



Regulations for Renewable Heating and Cooling

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Introduction

Until a few years ago, the renewable energy policy debate and legislation focused almost exclusively on electricity and transport fuels. Renewables for heating and cooling (RES-H) were largely neglected. Though heating alone is responsible for almost half of the EU’s final energy consumption and renewables like solar thermal, biomass and geothermal heat have a huge potential for growth, resulting in substantial savings of gas, oil and electricity and greenhouse gas emissions reductions.

Renewable Heating and Cooling is on the European agenda

In 2004, on initiative of ESTIF (European Solar Thermal Industry Federation), EREC and its member associations launched the first declaration calling on Europe to draft strong policies to promote renewable heating and cooling. Further declarations were supported by more than hundred industry associations, NGOs, companies, research, energy agencies and other stakeholders from all over Europe.

In 2006, the European Parliament adopted by overwhelming majority a resolution asking the Commission to draft a Directive proposal with the specific purpose of promoting Renewable Energy Sources for Heating (RES-H). The Commission fully included RES-H in the “Renewable Energy Road Map - Renewable energies in the 21st century: building a more sustainable future”, published in January 2007. Two months later, the summit of the EU Head of States agreed on a binding target to reach by 2020 a 20% share of renewables in the total energy consumption. The Council invited the Commission to propose a new framework Directive to promote renewables, covering electricity, transport and heating and cooling.

The Commission is currently working on this draft Directive. While it is certain that, this time, RES-H will be covered, it is not yet known which concrete measures will be proposed, and how they will be implemented in the Member States. Meanwhile,

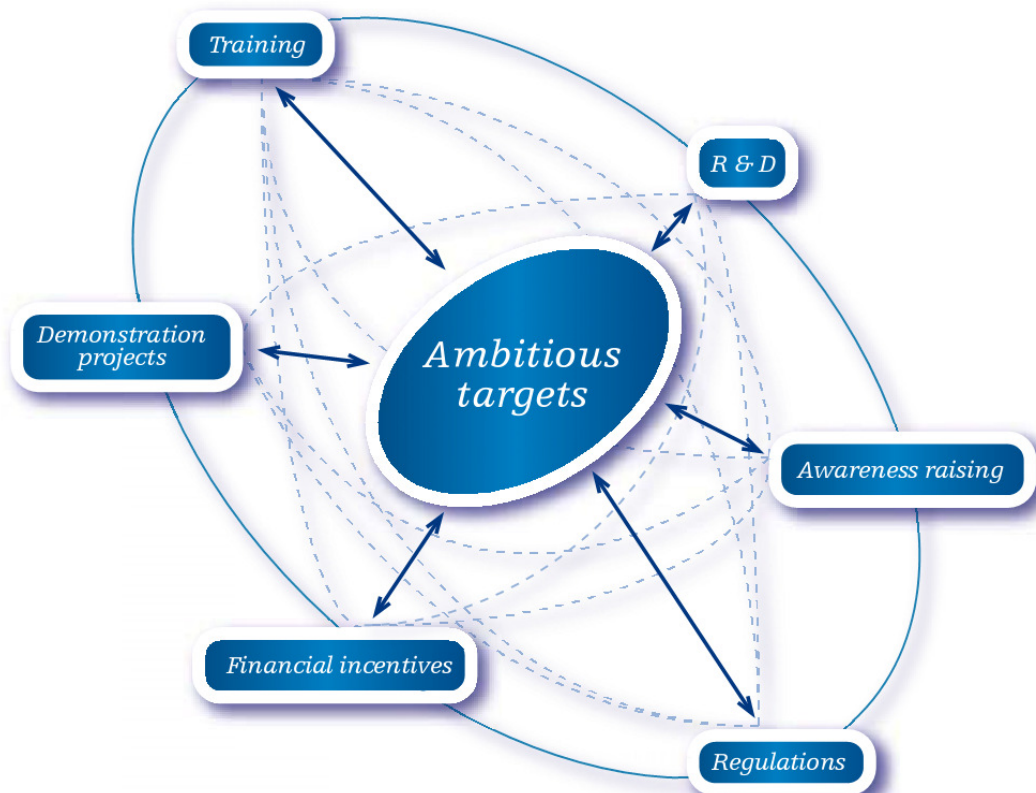
several Member States have adopted new and stronger policy initiatives focused on RES-H.

