



## TRAINING OF PHOTOVOLTAIC INSTALLERS

Development and implementation of a common  
certification scheme for PV installers

***Informational material for the training of  
National Associations on the PVTRIN  
certification scheme***

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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

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### 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
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## **1 Summary and overview of the Work Package**

Under WP6 the PVTRIN consortium aims to address different target groups in order to disseminate the PVTRIN objectives and results, to give value to the certification scheme proposed, to mobilise a wide target audience and to facilitate transferability. Specifically, special effort will be put into driving the acknowledgement and adoption of the certification scheme by many European countries that do not have a system in place already or did not succeed to implement Art.14 of the RES Directive yet.

In order to succeed however the appropriate communication tools and channels need to be activated: workshops and other events, website, printed media, electronic media, brochures, newsletters and different presentations. The key national actors will also be engaged in supporting the dissemination campaign developed by the consortium partners.

## 2 Introduction

**Deliverable 6.14**, developed under the leadership of EPIA, focused on the information and training material needed by different National Associations in order to develop/implement/promote the PVTRIN scheme as a full training and certification package in their country in the future. Furthermore, under this deliverable, the partners of the consortium and mostly EPIA, through consulting selected National contacts on which are the key requirements/tools/legal constrains to implement such new schemes and how they will be overcome mostly based on replication and sustainability of the action.

## 3 Methodology for engaging National Associations

For the wide acknowledgement of the PVTRIN certification the support of a different group of stakeholders is essential. This group comes together from the existing networks of the consortium partners. The network of National Associations (NAs) linked to EPIA was used to disseminate the certification scheme. For e.g. installers are more than often connected to NAs than EPIA itself which increases the audience and facilitates the use of the existing material. The training of NAs on the developed certification schemes leaded and will continue to lead to the activation of a partner group.

### 3.1 Training and discussions during face-to-face meetings

EPIA's internal events (General Assembly, Annual General Meeting etc) and external events (participation in international/national fairs and exhibitions, conferences and other project meetings) provided the perfect opportunity to meet representatives of NAs and have a face-to-face exchange with them on the main messages of PVTRIN and feedback on how they could take in board. Also, by looking at the time scale:

Internal Events, which EPIA is organising FOR its members and the ones that are organised WITH its members.

The Annual General Meeting of EPIA is the occasion when all the members gather for a whole day event to exchange market information, inform the others of the difficulties that they are facing but also of the new activities and projects they are implicated in. It is on this occasion that NAs have the possibility to get the most up-to-date information as they are not directly implicated in everyday activities or the Working Groups of EPIA.

Another good example of such events and meetings was the European **National Associations Task Force meeting held on 25 September 2012 in Frankfurt, during the 27th EU PVSEC**. NAs were presented with the main objectives of the PVTRIN project while asked to give feedback on the different stages of the training and certification procedure, major shortcomings that they already

see when considering their National legal context and main suggestions on how to improve the methodology and materials in order to meet their future national commitments and targets.

Events that EPIA is organising WITH the support of its members are mainly the ones that fall in the framework of another European project that EPIA is partner in. For example, the General Assembly of the European Photovoltaic Technology Platform gathers more than 120 participants every year and gives a special importance to quality of services, training and qualification in the PV Sector. It has actually developed materials, with the support of National Associations, as the Installers Leaflet and it continues to have as one of its main objectives the promotion of training and education programs.

External events include fairs, exhibitions and conferences throughout the year where EPIA and its members have a constant presence.

- SolarExpo- usually organised in May in Italy
- InterSolar- usually organised in June in Germany
- EU PVSEC- usually organised in September in various locations

With the occasion of these fairs and external events EPIA is trying to hold at least one National Associations Task Force meeting.

### 3.2 Main materials and how they can be used

As contact with the national installers and industry is much effective through National Associations, the PVTRIN consortium developed a wide range of useful materials which represent a concrete basis and support for the work of NAs.

- The list of **existing certification schemes in the EU** and **existing state of the art** are setting the scene and offering a clear and structured picture of the stage in which certification is in throughout Europe. This will support NAs when they need to advise their members and represents a basis for comparison and multiplication of good practices later on.
- **Assessors Handbook**- contains guidance for assessors of both the PVTRIN written and practical examinations. It offers an explanation on the role of an assessor in upholding the quality of the PVTRIN certification scheme. This includes some fundamental rules for successful and effective assessments based on the collection and review of evidence.
- **Certification handbook**- contains guidance for the training providers and certification bodies that intend to implement the PVTRIN certification scheme. Modifications may be applied by PVTRIN national technical committees according to national and/or local requirements.
- **Trainer's Guide**- a well build and designed brochure /guidebook that presents the key components of the PVTRIN training course, describes the requirements for the training and

certification procedures. It also provides suggestions for the training delivery strategies and lists the suggested resources.

