

# CA-RES

WORKING GROUP 5

## Information and training



# Table of contents

1 In a Nutshell	3
2 One Topic in the Spotlight	5
3 Challenge Meets Solution	6
3.1 Member States' Experiences	12
4 Main Findings and Achievements	15
5 The Way Ahead	17
6 Abbreviations	18

### Authors:

Antonio Joyce, LNEG, Portugal  
Timo Määttä, MOTIVA Oy, Finland



# In a Nutshell

Working Group 5 (WG5) of the Concerted Action on the Renewable Energy Sources Directive deals with the topics of Information and Training.

Typically more than 35 participants representing 27 countries participated in the parallel sessions of all the plenary meetings and contributed to the overall results of the group.

Certification of installers and harmonization of the whole process was given particular attention during all the WG5 meetings due to the 31 December 2012 deadline of Article 14, point 3, ensuring certification schemes or equivalent qualification schemes for installers of 5 Renewable Energy (RE) technologies (small scale biomass boilers and stoves, solar photovoltaic, solar thermal, shallow geothermal and heat pumps).

Annex IV of the RES Directive provides criteria for this purpose and several aspects, including the legal ones, were discussed in depth during WG meetings. A great variety of situations was detected in the Member States (MS) in relation to the topic of certification of installers from voluntary to mandatory schemes, from schemes pointed to companies and schemes for individual installers. This was also the case in the implementation of the certification scheme itself, with some countries having a well-established process to other countries being in an initial phase of implementation. It is also clear that the envisaged difficulties in the implementation of Annex IV of the RES Directive were better understood by those MS that had already an ongoing process.

Harmonizing this situation was clearly necessary. Finding a common approach for the certification scheme that is comprehensive, easily implemented and accepted by all MS was essential in order to meet the RES Directive requirements for mutual recognition.

The responsible body for the certification scheme in the MS also varies from ministries (education, economy, planning and environment and others) to energy agencies and other bodies, including NGOs.

Several good examples of certification schemes are already in place in some MS and these can actually be an inspiration for a common approach at a European level. Some of these

## One Topic in the Spotlight

certification schemes were presented as case studies in the framework of WG5 meetings. EU programmes and projects provide a good framework for the interchange of knowledge and opinions between different stakeholders. For example a presentation on the project QualiCert was given during one of the initial meetings of WG5.

In order to help the administrative bodies that will carry out the process in each MS, guidelines for the implementation of the process were discussed in WG5 meetings with the aim of reaching a common ground for the certification process.

An important outcome from this group was the production of basic competences for the installers of the above mentioned five renewable energy technologies. These detailed tables can help MS reach the referred certification common ground.

Practically all MS now have a scheme already in place involving several stakeholders, namely professional associations, training centers, energy agencies and others. It is important to notice that in some countries periodic meetings are conducted between the several stakeholders in order to analyze the whole process.

The results from WG5 discussions, namely the Basic Competences of Installers Tables, are also being used by some of the national teams of the Build Up Skills initiative<sup>1</sup> to help reach a harmonization of the certification process of installers of renewable energy systems.

Article 14, points 1 and 2, state that MS shall ensure that information on support measures and net benefits of renewable energies is made available to the relevant actors. The way this information is, or, can be provided, was discussed based on best practice examples. Bearing in mind the disparate processes existing in the different MS, a bottom-up approach to the process of information production and distribution was considered to be the best way to implement the above mentioned points of Article 14.

<sup>1</sup> Build Up Skills is the European Sustainable Building Workforce Initiative supported by the Intelligent Energy Europe (IEE) programme of the EACI. The Build Up Skills initiative helps train craftsmen, on-site construction workers and systems installers to work with sustainable energy solutions in buildings.

By the end of 2011 a WG5 task force, comprising participants from Austria, Belgium, Netherlands, Portugal and United Kingdom, was created in order to help WG5 with the harmonization of the certification process for installers of the five RES technologies referred to in Article 14 of Directive 2009/28/EC (small scale biomass boilers and stoves, solar photovoltaic, solar thermal, shallow geothermal and heat pumps).

This task force discussed the best way to help MS with their implementation of Article 14.3 which states that MS shall ensure that certification schemes or equivalent qualification schemes are available by 31 December 2012 for the installers of the above mentioned RES technologies and that each MS shall recognize certification awarded by other MS in accordance to criteria mentioned in Annex IV of the Directive.

