PVTRIN
INSTALLER CERTIFICATION

TRAINING OF PHOTOVOLTAIC INSTALLERS

Development and implementation of a common certification scheme for PV installers

List of National Certification Bodies
(WP5 –D5.8)

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PVTRIN: The PVTRIN project scope is the development of a training and certification scheme for technicians, according common accepted criteria and standards, focused on the installation and maintenance of small scale PV.

The expected results are: Accredited training courses and an operational certification scheme for PV installers in 6 participating countries; Practical training material/tools for installers and their trainers; Web portal with access to technical information on PV installation/integration; 8 pilot training courses implemented, a pool of skilled/certified PV installers; A roadmap for the adoption of the certification scheme across Europe.

Long term, PVTRIN will contribute to the PV/BIPV market growth in the participating countries, provide a supporting instrument for EU MS to meet their obligations for acknowledged certifications for RES installers till 31/12/2012 and enforce the MS efforts to achieve the mandatory target of a 20% share of energy from RES in overall Community energy consumption by 2020. The PVTRIN is co-financed by the Intelligent Energy - Europe (IEE) programme.

PROJECT COORDINATOR

Associate Professor Theocharis Tsoutsos, Renewable and Sustainable Energy Systems Lab.
Environmental Engineering Dpt., TECHNICAL UNIVERSITY OF CRETE (TUC)

PROJECT PARTNERS

Agency of Brasov for the Management of Energy & Environment (ABMEE)	Romania
Building Research Establishment Limited (BRE)	UK
Energy Institute Hrvoje Požar (EIHP)	Croatia
European Photovoltaic Industry Association (EPIA)	EU
Scientific and Technical Chamber of Cyprus (ETEK)	Cyprus
Sofia Energy Centre (SEC)	Bulgaria
Technical Chamber of Greece –Western Crete (TEE)	Greece
TECNALIA Research & Innovation (TECNALIA)	Spain

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BRE

DELIVERABLE EDITOR

BRE

Contributors

ABMEE, EIHP, EPIA, ETEK, SEC, TEE, TUC, TECNALIA

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pvtrin@pvtrin.eu, www.pvtrin.eu

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Executive Summary

This document identifies organisations that issued PVTRIN installer certificates for each of the PVTRIN pilot courses run in the participating countries.

The certification of PVTRIN installers may be performed by a training organisation accredited to ISO/IEC 17024 for delivery of the PVTRIN training course. This is the preferred certification route for PVTRIN installers. However, it became apparent during the project that there were no organisations currently accredited to ISO/IEC 17024 that offer training in the installation of PV systems or other renewable energy technologies within the PVTRIN participating countries. Consequently an additional path to certification was developed in which an officially recognised training organisation may award a nationally recognised PVTRIN qualification. This would then be used by an appropriately accredited certification body as evidence of compliance with the requirements of the PVTRIN scheme so that a certificate may be issued. In this case the certification body may be accredited to ISO/IEC 17024 or possibly EN 45011 (now superseded by ISO/IEC 17065).

Additional research has been conducted to identify alternative approaches to the certification of PVTRIN installers. This includes identifying appropriate certification bodies accredited to EN 45011 (ISO/IEC 17065) and/or organisations and procedures for establishing new nationally recognised qualifications. The following pages contain the lists of these organisations.

This document also lists the accreditation bodies for each PVTRIN participating country. Each accreditation body maintains lists of accredited organisations, including those accredited to ISO/IEC 17024, EN 45011 and ISO/IEC 17065. Details of their accredited scope are also available so that additional PVTRIN training organisations and certification bodies for the certification of PVTRIN installers may be identified.

Bulgaria

In Bulgaria PVTRIN installers was certificated by the Henry Ford Vocational School. The school is accredited for the training of renewable energy system installers and for life–long training by the Bulgarian Ministry of Education, Youth and Science.

The PVTRIN training course is submitted for national recognition to the National Agency for Vocational Education and Training (NAVET).

