews with the installers and installing companies to find out whether they are in favour of a certification and to what extent the education influenced their work

Market situation



Installed power in the framework of
the first and second phase of the programme

The second phase of the “Conto Energia” promoting programme will be concluded by the end of 2010. The installed PV power that has reached today is about 1500 MW, with an increase of 150 % as respect to the previous year. Almost 100.000 plants have been installed all over the country

ESTIMATION OF REQUIRED INSTALLERS

Year	New installed (MWp)	Installers to be trained	Installers employed
2007	70		600
2008	338	675	3000
2009	723	950	5000
2010e	1000	1215	7000

Training in PV sector

There is no official certification and accreditation scheme for PV installers in Italy. Training in the field of PV systems is organized by different actors. Public or private institutions operating in the sector also offer courses for aspiring designers or installers.

Training structures and courses

	SHORT COURSES	AVERAGE TIME COURSES	MASTERS	ENEA/MESOS QUALIFY COURSE
ORGANISATION	Companies in the sector	Training institutions. Professional ranks	Universities	Research Spin off
SPEAKERS	Technical experts	University professors. Technical expert, Engineers	Researcher, University professors	Researcher s, technical experts with minimum 5 years experience in PV sector
REQUIREMENTS	No	Diploma	Degree	Diploma + 1year experience
FINAL EXAMINATION	NO	NO	YES	YES
AVERAGE COSTS	600 euro	1200 euro	3000 euro	1300 euro
QUALIFICATION	NO	In few cases	MASTER'S DEGREE	YES (*)

PV courses qualified by a third party :

- (*) The course organized by ENEA – Mesos, Qualified by CEPAS under the ISO/IEC 17024 standard (ex EN 45013) .
- The course organized by C.R.E.A., recognized by ESAcert based on CEN standards UNI EN 45011.

The italian certification and qualification scheme



Directive 2009/28/EC

The Directive on the promotion of the use of energy from renewable sources entered into force in June 2009

National Renewable Energy Action Plan (NREAP)

Submitted by the Ministry of the Economic Development to the Commission on 29th July 2010.

According to Article 14 – *information and training* of the RES Directive in the NREAP Italy has reported all policies and measures ensuring that information on support measures is made available to all relevant actors by the supplier of the equipment or system or by the national competent authorities. Information campaigns are not mandatory but planned to begin in 2010 and last 2020.

The project QUALICERT - “Common quality certification and accreditation for installers of small-scale renewable energy systems”

- Involves 15 European partners, including EPIA, the European Photovoltaic Industry Association.
- The aim is to define the competences that the installers should have.
- In brief the EQF will be used to fulfil the requirements of art.14 of the Directive 2009/28/EC for the promotion of RES.

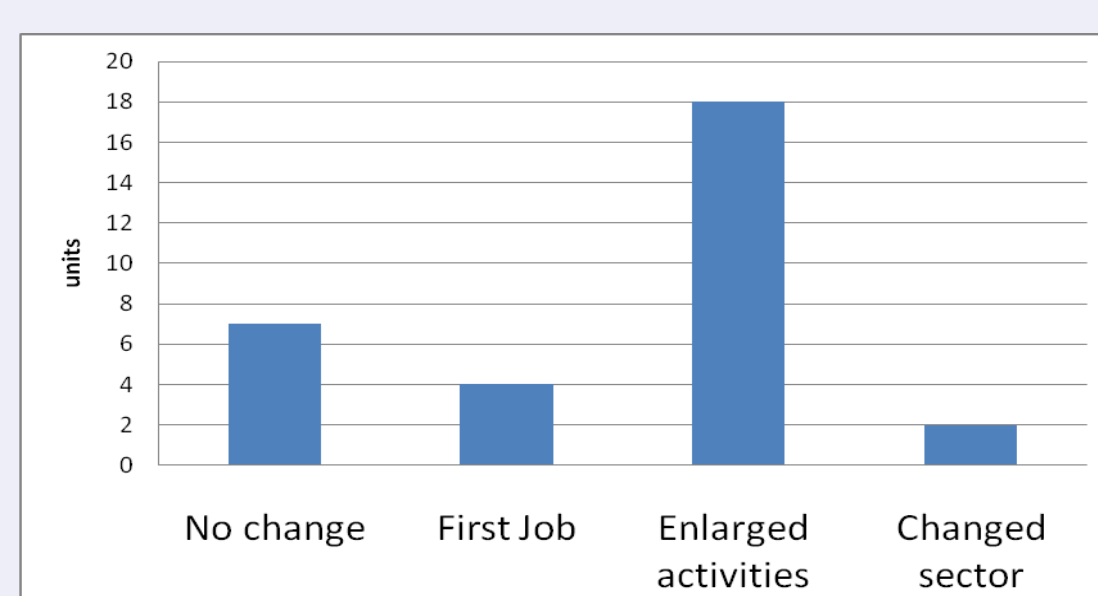
Training and certification: results of an inquiry