The production of a list of basic competences for the installers could, in the view of the task force, help to harmonize the different situations found in the MS.

These basic competences could be used by the different stakeholders involved from qualification agencies to training providers, not only for reaching the goal of Article 14.3 namely the mutual recognition process and its deadline, but also in the long term and in helping other initiatives such as the EU Build Up Skills initiative.

The Basic Competences Tables (BCT), produced as a result of task force discussions and from information already available in countries, are very detailed lists on how to understand the systems; how to install, commission and handover systems; and how to inspect, service and maintain systems; albeit these last topics are not covered by the RES Directive. Annex 1 depicts, as an example, part of the Basic Competences for Solar Thermal installers.

MS can and are using these tables when discussing this topic with the main stakeholders thereby helping to reach a common ground on the certification process. The BCTs are also proving invaluable to training providers when they are preparing the syllabus of courses for installers.

The process of discussing the BCTs with stakeholders is, by itself, a good way of exchanging information and preparing the ground for the mutual recognition process.

# Challenge Meets Solution

# 3



During the five meetings held so far, the topics of Information and Training were addressed and a special emphasis was given to certification of installers of the five RES technologies

The **first meeting** took place in Vienna on 29 and 30 September 2010. The sessions were dedicated to:

- 1- Discussion and ranking of topics
- 2- Discussion of the specific topic on certification schemes.

In the first item, topics for discussion were ranked as follows: common approach for certification of training; identification of information gaps; list of certification schemes; case studies and best practices.

As for the second item related to certification schemes a series of questions were asked such as: to whom should the certification process be applied (installers or companies)? What administrative bodies should be responsible for the certification schemes? What level of training is needed?

The diversity of situations existing in the different MS regarding the certification of installers was verified and in each MS the topic is sometimes being addressed by different Ministries. The issue of mandatory or voluntary schemes was also addressed with MS having different situations.

It was also mentioned that practically all MS have some sort of certification scheme already in place involving several stakeholders.

The use of information already available on this topic from other IEE supported projects like QualiCert, PVTRIN and Geotrainet was recommended.

Collaboration with WG4 and CA-EPBD was also mentioned.

The **second meeting** titled “Harmonization of Certification Schemes for Installers” took place in Lisbon on 11 and 12 May 2011.

In this session two main examples were presented related to the certification/qualification schemes: a presentation of the QualiCert project and a presentation of the Finland certification scheme.

The first presentation highlighted the following issues:

- further discussion with the different stakeholders is needed
- links to qualified installers should be implemented

- a unique bureau related to the certification of installers seems to be the better solution for mutual acceptance of the certifications according to Article 14.3
- transparency of information and probably a dedicated communication tool should be implemented.

Key points in the second presentation were the structure and content of a 5 day training course for installers and the four milestones for creating the certification scheme: 1) general planning; 2) pilot trainings; 3) certification; 4) accreditation of training bodies.

A brainstorming on different schemes for certification of installers resulted in the following main conclusions:

- A common administrative body in each country for the certification process was considered by the majority of participants as the best solution;
- Courses for installers with a duration of typically one week.
- Need for some kind of centralization of public information related to the certification schemes

The structure of a guidelines document towards the harmonization of certification schemes was also debated.

The group also discussed the adoption of the QualiCert glossary of terms in order to have a common “language”.

The **third meeting** titled “Case Studies and Best Practices on Certification Schemes” took place in Madrid on 16 and 17 November 2011.

The main objective of the meeting was to exchange experiences through the presentation of case studies of certification schemes for installers, discuss the main topics of the document “Guidelines for Installers Certification Schemes” and analyze the interaction with the Build Up Skills initiative.

The work being carried out by different countries on certification schemes for installers (Article 14, point 3) was reviewed at a presentation of two **case studies**, one from Austria and one from the United Kingdom.

The presentation from Austria focused on a scheme for installers of biomass boilers, solar



thermal, solar PV and heat pumps. The installers must be employees of a certified company or have their own company. The installers must provide proof of relevant education or professional experience. Different training is available of 4 to 7 days for the theoretical part and 1 day for the practical part which must be given by an accredited training institution. The United Kingdom presentation outlined a certification scheme for companies with at least 10 installers that is supported by the Government but run by industry. The installers must have a minimum of 3 years of verifiable professional competence. The relevant competences were established in an agreement between stakeholders. The qualification lies on the company that has all the responsibility.