NAVET is a state legal entity that is under the direct sub-ordination of the Council of Ministries and who's responsibilities include:

- Assuring and maintaining quality in the vocational education and training of young people and adults according to the labour market needs and the development of the Bulgarian economy competitiveness
- Cooperation with the social partners in implementing coordinated policies for lifelong learning, continuing vocational training and introducing successful European practices
- Expanding the access of the unemployed and the employed to vocational education and training according to the labour market needs
- Ensuring public access to useful information concerning the continuing vocational training and lifelong learning in the country and in the EU
- Development of the List of professions for vocational education and training
- Development of State Educational Requirements (standards) for acquiring qualifications
- Modernisation of the national system for vocational education, training and guidance in the context of lifelong learning and the continuing vocational training aiming at ensuring effective integration and reintegration of the human resources on the labour market
- Agreement with the Employment Agency (EA) in relation to the quality and control assurance of the vocational training of the employed and the unemployed
- Establishing of an Integrated information system "NAVET- EA" for the demand and the supply of vocational training in the country
- Licensing and conducting follow-up control of the centres for vocational training; Coordinating institutions and organizations related to the vocational education, training and guidance
- Ensuring public access to various information concerning the continuing vocational training and lifelong learning in the country and in the EU

Discussions with NAVET have indicated that the PVTRIN course is expected to meet the national recognition requirements. To get this recognition all training materials, including the internet platform, have to be presented to NAVET who then require at least 3 months to issue recognition.

Croatia

The certification body that took part in the Croatian pilot courses for PVTRIN was the Croatian Society (Hrvatsko društvo za kontrolu bez razaranja, Centar za certifikaciju osoblja Zavrtnica 17, Zagreb 10000. http://www.hdkbr.hr/ accessed 29/04/2013). They are accredited against HR ISO/IEC 17024:2003.

EIHP will be cooperating with this organization in future, in order to continue PVTRIN certification and possibly to extend certification schemes on other renewable energy technologies (solar collectors, heat pumps, biomass). This also includes cooperation to help extend their scope of accreditation to include installers.

In addition the following organisations are accredited by the Croatian Acreditation Agency to ISO/IEC 17024:

Hrvatsko društvo za kontrolu bez razaranja, Centar za certifikaciju osoblja
Zavrtnica 17, Zagreb 10000
www.hdkbr.hr

- Accredited for the certification of personnel for non-destructive testing.

Oskar Edukos d.o.o., Ustanova za certificiranje osoblja
Radoslava Cimermana 36 a, Zagreb 10020
www.oskaredukos.hr

- Accredited for the certification of personnel in the field of quality and environmental management systems

ZIT - Zavod za zavarivanje, ispitivanje i tehnologiju d.o.o., Odjel za certifikaciju zavarivača i operatera
Rakitnica 2, Zagreb 10040
www.zit-zg.hr

- Accredited for the certification of welders and operators

None of the three Croatian certification bodies accredited under EN 17024 are likely to train/certify PV installers. Two of them are accredited for the certification of personnel in very specific areas (non-destructive testing, welders and operators) and third is certifying personnel in quality and environmental management systems. There is a wider choice of certification bodies accredited to EN 45011 which includes:

Končar-Institut za elektrotehniku d.d.

Provide certification of low voltage electrical equipment, equipment according to the EMC directive. They are not primary related to installers, but they have department for renewable energy.

TUV Croatia

Accredited for the certification of pressure equipment, simple pressure vessel, transportable pressure equipment and permanent joining procedures.

These are not closely related to PV installers but taking into account the wider experience and operations of TUV, they may consider certificating PV installers in the future.

In summary Croatia does not currently have a certification body which certificates PV system (or similar) installers. However, there are a number of EN 45011 accredited certification bodies operating in related areas that may consider certificating PV installers in the future.

Cyprus

The Cyprus Scientific and Technical Chamber (ETEK) has used the Cyprus Certification Company http://www.cycert.org.cy/ (accessed 29/04/2013) during the pilot courses held in Cyprus. Cyprus Certification Company is accredited to EN 45011 but this does not yet include certification of PV installers.

The National Accreditation Body for Cyprus is the Cyprus Organisation for the Promotion of Quality (COPQ). Currently COPQ does not offer an accreditation scheme for EN17024 and so EN 45011 is currently the only route to accreditation. Very few organisations have been accredited to EN 45011 and those that have achieved accreditation have done so in unrelated fields (e.g. Organic Production).