- For the definition of the certification path of the operators involved in the *design, installation and inspection* of PV plants, ENEA has identified **CEPAS - Italian Certification Body for Personnel and Training Courses**.
- CEPAS follows the ISO/IEC 17024 standard (ex EN 45013) “General requirements for bodies operating certification of persons”
- Up to now Mesos and ENEA have organized 8 editions of the designers course and 3 for installers of PV plants. They have trained 207 people, of which 152 designers and 55 installers.

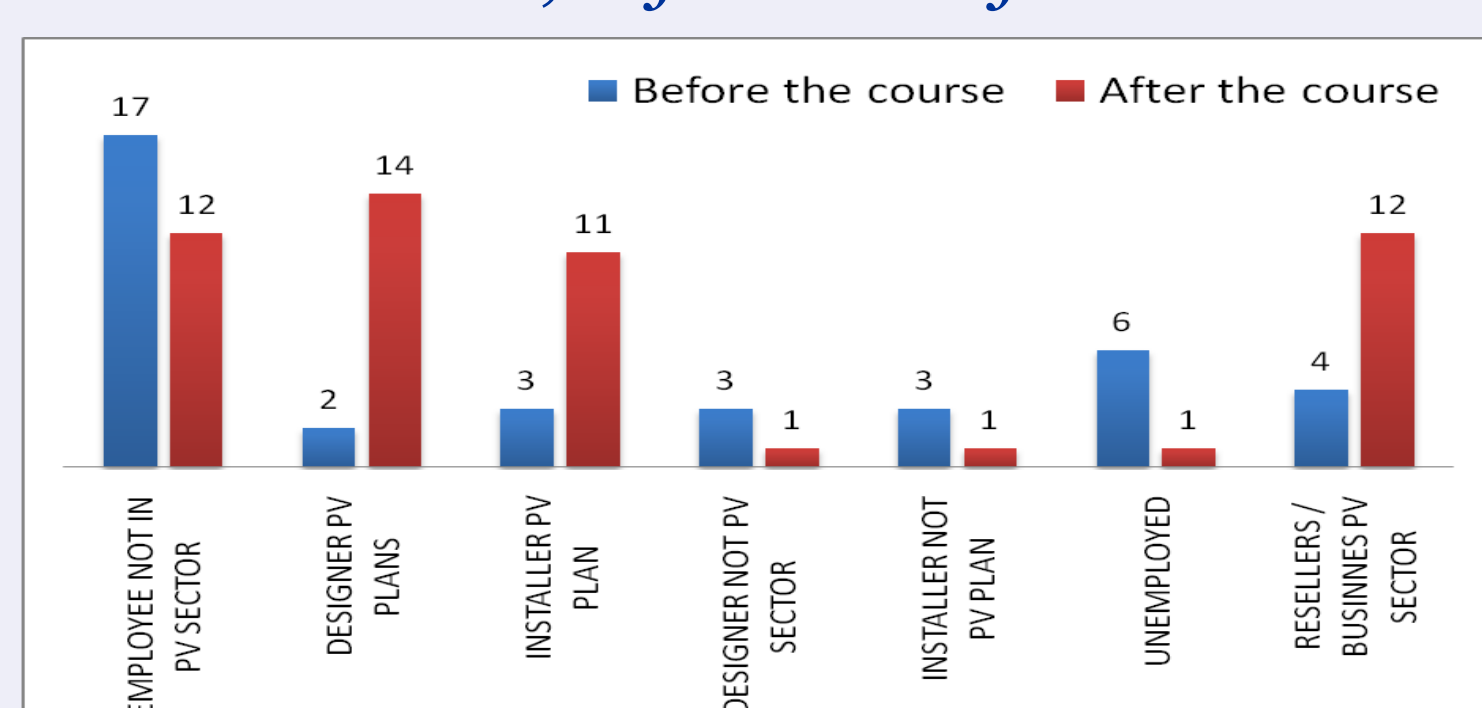


Results of representative sample of 31 ex trainees who have responded to our questionnaire