The internal document “**Guidelines for Installers of Certification Schemes**” was presented and discussed. The objective was to have a simple document to help harmonize certification schemes. These guidelines include suggested milestones for the preparation of the national certification schemes for installers of the five technologies referred to in the RES Directive 2009/28/EC. These milestones are the following:

1. Identification of the present situation in terms of certification schemes in each MS.
2. Organising meetings with key stakeholders in each MS.
3. Establish competences for installers.
4. Agreement on the path to acquire the certification.
5. Prepare training material.
6. Training institutions qualification process.
7. Prepare for mutual recognition.

A presentation of the Build Up Skills initiative was given and a discussion on how this initiative interacts with the WG5 activities related to the certification of installers of RES technologies ensued.

One main conclusion of the discussions held during this third meeting was that it is better to state a common base for the basic competences that each installer in each technology needs to acquire, rather than to try to harmonize the whole process of certification schemes, bearing in mind the different situations existing in Europe. Taking into account this conclusion a task force was formed in order to compare the different competences in each MS and to propose the minimum basic competences required for installers of different technologies gained through accredited bodies in each MS which can lead to mutual recognition.

The **fourth meeting** took place in Tallinn on 23 and 24 May 2012 and addressed the topics: “Common Steps on Installer Certification and Mutual Recognition of Certification Schemes” and “Information Measures on Renewable Energy in the Member States”.

A general overview of the situation of the certification process in the MS was analyzed based on answers given to a previously distributed questionnaire. A summary of these results is presented.

Best practices on the information topic were presented by Austria, Ireland and Greece.

In Austria all kinds of information on RES is addressed involving different stakeholders from companies, municipalities and end users. A list of qualified installers is also available. The funds to support this information production and dissemination come from the Ministry of Environment but also from companies and consortiums.

In Ireland strong requirements are necessary in order to be in the list of installers including insurance data. A regular inspection scheme of installers in the list exists and these installers are periodically contacted to see if they are still interested in being in the list.

In Greece a guide with technical details of installations including identification of possible problems was also prepared and this information is available on the Ministry web page (in Greek only).

Portugal also drew attention to the campaign for solar water heaters in 2009 that used strong



media support, namely television. Furthermore solar installations rose following the obligation stated in the Building Regulation Code.

Denmark also mentioned a large programme including heat pump technology.

It was concluded that each MS should provide links in order to make communication of the information throughout Europe feasible. The creation of a European information exchange platform is still under discussion.

The session presented the results of the work done by the task force on the basic competences already mentioned.

In this session the legal aspects of Article 14.3 and Annex IV were also addressed.

The **fifth meeting** took place in Prague on 21 and 22 November 2012 and addressed the topic of “Reaching Common Ground for the Certification of Installers of Renewable Energy Technologies”.

A short overview of the process for the certification of installers was analyzed and a presentation was made by five MS: Belgium, Denmark, France, Ireland and Lithuania.

Belgium mentioned that installers should have continuous training every 5 years and that existing systems should be audited periodically.

Denmark presented a 3 year voluntary scheme after which a mandatory scheme may be put in place that complies with the European Services Directive. It was pointed out that a common European platform describing all existing schemes should be implemented with a corporate image for the certification process.

In France several schemes for the different technologies exist but a new label incorporating all five RES technologies mentioned in the RES Directive will be implemented. The certification can be carried out either individually or on companies. A possible path to mutual recognition

could be that each MS provides a list of approved training courses and training organisms. A European label for the installers’ certification process could be a process facilitating mutual recognition but consumers could also use this label as a way to assure the quality of the installations.

Ireland mentioned the need for installers to have an insurance, tax compliance demonstration and quality assurance.

In Lithuania the certification process is addressed to persons and not to companies and for the time being, although no training courses are available, annual reports are requested to verify the certified installers work.

A brainstorming session was held on the benefits of the BCTs namely on how to use this tool? What objectives are to be achieved? How to proceed with the work done on the BCTs?

There was a general agreement that BCTs are an important tool for the harmonization of the certification process and several ideas emerged for future work on this topic namely: establishing a syllabus for training courses; creation of a database to allow mapping and revisions of the BCTs; establishing a web tool with information on installers and training providers.

Finally, an outline of the whole situation of the certification process and the final steps for this process was discussed.