Greece

The PVTRIN certification scheme in Greece was developed with the cooperation of the Hellenic Association of Accredited Certification and Inspection Bodies (HellasCert) who have also committed to maintain the certification scheme after the end of the PVTRIN project. The Technical Committee constituted for the scope of the development and submission of the scheme to the National Accreditation Body will also continue its support.

The PVTRIN scheme was submitted for accreditation by Hellenic Accreditation System S.A. (E.SY.D.) in September 2012. Comments were provided and taken into account to the scheme requirements. Validation is expected 3-4 months after the completion of the pilot courses. The training itself is expected to be included as a specialisation at vocational training courses of the national formal education system (under evaluation from the National Organisation for the Certification of Qualifications & Vocational Guidance *(EOPPEP).*

The Certification Body that issued PVTRIN Certification following to the PVTRIN pilot courses is PeopleCert, one of the competent members of HellasCert. PeopleCert is Accredited with ISO 17024 as Personnel Certification Body, Certified by ISO 9001 for Quality Management, ISO 10002 for Customer Satisfaction & Complaints Handling, ISO 14001 for Environmental Management, ISO 27001 for Information & Data Security. PeopleCert is a Full Member of the International Personnel Certification Association (IPC), is awarded with the "Committed to Excellence" distinction from the European Foundation of Quality Management (EFQM), has delivered to date 3,000,000+ exams and involves 100+ full time employees and 1,000+ external associates.

In order to identify other relevant accredited certification bodies, TUC also analysed information from the Greek accreditation body, Hellenic Accreditation System S.A. E.SY.D., looking for certification bodies accredited for the certification of products (i.e. to EN 45011 or ISO/IEC 17065) or for the certification of persons (i.e. ISO/IEC 17024). However, no accredited certification bodies were identified which are currently active in areas relevant to PV installers - including electrical installations, certification of PV products, certification of installers or PV installation according to the above accreditation standards.

TUC and HellasCert have been promoting the PVTRIN scheme at national level and have planned for the scheme's sustainability in the country. The scheme is currently available to all members of HellasCert who are acknowledged for Personnel Certification and run under the ISO 17024. A number of certification bodies were identified that are likely to be interested in the future, although they are not at the moment accredited within this scope.

These include, the following with interest to integrated services at the RES sector:

TUV-AUSTRIA-HELLAS LTD, 429, Mesogeion avenue, 15343 Athens, Greece, www.tuvaustriahellas.gr (accessed 04/06/2013). TUV-AUSTRIA-HELLAS Ltd. is accredited by the National Accreditation Board of Greece- ESYD for the inspection and certification of a variety of products, according to ELOT EN ISO/IEC 17021 and ELOT EN 45011 and operates in the Greek markets for management systems certification and inspections, the certification of materials, products, machinery and equipment, building and industrial installations. In addition, TÜV AUSTRIA HELLAS has also cooperated in Greece and abroad with companies producing renewable energy and has provided services as regards PVs for both domestic use and commercial photovoltaic parks with regard to the inspection and certification of the supporting structures according to the EuroCode 1, 3 & 9, sampling checks during the delivery process, verification of compliance to the technical specifications, on-site audits and certification of the installation.

TÜV HELLAS (TÜV NORD) S.A. 24, E. Venizelou street, 153 41, Agia Paraskevi, Athens, Greece, http://www.tuv-nord.com/gr (accessed 04/06/2013). TÜV HELLAS (TÜV NORD) S.A. has been accredited by the National Accreditation Board of Greece- ESYD for the inspection and certification of a variety of products, according to ELOT EN ISO/IEC 17021 and ELOT EN 45011. They also perform audits and validation of photovoltaic parks.

Romania

For the pilot courses in Romania ABMEE implemented a specialisation course, authorised by the Romanian National Authority for Qualifications (ANC) with authorisation number 001042/2012. ANC is a new organisation formed from the merger of ACPART (the EQF National Contact Point for Romania) and the former National Counsel for Adults Vocational Training.