Changed PV Job Situation due to the course



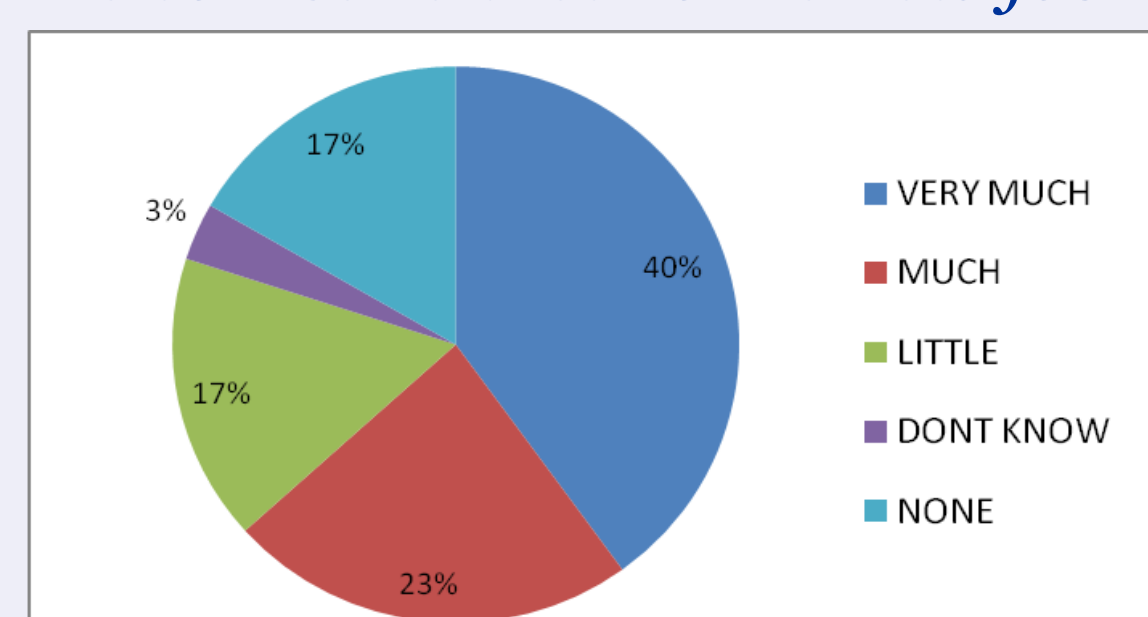
Job Situation, before and after the course



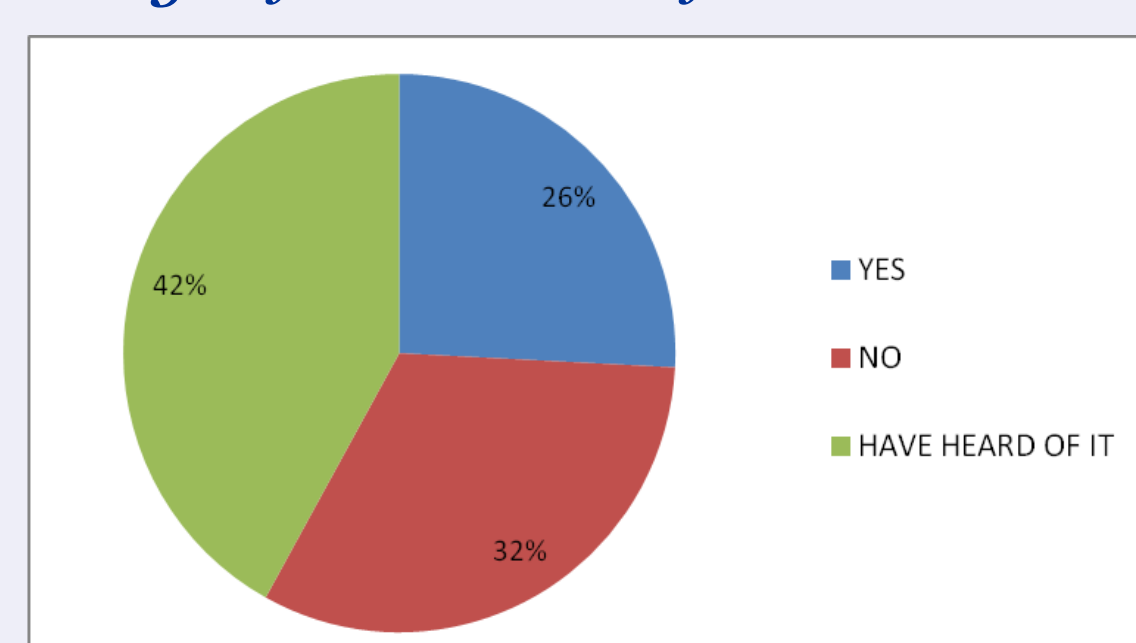
Total power of plants installed/designed by the ex trainees during the last 3 years