The **sixth meeting** took place in Berlin on 15 and 16 May 2013 and addressed the topics: “Ensuring Information on RES” and “Present and Future Implementation of Article 14 of the RES Directive”.

The overall situation regarding information issues referred to in points 1, 2, 5 and 6 of Article 14 was depicted using results from a previously distributed questionnaire. It was evident that, on the whole, the information, provided by both national authorities and equipment suppliers exists in MS and that information on the certification of installers exists in the majority of the MS.

An example of best practice was highlighted in a presentation given by Austria on the klima: aktiv website that has several types of information including a list of installers and a very informative internet tool on these topics with graphic presentation in form of maps.



The creation of a European Union information exchange platform was discussed in a brainstorming session addressing topics such as the type of information to exchange, the target groups, the frequency of information updates and the present and future needs for this tool. It was concluded that the essential information to be included should be: the contact of the responsible body in each MS; a link to the list of installers divided by technology; and general information on the certification process including the training programmes and the basic competences, information on continuous professional development and links to support schemes. As for target groups the most important are certified installers that want to work abroad and companies that want to hire installers from another MS. As regards frequency of information updates, the existence of links to the lists of installers automatically guarantees an up-to-date situation and for other information annual updating will suffice. The present situation and main achievements of WG5 were also examined and the main conclusions have already been covered in this report.

Finally topics for the new CA-RES II were addressed that included a discussion in a joint meeting between WG4 (RES and district heating planning, RES in buildings) and WG5 (Information and Training), bearing in mind the fusion of these working groups into the new Core Theme when related to renewables for heat. The topic of certification and qualification was considered as one of the important ones to be addressed in the first meetings of the new Core Theme of CA-RES II.

### 3.1 Member States' Experiences

In order to evaluate the process of certification of installers of the five renewable energy technologies, enquiries were made to identify the approximate status of the MS regarding this process (from 1 - not yet started to 5 - ready). In the graphics levels 4 and 5 were grouped as ready, and levels 2 and 3 were grouped as ongoing. In 2012 the situation of the five technologies is depicted in Figures 1 to 5.



Biomass Boilers: Certification of Installers situation 2012

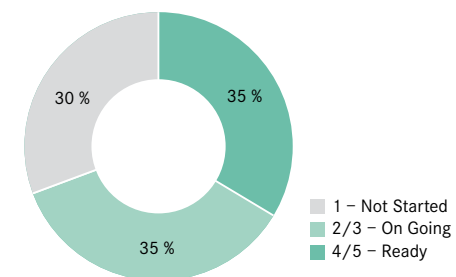


Figure 1 - Situation of certification process in 2012 for boilers and stoves.

PV: Certification of Installers situation 2012

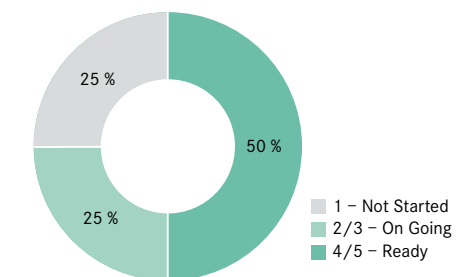


Figure 2 - Situation of certification process in 2012 for PV.

Solar Thermal: Certification of Installers situation 2012

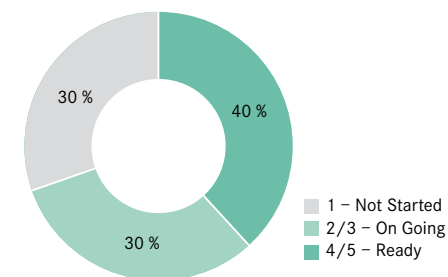


Figure 3 - Situation of certification process in 2012 for solar thermal.

Geothermal: Certification of Installers situation 2012

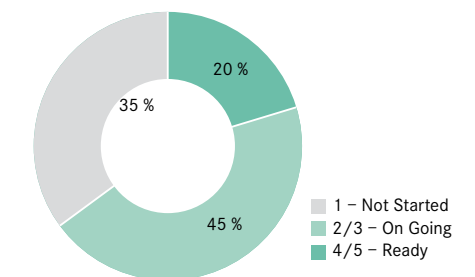


Figure 4 - Situation of certification process in 2012 for shallow geothermal.