However, while the discussion on renewable electricity policies fills libraries, there is a lack of knowledge and comparative studies about effective policy instruments for the RES-H sector. Therefore, this is a very good timing for the present document and the other results of the K4RES-H project to be published.

The Renewable Heating Action Plan for Europe

In early 2007, EREC and its member associations published the Renewable Heating Action Plan for Europe in the framework of the K4RES-H project.

Its main message is that a coherent set of long-term oriented measures is needed to boost the use of renewable heating and cooling toward achieving ambitious targets:





RES-H is a complex and heterogeneous sector. Unlike electricity and transport fuels, heating is not distributed through national or European networks. In the case of heating and cooling, the energy systems and the decision making processes are decentralised. Policies must influence millions of building owners and multipliers like architects, heating engineers and installers. The different instruments proposed address specific barriers to growth. They should be integrated into a long-term strategy aiming at reaching ambitious targets.

The objective of this study

The present document addresses one of the key elements of the strategy above: regulations for renewable heating and cooling. It looks both at best practice regulations and at administrative barriers hampering the development of RES-H. Regulations are defined here as any kind of legislative or administrative rules affecting the growth of RES-H, excluding those linked to financial incentives that are discussed in a separate study produced within the K4RES-H project.

The study is conceived as a tool to support the design of effective regulations for renewable heating and cooling (RES-H). It is targeted at legislators, public administrations, energy agencies, NGOs, industry associations, market actors and any person or institution involved in the design and implementation of regulations promoting RES-H, at local, national and European level.

The analysis and guidelines presented here are a summary based on the common denominators derived from the detailed studies on solar thermal, biomass and geothermal regulations, produced within the K4RES-H project. The latter include a number of case studies of local or national regulations and specific guidelines. Where appropriate, reference is made to the source where more detailed analysis and guidelines are available.



The K4RES-H project

The study has been produced within the project “Key Issues for Renewable Heat in Europe” (K4RES-H), co-financed by the Intelligent Energy – Europe Programme of the European Commission and coordinated by ESTIF (European Solar Thermal Industry Federation), one of the associations who are members of EREC.

All project documents can be downloaded at the main project website:

www.erec.org > projects

Additional information on solar thermal regulations can be found at:

<http://www.estif.org/stap>

Additional information on geothermal regulations can be downloaded at:

www.egec.org > publications

AEBIOM website www.aebiom.org gives a presentation of the K4RES-H project but the main project documents are on the project’s website.

Within the K4RES-H project, guidelines for best-practice policies for the promotion of renewable heating and cooling are developed. The project is structured along five key issues:

- Setting verifiable targets
- Quantifying energy delivery of individual installations
- Regulations promoting or hampering the market development
- Financial incentives
- Specific policies for innovative applications, such as renewable cooling

For each of these key issues, specific studies have been produced. The present one builds upon three parallel studies on regulations for the individual RES-H technologies, edited respectively by the European associations ESTIF (solar thermal), AEBIOM (biomass) and EGEC (geothermal). Each of them contains



specific analysis and guidelines for the relative technologies. The present study draws general conclusions, valid for renewable heating and cooling as a whole.

Following partners have participated in the K4RES-H project:

The coordinator of the project:

[ESTIF](#) - European Solar Thermal Industry Federation

The work package leaders:

[AEBIOM](#) - European Biomass Association

[EGEC](#) - European Geothermal Energy Council

[EREC](#) - European Renewable Energy Council

The other partners:

[Agencia d'Energia de Barcelona](#) (BEA)

[Energie 2000](#) - Energieagentur im Landkreis Kassel

[EC-JRC](#) - European Commission, Joint Research Centre

[IDAE](#) - Instituto para la Diversificación y Ahorro de la Energía

[WIP](#)

The Spanish Institute for Energy Diversification and Saving (IDEA), the Barcelona Energy Agency and the energy agency of administrative district Kassel (Energie2000) have specifically contributed to this document, by producing case studies and providing their expertise on different solar obligations implemented in the last years. Full details available at: www.estif.org/stap



Many other persons and organisations have been involved in the production of the work presented here, including the staff and the members of EREC, ESTIF, AEBIOM and EGEC, as well as many experts from energy agencies, NGOs, regulators and public authorities at local, regional, national and European level, installer organisations. Others have contributed with their advice and opinions. Though it is impossible to mention all of them, our thanks go to each person and institution who contributed to this study.