The trainers' guide is neither prescriptive nor exhaustive and training providers may need to customise and compliment this material to ensure the efficient delivery of the training and that the learning needs of their target groups are met, taking into account the national conditions as regards PV installers training needs and national regulations' requirements.

- **EU Roadmap for the adoption and implementation of the certification scheme across Europe.** This deliverable describes how the PVTRIN certification scheme could fit all the different countries' situations, as regards with PV training and certification, and be adopted accordingly in order to be sustainable in the future. The adoption could refer to full "PVTRIN certification and training course" package adoption or best possible incorporation to the existing schemes. Such adoption and further promotion after the completion of the project the scheme could survive and naturally evolve, following the needs and the trends of the PV industry and market. The roadmap could be an easy tool of for the decision makers to apply the PVTRIN scheme in the short and mid-term future.

### 3.3 Lessons learnt

In the case of National Associations having the relevant documentation and materials translated in the country's **language** is an essential prerequisite for the successful dissemination of these tools and materials. Relevant and user-friendly material exist already, therefore EPIA will ask its NAs contact to concentrate on investing in the translation of these so they become even more accessible on a local and regional level.

## 4 Methodology towards adoption and replication of the PVTRIN scheme

In order that NAs will successfully contribute to the replication of the PVTRIN scheme certain "must" guidelines should be followed. In general NAs can be the initial main link that could provide a common platform and coordinate the activities among the main stakeholders involved until the final adoption of the PVTRIN scheme.

Experience showed that not all NAs were aware of the procedure that should be followed and the relevant stakeholders involved in it. Moreover, sometimes the body in their own country that is directly responsible for the implementation of Directive 2009/28/EC of the European Parliament was unclear too. The extensive list provided by the PVTRIN project offers an easy to reach database for all countries based on which the communication can be initiated and sustained on the long run.

*More detailed information on the respective contacts can be found on the Appendices of the EU roadmap deliverable.*

Below, the most relevant stakeholders are mentioned. Those can be contacted based on the market needs of each country.

- ❖ **Concerted Action for RES (CA-RES)** – *see Appendix A of the EU roadmap*
  - Ministries (e.g. Energy, Industry, Employment)
  - Energy Agencies
  - National Research Centres and Laboratories
  - Energy Institutes
  
- ❖ **Certification bodies** – existing PVTRIN certification bodies either independently or working with certification bodies in the identified market.
  
- ❖ **Accreditation bodies** – by facilitating the accreditation of training organisations and certification bodies. – *see Appendix B of the EU roadmap*
  
- ❖ **National Bodies for training and qualifications** – by recognising and promoting the PVTRIN training course and certification scheme. – *see Appendix C of the EU roadmap*
  
- ❖ **Trade organization and professional networks** (e.g. electricity and PV associations) - by promoting the benefits of the PVTRIN (and other) training courses and certification schemes
  
- ❖ **Universities, Training Organisations and National Experts** – by adopting the PVTRIN training course and/or certification scheme and contributing to the adaption to national requirements of the certification scheme.
  
- ❖ **EPIA + other PVTRIN partners** – through promoting the PVTRIN certification scheme and providing assistance to local organisations in the setting up and operation of the PVTRIN training course and certification scheme.

The major differences amongst countries as regards existing or not training and certification schemes, makes it difficult to harmonise horizontally very detailed and complicated training and certification schemes; national requirements must be taken into account to adapted materials. The setting up of NCCs and their subsequent feedback of local knowledge and market requirements was an essential resource to the project.