Heat Pumps: Certification of Installers situation 2012

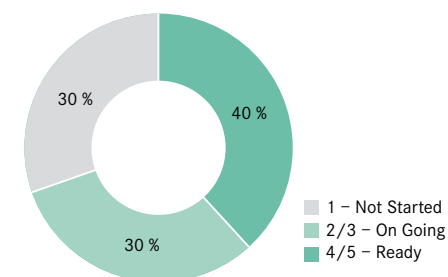


Figure 5 - Situation of certification process in 2012 for heat pumps.

## Main Findings and Achievements

The development of the approximate status for the certification process on the scale from 1 (not yet started) to 5 (ready) for the years between 2011 and 2012 is depicted in Table 1.

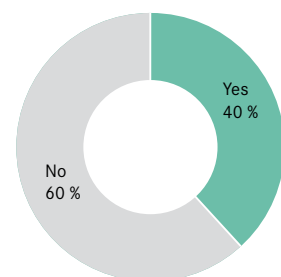
	2011	2012
Biomass Boilers	2.1	3.1
Solar PV	2.6	3.4
Solar Thermal	2.7	3.1
Geothermal	1.7	1.7
Heat Pumps	2.4	3.1

**Table 1. - Comparison of appropriate status in 2011 and 2012.**

It is clear that there was a slight development from 2011 to 2012. The process is still at a relatively early stage, with solar PV being in the best position and shallow geothermal having still a way to go.

Furthermore, in the majority of MS a renewable energy technologies installer is not considered a regulated profession as represented in Figure 6.

Are installers of the five Renewable Energies Technologies considered to be regulated professions?



**Figure 6 - Regulated profession.**

It was found that the MS are in different situations regarding both the certification of installers and information production and dissemination mentioned in Article 14 of Directive 2009/28/EC. Effort was made in WG5 to exchange knowledge on these topics of information and training in order to reach an EU common ground.

The guidelines for the process of certification of installers of the five technologies mentioned in the RES Directive were discussed and the main steps to reach that objective were identified.

The legal aspects regarding the implementation of Article 14 and Annex IV of the RES Directive were also discussed.

Basic competences for installers of the five technologies mentioned in Art. 14 of the RES Directive, produced in the framework of WG5 task force was considered a very useful tool that could be used by the relevant stakeholders in each MS. These Basic Competences Tables can be important for training courses and for the mutual recognition process.

Several information schemes are already in place in many MS. A website or a link to existing websites in the MS for exchange of information and promotion of a mutually recognized certification process was also considered to be a useful tool, which should be developed in further actions.

An interaction with the Build Up Skills initiative was achieved with presentations of the work done by WG 5 and an exchange of information on the basic competences tables.

In the following table the main achievements of the work of WG 5 on Information and Training are summarized.



## The Way Ahead

Topic	Issue	Outcomes	Future
Certification of installers	Guidelines for certification process harmonisation	Main topics to be addressed in the certification process of installers of RES technologies	Reach a common ground on the certification process.
Certification of installers	Basic competences of installers of the 5 small scale RES technologies referred to in Art 14.3 RES Directive	Basic competences tables produced including knowledge requirements and additional knowledge	Valuable input for mutual recognition of certification and training courses
Information	Case studies presented and discussed	Exchange of information on RES.	Implementation of links between websites in MS
Synergies with the “Build Up Skills” initiative. <sup>2</sup>	Cooperation and information exchange regarding training of installers.	Meeting with Build Up Skills, exchange of information on BCT	Continue work with Build Up Skills on the second phase of implementation

As regards future work some ideas were presented during the six plenary and parallel sessions of CA-RES. Here are some of these ideas:

The process for mutual recognition of installers certification is basically a bottom-up approach to meet the requirements of the RES Directive. The importance of using the Basic Competences Tables for installers as a means for future harmonization should be explained to the organization responsible in the MS for dealing with installers. This is an ongoing process in each MS and should be continued.

- Though it is out of the scope of Directive 2009/28/EC other renewable energy technologies like urban wind could be addressed from the point of view of installers training and certification. The utilization of a mix of technologies as stated in the RES Directive can also present different challenges regarding training and certification, which will be discussed in the second phase of the CA-RES. Creating a web tool, or linking the MS specific web pages, with general information on the certification process and the list of certified installers and training providers could help in this process, and should be taken further. Creating a corporate image or logo for the certification process of installers (e.g. similar to the quality label Solar Keymark used for solar thermal). It was discussed to propose and use indicators for evaluating the status of the certification process such as the percentage of certified installers related to the total number of installers. Continue the interaction with the Build Up Skills initiative namely in its second pillar on the implementation of the road maps.
- Continue the interaction with the building sector both internally in the CA-RES and with CA-EPBD. In addition, synergies with the CA EED will be explored.