The certificates for the pilot courses trainees were also issued by the Romanian National Authority for Qualifications (ANC). These certificates included the logos of the two Romanian Ministries responsible for adult vocational training. These were:

a. The Ministry of Labour, Family, Social Protection and Elderly
b. The Ministry of National Education

The development of the new national qualification involved the following steps:

- Conduct an Occupational Analysis following a national methodology (the PVTRIN project provides most of the information needed for this)
- This Occupational Analysis will have to be verified by ANC appointed experts and validated by a Sector Committee
- The next step is to make an Occupational Standard (following another national methodology) which will also have to be verified by ANC appointed experts
- Once the Occupational Analysis and Occupational Standard are validated, we can proceed to develop the national qualification according to the Occupational Standard
- This will also be verified by the ANC appointed experts and then validated by the National Counsel for Adults Vocational Training
- Finally the qualification will be validated by the Sector Committee and approved by the Board of the National Counsel for Adults Vocational Training

In Romania the following organisations are also accredited to ISO/IEC 17024 for the certification of persons:

ARoENd - Asociatia Romana de Examinari Nedistructive / Organism de certificare persoane
Bucuresti, Str. Soldanului nr. 7, bl. 137, sc. A, ap. 4, sector 4,www.aroend.ro

Institutul National de Cercetare-Dezvoltare in Sudura si Incercari de Materiale - ISIM Timisoara / ISIM CERT END - Organismul de certificare persoane
Timisoara, B-dul Mihai Viteazul nr. 30, judetul Timis, CP 300 222
www.isim.ro

ISCIR - CERT SA / ISCIR- CERT DCPS
Bucuresti, Str. Sfantul Elefterie nr. 47-49, sector 5, CP 050524

www.iscircert.ro

Miscarea Romana pentru Calitate / MRC-CERT - Organismul de Certificare Persoane
Craiova, Str. Mihail Strajan nr. 14, bl. b3, sc. 3, ap. 9, Punct lucru: Str. C. D. Fortunescu nr.18, judetul Dolj, CP 200583
www.mrco.ro

It is notable that none of the above includes the certification of PV installers (including PVTRIN installers) in the scope of their accreditation and there can be no guarantee that in the future these certification bodies will include PV or PVTRIN in there accreditation schedules. However, to facilitate the certification of renewable energy system installers (which would include PVTRIN installers) Romania has proposed a special structure for the accreditation of the training courses for so-called 'blue workers' in the national roadmap in the 'Romanian Buildup Skills' project.

Discussions concerning the development of a new Romanian National Qualification (e.g. for PV installers) have also been held with the Romanian National Authority for Qualifications (ANC). This is a new organisation formed from the merger of ACPART (the EQF National Contact Point for Romania) and the former National Counsel for Adults Vocational Training.

Spain

Currently no certification bodies have been engaged to issue PVTRIN installer certificates following the pilot courses. This is because Spain is already fulfilling the objectives and requirements pursued by Directive 2009/28/EC and has 2 PV skill-based professional qualifications, in the National Professional Qualifications Catalogue (CNCP), defined by INCUAL (National Qualifications Institute). The General Council for Vocational Training (Sp.acronym CGFP) is the governing body of INCUAL, although organisationally it is attached to the Secretariat-General of Education (Ministry of Education and Science). These are:

- ENA261-2 Assembly and maintenance of photovoltaic solar installations - Level2
- ENA263-3 Organisation and projects of photovoltaic solar installations - Level 3

These qualifications are used in two already existing certification schemes for PV installers. developed by SEPE (Public Employment National Service) which serve as credentials allowing these professionals to work as installers within the scope of the 2011-2020 NREAP. These are:

- Professional certification for Assembly and maintenance of photovoltaic solar installations-Level2 (RD1381/2008)
- Professional certification for Organisation and projects for photovoltaic solar installations Level 3 (RD1215/2009)

During the project TECNALIA has been in contact with organisations related to the Ministry of Education and the Ministry of Labour (INCUAL and SEPE respectively) to gain recognition of the PVTRIN training course.

A possible solution has been identified in which PVTRIN students may apply for PV professional certification for assembly and maintenance of photovoltaic solar installations – Level 2, following the agreed procedure of evaluation and accreditation of skills acquired through work experience or non-formal training. This will involve recognition of the training received from the PVTRIN training course in addition to other informal training and work experience of PVTRIN installers.