Of course, EREC remains solely responsible for the contents and for any possible mistake or omission.



Executive Summary

Introduction

Around 40% of Europe's energy demand is used in buildings: To provide space heating and domestic hot water, to air-condition the rooms, for lighting and electrical appliances. Heating and cooling account for the lion's share of the energy demand in buildings. Moreover, substantial amounts of heat are consumed in industrial and agricultural processes.

Regulations for renewable heating and cooling (RES-H: bioheat, solar thermal, geothermal) can be one decisive instrument to promote the use of RES-H and exploit the huge untapped potential of renewables in the heating and cooling sectors. The present study is a tool to support the design of effective regulations for renewable heating and cooling (RES-H).

Reducing administrative barriers

Permitting and authorisation procedures can lead to significant administrative barriers preventing the use of renewable energy sources in the heating and cooling sector. Obstacles are due to different reasons: Geothermal resources – for instance- are not well defined in legal terms, and the regulation for permit building is correspondingly very complex. For solar thermal, lengthy and difficult authorisations in some Member States are due to national regulation aiming - among others - at reducing the visual impact of new buildings or building elements in special areas. For biomass, permitting is also a strong barrier in many countries with increasingly complicated procedures.

A series of recommendations for improving existing regulations and drafting new ones to promote renewable heating and cooling is provided at the end of the chapter.

Renewable heat obligations

Clear minimum requirements for renewables in buildings are effective, cost-efficient, and avoid big administrative overhead. These requirements can be applied to newly constructed buildings and those undergoing major refurbishment. A national/regional solar obligation can



be a good tool to create a large national/regional market in a short time. However, to draft a successful renewable heat obligation, several requirements such as a proper quality assurance scheme are necessary. They are listed at the end of this chapter.

EU-Harmonization of standards and certification procedures

European standards are essential for a large scale development of the renewable heat market. It must be made sure that existing and upcoming national standards and certification procedures will not hamper the exchange of products and services in the common market. The co-operation at European level of the standardization institutions with the relevant professional bodies and industrial associations is necessary to ensure quality and acceptance.

National development plans

Development plans can help potential investors to better identify sites suitable for RES-H. They also increase awareness among stakeholders of the RES-H potential. In the geothermal sector, the development of national dynamic inventories of energy resources is highly recommended. To make such inventories comparable on a pan-European level a common methodology shall be elaborated, preferably via European professional associations. Regional energy and environmental plans are also a good way to develop RES scenarios. Last but not least, guidelines for the deployment of renewable energy sources help increase awareness of the potential of renewable energy sources in the heating and cooling sector.



Reducing administrative barriers

Despite the widespread public support for renewable energies, certain existing regulations hamper the wider use of RES heating technologies. A lack of legal clarity can cause the same effect. This is not surprising, since much of the relevant legal context was developed without taking into account the special needs and requirements of RES-H technologies or even before these technologies existed at all.

Some of the administrative barriers are involuntary side-effects of regulations designed for other purposes. These regulations can be easily adapted to be more RES friendly without forgoing their original purpose. Other barriers are simply due to a delay in adapting the legal context to new technologies that could be solved without any opposition.

Sometimes, the regulatory needs of RES-H may be in partial contradiction with other legitimate public interests, like the protection of local environment, natural or architectural landscape. In this case, new political trade-offs should be discussed, taking into account the urgency of increasing the use of renewable energies, to mitigate climate change, to improve the security of our energy supply and the trade balance.

In all cases, it is time for the national and local governments to make an inventory of all existing barriers and try to reduce them as soon as possible.