Addressing the issue of the relationship between the certification process in Directive 2009/28/EC and the qualification of professionals dealt with in Directive 2005/36/EC and the services on the internal market handled by Directive 2006/123/EC is also an important topic for the future.

<sup>2</sup> See e.g. the 3rd EU exchange report of the Build Up skills initiative [http://www.buildupskills.eu/sites/default/files/3rd\\_EU\\_Exchange\\_Meeting\\_Report%2026%20%E2%80%93%2028%20November%202012%20Brussels\\_1.pdf](http://www.buildupskills.eu/sites/default/files/3rd_EU_Exchange_Meeting_Report%2026%20%E2%80%93%2028%20November%202012%20Brussels_1.pdf)

# 6 Abbreviations



Abbreviation	Full name
BCT	Basic Competences Tables
CA EED	Concerted Action on the Energy Efficiency Directive
CA-RES	Concerted Action on the Renewable Energy Sources Directive
CA-EPBD	Concerted Action on the Energy Performance of Buildings Directive
EU	European Union
IEE	Intelligent Energy Europe
MS	Member States
PV	Solar Photovoltaics
RES	Renewable Energy Sources
WG	Working Group

### This is a public CA-RES report

The Concerted Action to support the implementation of the RES Directive 2009/28/EC (CA-RES) was launched with the participation of the responsible authorities from 30 EU countries and supported by Intelligent Energy Europe (IEE) in July 2010 to provide a structured and confidential dialogue on how to address the cost-effective implementation of the RES Directive 2009/28/EC.

The sole responsibility for the content of this document lies with the authors. It does not necessarily reflect the opinion of the European Union or the participating countries.

Neither the EACI nor the European Commission are responsible for any use that may be made of the information contained therein.

For further information please visit [www.ca-res.eu](http://www.ca-res.eu)

# Annex 1.

Example of the Basic Competences for Installers of Renewable Energy Technologies produced in the framework of WG 5.

**Concerted Action Renewable Energy Sources Directive – Working Group 5 Information and Training Work of Task group looking at an Indicative Competence Baseline for Mapping Solar Thermal Installation, Commissioning, Service and Maintenance (draft)**

Title	Know the requirements to install, commission and handover solar thermal hot water systems	Country Map
Learning outcomes <b>The learner will:</b>	Assessment criteria <b>The learner can:</b>	
1. Know the health and safety risks and safe systems of work associated with solar thermal hot water system installation work	<p><b>1.1 Confirm which aspects of solar thermal hot water system installation work pose risk of:</b></p> <ul style="list-style-type: none"> <li>- electrocution/electric shock</li> <li>- burns</li> <li>- toxic poisoning</li> <li>- injury through flash to steam of system heat transfer fluid</li> <li>- a fall from height</li> <li>- personal injury through component/equipment handling</li> </ul> <p><b>1.2 Confirm safe systems of work for solar thermal hot water system installation work in relation to prevention of:</b></p> <ul style="list-style-type: none"> <li>- electrocution/electric shock</li> <li>- burns</li> <li>- toxic poisoning</li> <li>- injury through flash to steam of system heat transfer fluid</li> <li>- a fall from height</li> <li>- personal injury through component/equipment handling</li> </ul>	
2. Know the requirements of relevant regulations/standards relating to practical installation, testing and commissioning activities for solar thermal hot water system installation work	<p><b>2.1 Interpret building regulation/building standards guidance documentation as relevant to solar thermal hot water system installation work to identify the requirements in relation to:</b></p> <ul style="list-style-type: none"> <li>- maintaining the structural integrity of the building</li> <li>- maintaining the fire resistant integrity of the building</li> <li>- the prevention of moisture ingress (building water tightness)</li> <li>- notification of work requirements</li> <li>- control of temperature in primary and secondary circuits including primary circuits connected to unvented hot water storage systems</li> <li>- energy conservation</li> <li>- testing and commissioning requirements</li> <li>- compliance certification</li> </ul>	

