

Technical Seminar 2013: Truly Renewable Heating & Cooling

GeoTrainet and European Wide Training Developments

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Introduction

All of us closely involved with the nascent renewables industry understand that new skills are required by the workforce to reliably achieve the Energy Efficiency & Carbon Reduction Objectives required by European Legislation.



This need for up-skilling at many level was originally recognised by the European Commission 10 years ago who incorporated it into the IEE Programme.

Intelligent Energy Europe (IEE) is an Executive Agency created by the European Commission

Originally launched in June 2003 the IEE Programme forms part of the EU's Competitiveness and Innovation Framework Programme (CIP).

The purpose of the IEE Programme is to address the 'soft' barriers to energy policy and implementation.

It aims to contribute to secure, sustainable and competitively priced energy for Europe, by fostering energy efficiency and the rational use of energy resources as well as by promoting new and renewable energy sources and supporting energy diversification.



Underlying Primary European Legislation

EU Directive 2009/28/CE - (Directive on the promotion of the use of energy from renewable sources – The RES Directive) came into force on 25 June 2009.

It establishes a common framework for the use of energy from renewable sources in order to limit greenhouse gas emissions and to promote cleaner transport

Particularly relevant is:

Article 14

Information and Training



Article 14 – Information and Training

3. Member States shall ensure that certification schemes or equivalent qualification schemes become or are available by 31 December 2012 for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps.

Those schemes may take into account existing schemes and structures as appropriate, and shall be based on the criteria laid down in Annex IV (next slide).

Each Member State shall recognise certification awarded by other Member States in accordance with those criteria.

Annex IV – Certification of Installers

(N.B. Installers i.e. The Man in the Van)

The certification schemes or equivalent qualification schemes referred to in Article 14(3) shall be based on the following:

- **The training shall have both a theoretical and a practical part** and at the end of the training:
"the installer must have the skills required to install the relevant equipment and systems to meet the performance and reliability needs of the customer, incorporate quality craftsmanship, and comply with all applicable codes and standards, including energy and eco-labelling"
- **Certification or qualification shall be achieved by an examination at the end of the training course.** leading to the award of a certificate or qualification.

IEE Training Initiatives

Directly relevant to Heat Pumps are:

- **EUCert** - <http://www.ehpa.org/european-certified-hp-installer/>

The European Certified Heat Pump installer programme (EUCert) aims at implementing a training and certification programme for heat pump installers. This is for the man in the Van

- **Geotrinet** - <http://www.geotrinet.eu>

The objective of the Geotrinet project was to develop a professionally-oriented European education programme to support the geothermal heating and cooling market.

There are a number of different groups of professionals involved in any GSHP installation. The GEOTRAINET project focused on two of these groups:

- **Designers** (those who carry out feasibility and design studies, including geology)
- **Drillers** (who make the boreholes and insert the pipework). – although this has now been widened to cover the construction of all types of Ground Heat Exchangers (GHE's)

EU Cert - Overview

- The present EUCert certification programme has grown out of a previous EU funded project which was completed in December 2006 which was aimed to initiate a European training and qualification campaign for installers in the field of heat pump technology.
- Subsequently the European Heat Pump Association (EHPA) decided to further develop the initiative and ensure the qualification was fit for purpose.
- This work continues.....



GSHP
association

GEO
TRAINET



gtskill



UNIVERSIDAD
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DE VALENCIA



GEOTRAINET:

Geo-Education for a sustainable geothermal heating and cooling market'

This project addressed the skills essential to Drillers and Ground Source Designers and ran from September 2008 to February 2011.