The field that currently provides the biggest barriers against increased use of **geothermal energy** is the permitting process. Permits are required e.g. for the use of groundwater as heat source, but also for Borehole Heat Exchangers and for drilling as such. There are very complex procedures for permit of building for the following reason:



Geothermal resources are not well defined in legal terms, and the regulation of their development and utilisation is correspondingly diffuse. In many countries, geothermal resources are dealt with in the Mining Law whereas the production of geothermal fluids from the subsurface is regulated by Water Protection legislation. If small geothermal systems are treated similarly to large mining projects, small-scale applications will not enter the market. For deep geothermal systems, fees and royalties for the use of underground resources can become a substantial and absurd burden. They exist for example in France, Hungary (2 % of turnover), Poland, Romania (2 % of turnover), and Slovenia. Taking into account Europe’s dependency on imported energies, and the positive external effects of the use of geothermal heating if compared with oil, gas, coal or electrical heating, there is no justification for maintaining these royalties. If legally possible, EU legislation should forbid them. Otherwise, the Member States should abolish them by own initiative.

Some national authorities consider geothermal energy as a type of energy carried by thermal waters exclusively, which hampers the distribution of most up-to-date technologies using shallow depth reserves via heat-pumps or deeper closed-circuit heat exchanger fluids. For the geothermal applications already firmly established on the market (mainly shallow geothermal), this can be a substantial barrier to growth.

This lack of clear definition also implies that responsibilities are assigned to different Ministries, with often limited cooperation and interaction between them. Sometimes, the different competencies create legal uncertainty. They always create delays and excessive administrative costs and delays for those who want to develop geothermal projects.

A broad sense legal definition of geothermal energy is needed in a relevant piece of Community legislation. The procedures and administrative competences should be simplified. Energy agencies could offer a one-shop service to the potential investors, providing them all necessary information and help to quickly receive the necessary



authorisations. A common EU-wide minimum standard for regulation of geothermal energy should be developed, requesting the member states to set out rules for a suitable legislation:

- legal right to explore and exploit a geothermal resource
- no or low royalties for the heat, in order to help geothermal technology to become economic (there are also no royalties on solar radiation or wind)
- provisions to regulate the co-existence of small, shallow systems (ground source heat pumps) and deep geothermal plants
- Suitable environmental regulations

For **solar thermal**, lengthy and difficult authorisations are necessary in some Member States, even to install small solar systems that are not much bigger and don't look very different from an ordinary roof window. This problem is mainly registered in some areas of Italy, falling under a national regulation aiming - among others - at reducing the visual impact of new buildings or building elements in special areas.

But problems are sometimes encountered also in modern buildings in areas without any special protection, where municipal authorities refuse authorisation to install solar collectors, simply because they would be visible from the street or other public areas. Sometimes, on the same or on surrounding buildings, a number of traditional TV antennas, satellite dishes, and mobile phone masts and roof windows are visible.

Esthetical opinions can hardly be discussed objectively. Of course, it must be possible to maintain the appearance of the roofs of medieval town halls or cathedrals. However, authorisations procedures and practices should be adapted to the energy and climate policy priorities of the 21st century.



The sheer need of an authorisation is often enough to discourage potential users of solar energy, also taking into account that the window of opportunity (for instance replacement of the heating system) is often short and that there may be a disproportion between the low cost of the system and the effort needed to have the authorisation: in certain cases, Environmental Impact Evaluations (EIA) have been requested for very small (2-4 m²) solar systems: the cost of the EIA would be several times higher than the cost of the system itself, and this for a technology producing clean solar energy and known for its minimal or non-existent environmental impact!

The general principle should be that the use of solar collectors is allowed without any special authorisation, except for a precisely defined and limited number of buildings with particular historical or esthetical value. And in these areas, the procedures should be quick and transparent: the public authority should provide a list of technical solutions for the integration of solar collectors that should be acceptable for as many listed buildings as possible.

Finally, in large buildings with shared ownership, where a large part of European citizens live, the rules concerning the right of using the roof are in some countries unclear. These rules sometimes make it very difficult to agree on the construction of a solar system, be it for collective use or for single apartments. The public authority should enforce, or at least encourage, easier procedures, for instance by inverting the burden of proof: stating the right in principle for any building owner to install a solar system on the roof, except if there are serious reasons against it.

For **biomass**, permitting is also a strong barrier in many countries with increasingly complicated procedures.

