



# **Install+RES: installers' qualification as tool to raise awareness and ensure quality**

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**WIP - Renewable Energies**  
**Munich, Germany**

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**Copenhagen, Denmark, 27 April 2012**



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# Content

- Overview of the Install+RES project
- The Install+RES training courses
- How installers' qualification can raise awareness and ensure quality



# Overview of the Install+RES project



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- Install+RES = install more renewable energy systems!
- Establishment of training courses for trainers and installers of small-scale renewable energy systems
- Co-financed by the European Commission, within Intelligent Energy Europe (IEE) Programme
- May 2010 – April 2013



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 **instalRES**  
www.resinstaller.eu



Photovoltaic - PV



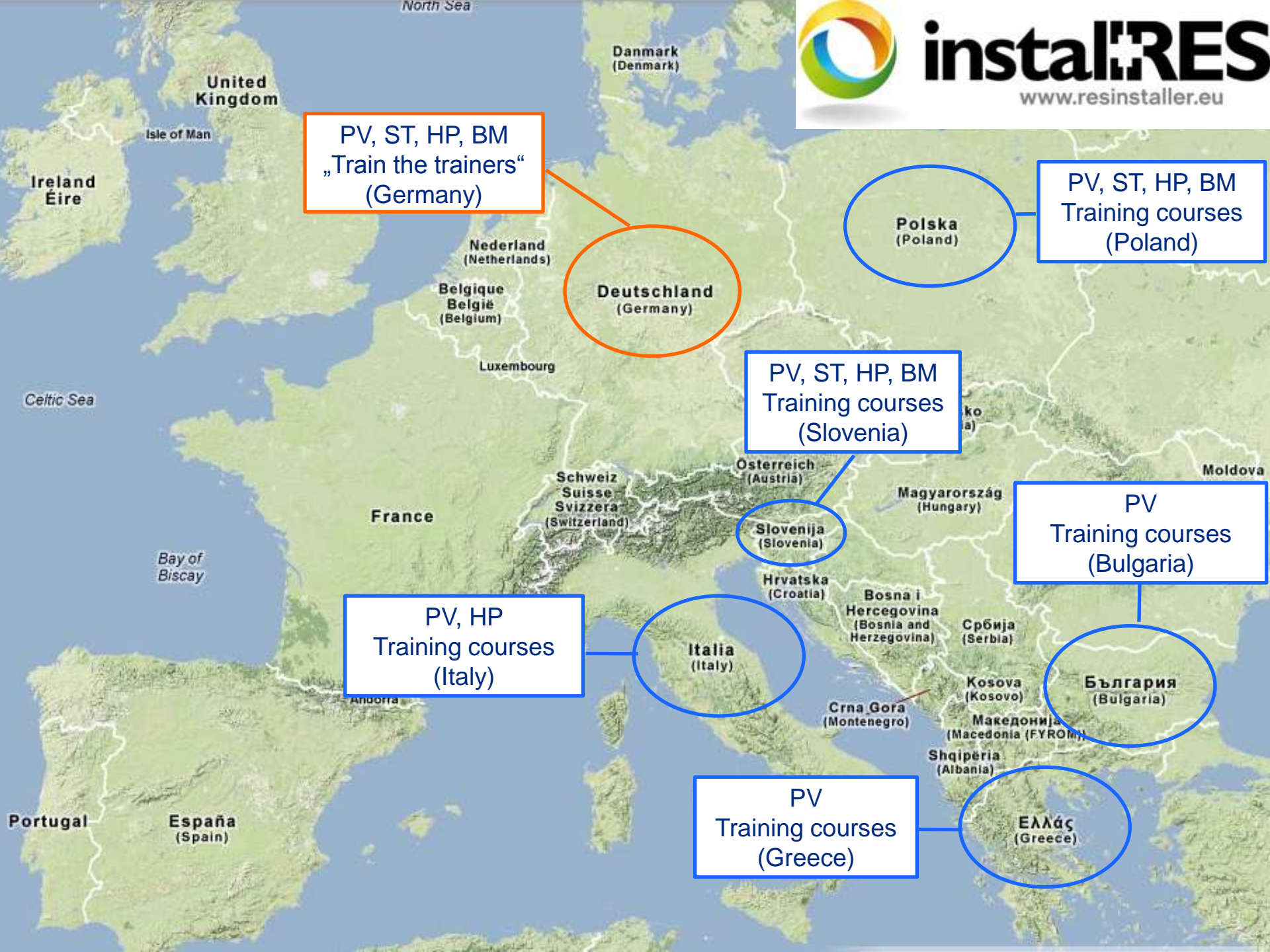
Solar Thermal - ST



Heat Pump - HP



Biomass - BM



PV, ST, HP, BM  
„Train the trainers“  
(Germany)

Polska  
(Poland)

PV, ST, HP, BM  
Training courses  
(Poland)

Deutschland  
(Germany)

PV, ST, HP, BM  
Training courses  
(Slovenia)