Year	2008	2009	2010
Total Power (kW)	251	664	6335
Number of plants	18	50	78

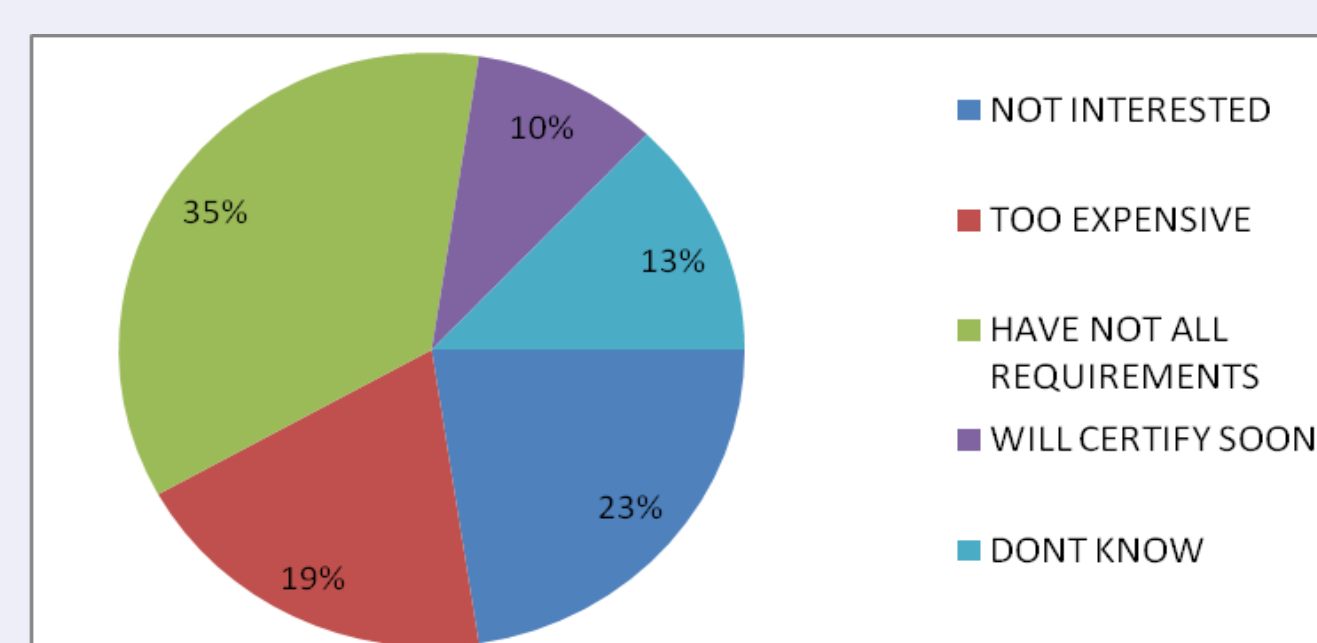
Significance of the participation at the course related to the new job



Knowledge of the contents of the Directive 2009/28/CE



Reasons for not being qualified yet



CONCLUSIONS

- ✓ Considering ENEA's long experience in R&D on PV, Article 4 of the Decree Law 115/2008 has assigned to ENEA the task of the National Energy Efficiency Agency.
- ✓ Being well experienced in training, therefore ENEA is the most appropriate agency to develop different instruments, this in cooperation with regions and regional training agencies.
- ✓ There are already available e-learning courses and face to face course aimed to installers, designers, end- users, according to European standards ISO and certified by CEPAS.
- ✓ The above mentioned experience is used in the European funded Project “QualiCert” which represents a “key project” to the European harmonisation and mutual recognition of the existing certification and qualification schemes.