Any learning provider ‘recognised’ by the government department responsible for qualifications at national or in each autonomous community level to deliver PV certification courses will be able to deliver the PVTRIN training course.

In addition to this TECNALIA is in negotiations with FENIE (as National Installer Association) to make an application to the General Council for Vocational Training (Sp.acronym CGFP) for the PVTRIN course to be officially recognised and to request that INCUAL includes PVTRIN training as part of the Spanish PV Professional Certifications.

During the project TECNALIA has been in contact also with certification bodies accredited to ISO/IEC 17024 and EN 45011, but whose areas of expertise are not compatible with the certification of PV installers (listed below). However, given that Spain already has professional qualifications and certification schemes for PV installers it is unlikely that these organisations will consider increasing the scope of their accreditation to include PV installers.

Two certification bodies accredited to ISO/IEC 17024 for the certification of persons have been identified although both specialise in the certification of installers of gas equipment. These are:

CONAIF-SEDIGAS Certificación S.L.
C/ Antracita, 7 28045 Madrid

www.conaifsedigas.es

ASELAR ENTIDAD CERTIFICADORA, S.L.
C/ Félix Aramburu, 1. Oficina 4. 33007 - Oviedo

www.aselar.info

There are five other certification bodies also accredited to ISO/IEC 17024 but whose areas of expertise are not compatible with the certification of PV installers. These are:

ASOCIACIÓN ESPAÑOLA DE ENSAYOS NO DESTRUCTIVOS. ÓRGANO DE CERTIFICACIÓN (CERTIAEND)
C/ Bocángel, 28 - 2º Izda. 28028 Madrid (MADRID)

www.aend.org

Accredited for the certification of persons performing non-destructive testing

ASOCIACIÓN ESPAÑOLA PARA LA CALIDAD, CENTRO DE REGISTRO Y CERTIFICACIÓN DE PERSONAS (CERPER)
Claudio Coello, 92 28006 Madrid (MADRID)

www.aec.es

Accredited for the certification of persons undertaking auditing of quality management and environmental management systems

ASOCIACIÓN ESPAÑOLA DE SOLDADURAS Y TECNOLOGÍAS DE UNIÓN (CESOL)
Calle Margarita Salas, 16, 1ª planta. Parque Tecnológico de Leganés 28918 Leganés (MADRID)

www.cesol.es

Accredited for the certification of persons undertaking the inspection of welders and welding

ASOCIACIÓN ESPAÑOLA DEL GAS (SEDIGAS)
Plaza Lesseps 33 Entlo. 3ª A 08023 Barcelona (BARCELONA)

www.sedigas.es

Accredited for the certification of persons undertaking welding of polyethylene types A, B and C

ASOCIACIÓN ESPAÑOLA DE INGENIERÍA DE PROYECTOS
UNIVERSIDAD POLITÉCNICA DE VALENCIA - ETSII CAMINO DE VERA, S/N, Edificio 5 J. Dpto de Proyectos de Ingeniería 46022 Valencia (VALENCIA)

www.aeipro.com

Accredited for the certification of persons undertaking project management

In addition to the ISO/IEC accredited certification bodies a number of certification bodies accredited to EN 45011 have also been identified. These include AENOR (Spanish Association for Standardisation and Certification). Their scope of accreditation includes the certification of solar thermal products and they have expressed an interest in PVTRIN.

ASOCIACIÓN ESPAÑOLA DE NORMALIZACIÓN Y CERTIFICACIÓN
C/ Génova, 6. 28004 Madrid

www.aenor.es

Accreditation bodies for each PVTRIN participating country

Country	National Accreditation Body	Website
BULGARIA	Bulgarian Accreditation Service (BAS)	www.nab-bas.bg
CROATIA	Croatian Accreditation Agency (HAA)	www.akreditacija.hr
CYPRUS	The Cyprus Organization for the Promotion of Quality (CYS-CYSAB)	www.cys.mcit.gov.cy
GREECE	Hellenic Accreditation System S.A. (ESYD)	www.esyd.gr
ROMANIA	Romanian Accreditation Association (RENAR)	www.renar.ro
SPAIN	Entidad Nacional de Acreditacion (ENAC)	www.enac.es