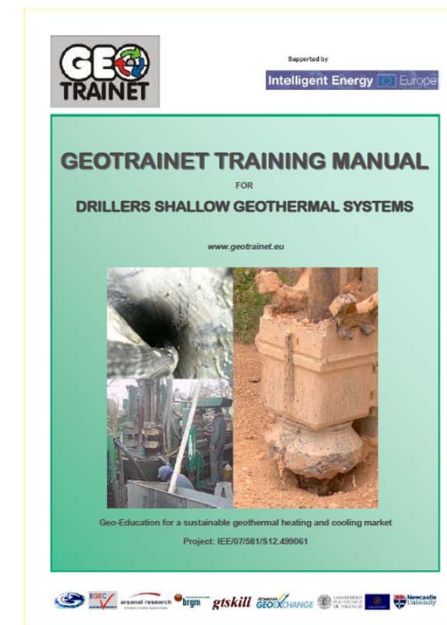
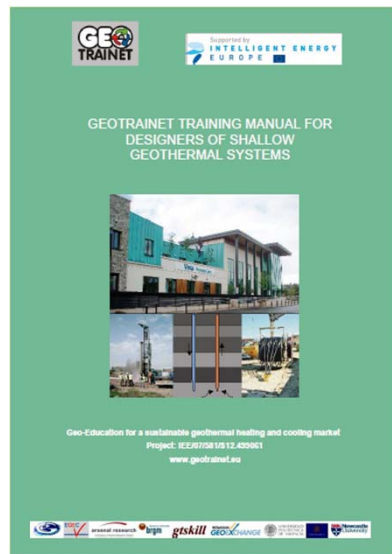
Geo-Education
for a sustainable geothermal
heating and cooling market



Geotrainet - Overview

The principle results of the project:

- The Creation of an international panel of experts on Geothermal Energy Heating and Cooling to provide the knowledge required .
- Detailed evaluation of skills required to design, drill and install GSHP
- Creation of curricula and programmes, for designers and drillers of shallow geothermal facilities
- Creation of training tools & didactic materials to support the training including:
 - GEOTRAINET training manual for Designers of shallow geothermal systems
 - GEOTRAINET training manual for Drillers of shallow geothermal systems
- Presentations for training courses: Designers and Drillers
- Best Practice Database of Ground Source Heat Pump Systems
- Developed an e-learning platform for shallow geothermal applications:
- Developed a European structure for training
- Developed a proposal for a European Certification framework



Project deliverables. See...