## 5 Database of relevant contacts

Country	Name 1	Name 2	Organisation
AT	Anita	Floh	Photovoltaic Austria
AT	Vera	Liebl	Photovoltaic Austria
AT	Hans	Kronberger	Photovoltaic Austria
AT	Christian	Kirchwegger	Photovoltaic Austria
BE	Frank	Gérard	Edora
BE	Jo	Neyens	PV- Vlaanderen vzw
BE	Annabelle	Jacquet	Edora
BE	Guillaume	Declève	RBF - Renewable Business Facilitator
BG	Nikola	Gazdov	Bulgarian Photovoltaic Association
ES	Tomas	Diaz	UNEF - Unión Española Fotovoltaica
ES	Nuria	Fuentes	UNEF - Unión Española Fotovoltaica
ES	Mischa	Bechberger	APPA - Spanish Renewable Energy Association
ES	Anta	Javier	UNEF - Unión Española Fotovoltaica
ES	Javier	Munoz	APPA - Spanish Renewable Energy Association
ES	José	Donoso	UNEF - Unión Española Fotovoltaica
ES	Marcelino	Muñoz	APPA - Spanish Renewable Energy Association
ES	Eduardo	Collado	UNEF - Unión Española Fotovoltaica
ES	Lucia	Dolera	UNEF - Unión Española Fotovoltaica
ES	Ruth	Heras	UNEF - Unión Española Fotovoltaica
EU	Simas Ramutis	Petrikis	Photovoltaic Technology and Business Association
EU	Gaynor	Hartnell	Solar Trade Association
FR	Eva	López	APPA - Spanish Renewable Energy Association
FR	Philippe	Delaisse	EF4 - Energie Facteur 4 ASBL SYNAIP Syndicat National des Installateurs
FR	Erwan	Hildenbrand	Photovoltaïque
HE	Maria	Georgiadou	HELAPCO - Hellenic Association of PV Companies
HE	Stelios	Psomas	HELAPCO - Hellenic Association of PV Companies
HU	Gabor	Iles	SavESCO
HU	Béla	Glattfelder	European Parliament/ Hungarian Association
IT	Fabiola	Bruno	APER - Associazione Produttori Energia Rinnovabile
IT	Ilaria	Cavalli	GIFI - Anie Federazione
IT	Luca	Zucchelli	Assosolare
IT	Andrea	Zanolla	Assosolare
IT	Manola	Canali	Assosolare
KR	Yoonjoo	Lee	KOPIA - Korea Photovoltaic Industry Association
NO	Jon	Dugstad	Intpow - Norwegian Renewable energy Partners APESF- Associação Portuguesa de Empresas de Solar
PT	Birgit	Herbers	Fotovoltaico
PT	Rachel	Masson	Enerplan
PT	Isabel	Cancela de	APREN - Portugese Renewable Energy Association

		Abreu	
<b>PT</b>	Joana	Freitas	APISOLAR - Associação Portuguesa da Industria Solar
<b>PT</b>	Leonor	Barradas	APESF- Associação Portuguesa de Empresas de Solar Fotovoltaico
<b>PT</b>	Karl	Moosdorf	APESF- Associação Portuguesa de Empresas de Solar Fotovoltaico
<b>PT</b>	Joao	Carvalho	APISOLAR - Associação Portuguesa da Industria Solar
<b>PT</b>	Karim	Megherbi	APESI
		João	
<b>PT</b>	Maria	Rodrigues	APISOLAR - Associação Portuguesa da Industria Solar
<b>PT</b>	Antonio	Sa da Costa	APREN - Portugese Renewable Energy Association
			APESF- Associação Portuguesa de Empresas de Solar Fotovoltaico
<b>PT</b>	Alexandre	Cruz	
<b>RO</b>	Dan	Teodoreanu	Research Institute for Electrical Engineering
<b>RO</b>	Silviu	Dumitrescu	EST SOLAR
<b>SK</b>	Martin	Toman	SAPI - Slovak Association of Photovoltaic Industry
<b>SK</b>	Veronika	Galeková	SAPI - Slovak Association of Photovoltaic Industry
<b>SK</b>	Marek	Harvis	SAPI - Slovak Association of Photovoltaic Industry
<b>SK</b>	Karol	Galek	SAPI - Slovak Association of Photovoltaic Industry
<b>TK</b>	Sener	Oktik	GENSED
<b>TK</b>	Mehmet	Ozer	Gunese (Turkish Association)
<b>UA</b>	Iryna	Nemova	Ukrainian Photovoltaic Association APEU/IBC Centre
<b>UA</b>	Julia	Berezovski	Ukrainian Photovoltaic Association APEU/IBC Centre
<b>UK</b>	Ian	Jenks	British Photovoltaic Association (BPVA)
<b>UK</b>	Reza	Shaybani	British Photovoltaic Association (BPVA)

## 6 Conclusion

National Associations represent a key player in the dissemination of the tools and materials developed under the PVTRIN project. Furthermore, they will have an essential role in taking the work forward and supporting their own countries, through the National Certification Bodies, in the implementation of Art 14 in the RES Directive.

PVTRIN, at the end of the project lifetime, is proud to have delivered a rich selection of findings, data and practical material that can be used by NAs in different stages of the implementation process: from raising awareness of the existence of the scheme (PVTRIN leaflet, website etc) to the actual discussions with certification bodies and the transposition of the scheme by adapting to the national context.