PV  
Training courses  
(Bulgaria)

PV, HP  
Training courses  
(Italy)

Italia  
(Italy)

България  
(Bulgaria)

PV  
Training courses  
(Greece)

Ελλάς  
(Greece)



# The Install+RES training courses



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Overview on Rational Use of Energy (RUE) and Renewable Energy Sources (RES)

Fundamentals of heating engineering

Fundamentals of electrical engineering

Qualification for solar thermal systems

Qualification for photovoltaic systems

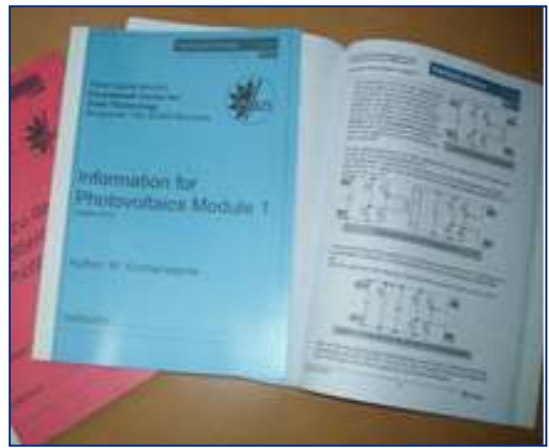
Qualification for heat pumps

Qualification for biomass systems

Exam

Certificate of Small Scale Renewable Energy Systems\* Installer

\* Solar thermal systems and / or photovoltaic systems and / or heat pumps and / or biomass systems



Training Centre for Solar Technology, Munich, Germany  
 Wilhelm-Koch-Str. 10  
 Solar-Thermis 1 Info Section 2

**instalRES**

### 2. Fundamental Functions of Solar Thermal Collector Technology

Solar thermal systems can be built in many variations, as small installations or as large thermal systems. Depending on the intended application, solar energy is often used for preparing warm drinking water (WDW) or for auxiliary heating. Due to the variability of solar irradiation during a day and a year, solar thermal systems are built as bi-valent heating systems. This means that along with solar storage another heat source is always included in the system technology, for example, a condensing boiler.

The following diagram shows a solar thermal system that is common today.

This system is composed of the following documents:

- > Solar collector as a flat plate collector or as a vacuum tube collector;
- > Solar storage with a heat exchanger;
- > Recirculation pump with fittings;
- > Solar tube circuit with thermal insulation;
- > Safety installations in the solar circuit;
- > Regulation with the corresponding sensors.

Standard solar thermal system. Source: DGS



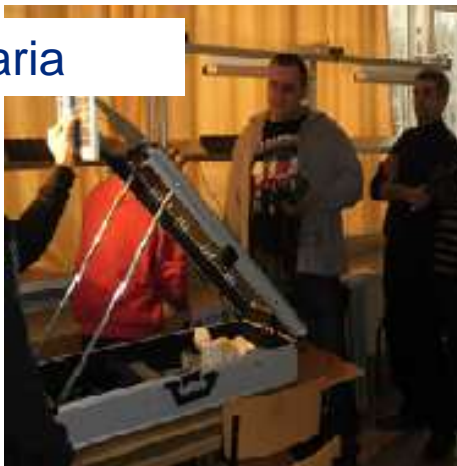
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Bulgaria