<http://www.geotrainet.eu>



European Education Committee

**Training
Board**

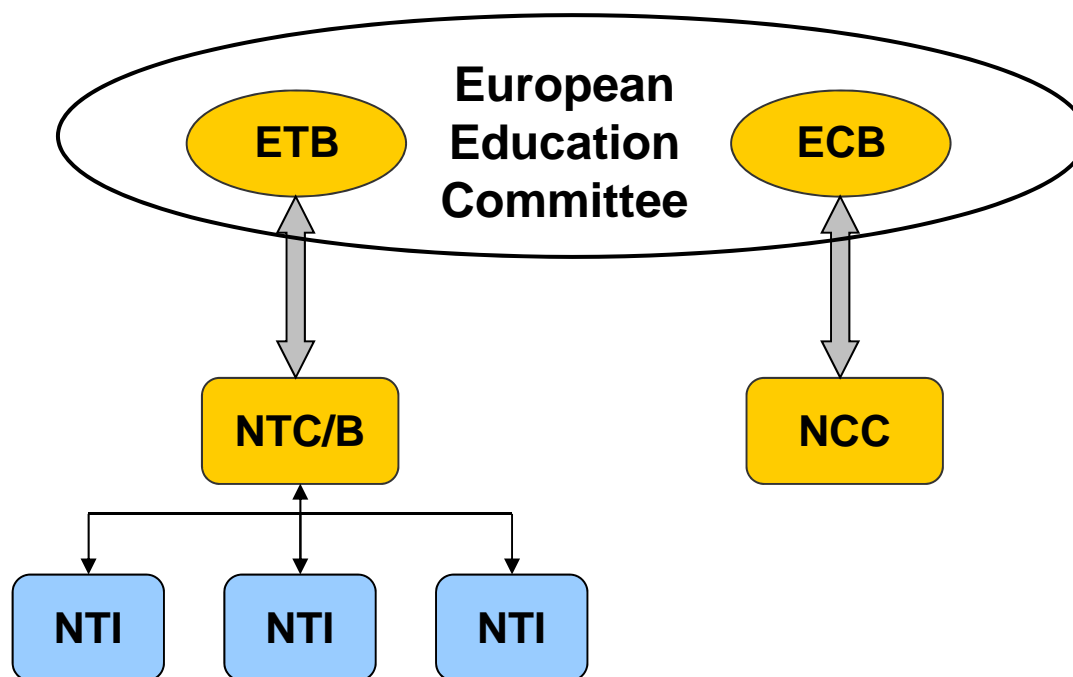
**Certification
Board**



Geo-Education
for a sustainable geothermal
heating and cooling market



European Education Committee

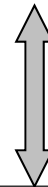


Structure of Training Board

Is a subcommittee of the Education Committee



European Training Board

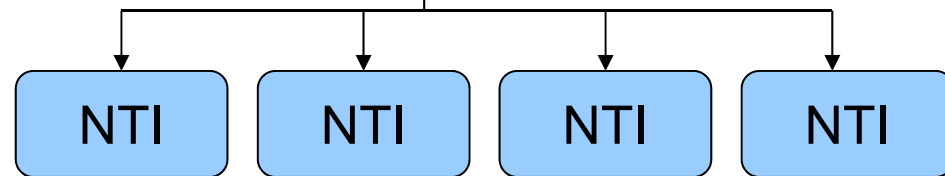


National Coordinator of the GEOTRAINET training program



National Training Coordinator/Board

Various:
National Training Institutions



NTI

NTI

NTI

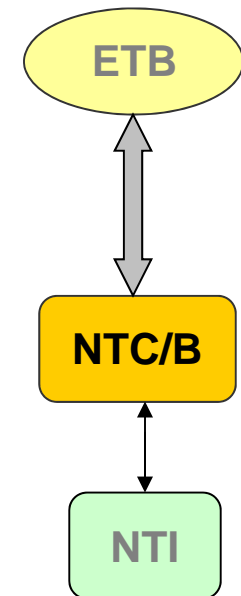
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National Training Coordinator/Board

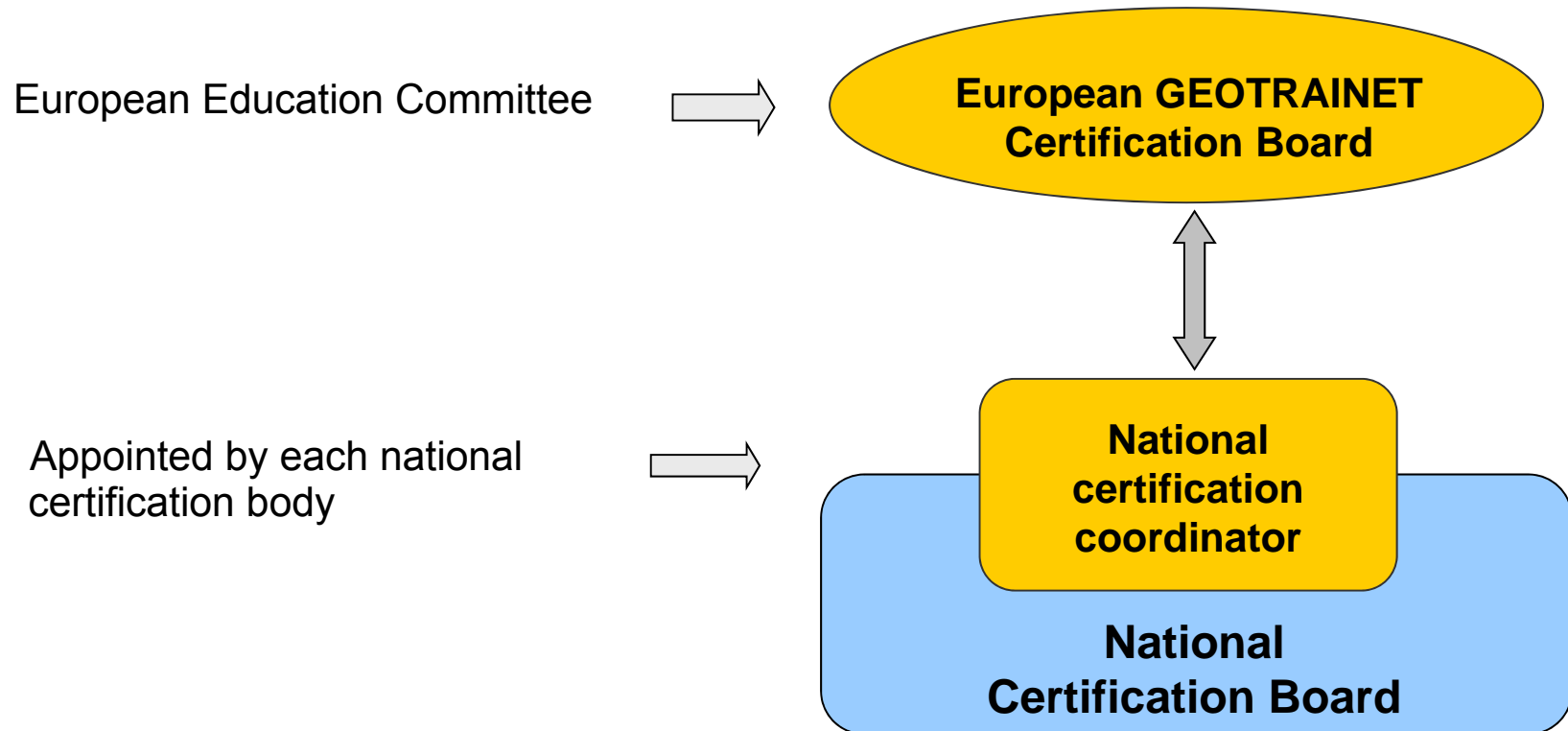
GSHPA/BDA is now working closely with Geotrinet to act as National Coordinator and implement training in the UK

- Main Tasks
 - Ensure Curriculum & content are mapped as appropriate to QCF's (Qualifications and Credit Framework) & NQF's (National Qualifications Framework) & European Qualification Framework (EQF)
 - Implementation of the international training standard and ... definition of specific adaptations needed at national scale
 - Report to international education committee considering required amendments and adaptations of training standard
 - Notification of any changes of training system to national training institutes



Keeping the quality standards at national level

Structure of Certification Board



Geotrinet – Moving Forward

- An International Geotrinet Association for shallow geothermal education and training has (just) been founded by European Geothermal Energy Council (EGEC) and European Federation of Geologists (EFG).
- This association will deliver training and certification programmes in the field of shallow geothermal energy. These will be recognised all over Europe, and provide benchmark standards for further education in participating countries.
- The training programmes will be aimed at GSHP installers and designers and will provide the market with trained experts in the field of shallow geothermal technology who can design, install and commission efficient systems.

So what about training in the UK?

- The Sector Skills Councils have formed the Green Skills Alliance (Build Up Skills)
- Construction Industry Council – Construction & Built Environment Higher Education Forum
- National Qualifications Platform.
- MCS are developing Competence Criteria
- Various Training Organisations are already active.
- RHI Voucher Scheme

Green Skills Alliance & Build Up Skills

Build Up Skills UK is an alliance of four Sector Skills Councils (SSCs):

- Asset Skills
- CITB-ConstructionSkills
- Energy & Utility Skills
- SummitSkills.

Working in collaboration these SSCs are undertaking a programme of research to ensure that employers in the built environment sector in the UK have the skilled workforce (specifically craft and technical 'blue collar' workers) required to meet EU 2020 energy efficiency targets:

- to reduce energy consumption by 20%;
- to reduce greenhouse gas emissions by 20%;
- to meet 20% of energy needs through renewable resources.



Build Up Skills - Who



Who are the target groups to be up-skilled?

- Tradesmen
 - bricklayer, carpenter, plumber, electrician, roofer, plasterer, glazier, concrete worker, steel worker, ...
- On site supervisors
 - groundwork, walls, roof, windows, doors, chimneys, heating / cooling systems, air handling, lighting, other services, ...
- Energy system installers
 - Installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems, heat pumps
 - Specialists who select / size / check / inspect installations (gas boiler, oil boiler, solid fuel burner, under-floor heating, radiators, air handling units, cooling / air conditioning plant)

Build Up Skills - Why



The building sector plays a key role

- 40% of energy consumption in buildings
- RES Directive 2009/28/EC: Minimum requirements for RES in buildings
- Recast EPBD 2010/31/EU:
- Minimum energy performance requirements for (new and existing) buildings or building units must be set to achieve cost-optimal levels.
- New buildings will have to be nearly zero energy buildings by 31 December 2020 (public authorities 2018)

Build Up Skills - Summary

Build Up Skills is a Brussels initiative and is EU wide. It focuses on the training and skills of the UK's built environment and energy efficiency workforce

The 4 KEY objectives:

1. Embed energy efficiency knowledge into existing qualifications and frameworks
2. Address technical skills gaps and embed solutions into existing qualifications and frameworks
3. Establish and maintain appropriate quality assurance underpinned by appropriate accreditation
4. Address barriers to training that exist in the UK skills infrastructure

Thank you for listening...

<http://www.geotrainet.eu>

...Any questions?

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