Greece



Slovenia



# Hands on learning



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PV „Train the trainer“



Biomass „Train the trainer“



**.. also for the trainers!**



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# Tandem approach



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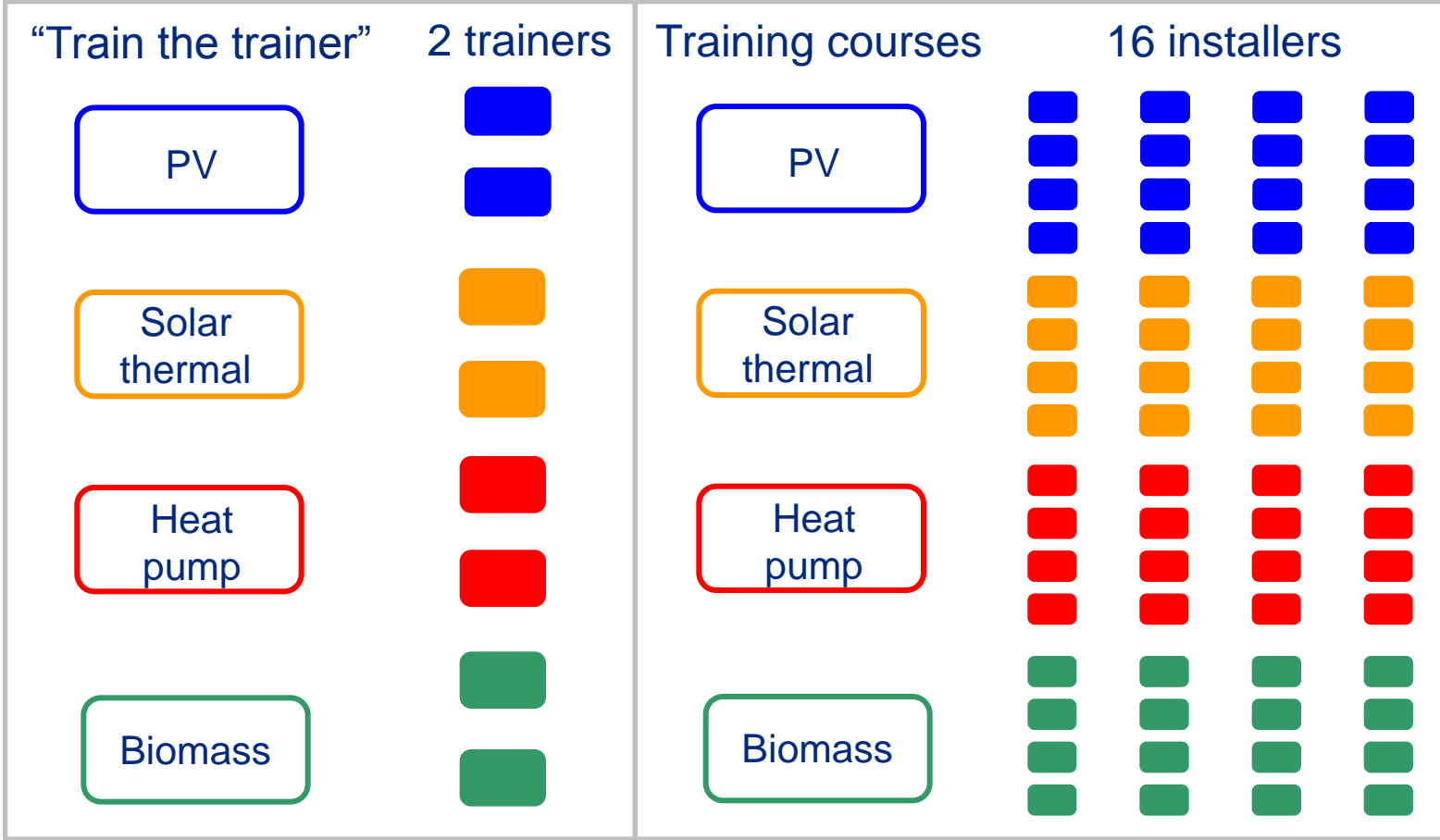
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# Multiplier effect





Welcome to the **Install+RES** website

In this website you will find all information to become an installer of small-scale renewable energy systems (photovoltaic, solar thermal, heat pumps and biomass systems) in buildings.

Training courses for installers of small-scale renewable energy systems in buildings

Training courses for installers of small scale renewable energy systems (photovoltaic, solar thermal, heat pumps and biomass systems) in buildings are now available in [Bulgaria](#), [Greece](#), [Italy](#), [Poland](#) and [Slovenia](#). Keep checking this website for further information. Do not miss the opportunity to attend one of the Install+RES training courses and to become an installer of the most innovative and market oriented energy technologies of the future.

[Learn more on how to participate to the Install+RES courses](#)



Wilhelm Kirchensteiner, Bildungszentrum für Solartechnik / Training Centre for Solar Technology

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Username

Password

Remember Me

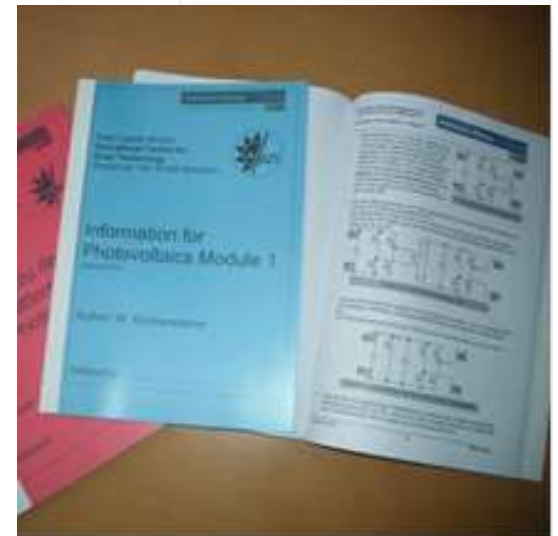
[Forgot your password?](#)  
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## Training Material

Training material for installers of small-scale Renewable Energy Systems (RES) in buildings

- [Photovoltaic](#) (German, English, Bulgarian, Greek, Italian, Polish, Slovenian)
- [Solar Thermal](#) (German, English, Bulgarian, Polish, Slovenian)
- [Heat Pumps](#) (German, English, Bulgarian, Italian, Polish, Slovenian)
- [Biomass](#) (German, English, Bulgarian, Polish, Slovenian)





# How installers' qualification can raise awareness and ensure quality



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Hands on learning + tandem approach + multiplier effect



Ensure quality



Raise awareness



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# Thank you for Your Attention



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