Before building new plants for production or use of biofuels (or other materials), there are different types of regulations that could delay or even stop the planned plant. Operating of biofuel heating plants results in external effects, both positive (reduced



greenhouse gas emissions, employment) and negative (noise, heavy traffic, dust and emission). The negative effects are of a local kind and the positive effects are generally more global. For example handling and transportation of biofuels can be a source of noise, which could disturb local inhabitants. Permits are therefore needed for installations above a certain capacity (not needed for individual dwellings) and this is a normal condition.

However sometimes delays are exceeding normal conditions. It can take up to 6 years for a permit in Italy for example! This can be considered as a cost for the society in terms of loss of renewable, domestic energy production, etc. Changing the energy infrastructure requires many investments for new decentralised efficient cogeneration/heat plants located close to heat consumers. Permit procedures are becoming more elaborated and complicated with time and comprehensive information to the public on the necessity to build new energy plants is crucial.

Sometimes wood energy plants are considered as incineration plants and have to fulfil the emission standards of incinerators. Even if this is relevant for wood waste, the economic impact is non negligible for clean wood fuels because filtering technologies are expensive. And the perception for the public is disastrous. The consequence is that wood based plants are sometimes banned from urban areas where the heat consumption lies. Clear European guidelines (ongoing with CEN TC 335) regarding the wood classification, especially defining the border with waste, and related emission standards would be helpful to overcome partly this barrier.

Summary of recommendations on Administrative Barriers:

Streamline administrative procedures:

For geothermal:

- Provide clear, harmonised definition of geothermal energy and secured legal framework for use of geothermal resources.



- Simplify the framework of competence in the public administration concerning underground resources for shallow geothermal energy (ground source heat pumps), offer to potential users one-shop assistance through energy agencies.
- Abolish royalties or other fees on the use of geothermal sources.

For solar thermal

- In most buildings, the installation of solar collectors should be allowed without any special authorisation procedure.
- In listed buildings, the public authorities should provide technical solutions for the integration of solar collectors acceptable in as many situations as possible.
- For buildings in shared ownership: state a general right of use of solar energy and, where necessary, invert the burden of proof from those who want to install a solar system to those who want to prevent it.

For biomass

- Inform the public about the need to build new decentralised cogeneration/heat plants close to consumers could ease the permit procedures.
- Having a clear classification of biomass, especially making the differentiation with waste and the related emission standards would make it clearer for project developers.



Renewable Heat Obligations

Clear minimum requirements for renewables in buildings are effective, cost-efficient, and avoid big administrative overhead. Renewable heat obligations for newly constructed buildings and those undergoing major refurbishment are being applied with success in a growing number of countries and local authorities. A renewable heat obligation can be a good tool to create economies of scale that also benefits the voluntary market for buildings or uses not subject to the obligation.

Benefits of renewable heating obligations

Benefits of setting a renewable heating obligation include the following:

- Exploiting the short window of opportunity: The opportunities arising from major changes to the building are actively taken.
- Substantial cost-reductions for the end-user: When included at the time of building construction, a renewable heating system is cheaper than retrofitting later.
- Minimal impact on public budgets: The necessary investments are paid/carried/borne by those who are responsible for the energy demand in the first place - the building owners.
- Low administrative costs beyond the ordinary checks and inspections when authorising new buildings.
- Social policy: Renewables help reduce running costs. Social housing companies are already turning to renewables to support their tenants.
- Good investment climate in the industry: Obligations help avoid to stop-&-go support, which has often hurt the market development more than it has helped.



- Economies of scale benefiting also the voluntary renewable heat market beyond the strict legal requirements.

Successful examples

In Spain, many municipalities have adopted Solar Ordinances, similar to the one originally enacted in 1999 by the City of Barcelona. These regulations make solar thermal hot water systems a requirement in new buildings, and the effect on the uptake of solar thermal has been considerable. This paved the way for a renewable heat obligation in the new Spanish national building code approved in 2006. Particularly in the solar thermal sector, the sheer announcement of this national regulation has encouraged a wave of investments in production facilities at European level, and in the distribution and marketing structures in Spain.

Solar or renewable heat obligations have been approved or are being discussed also in a number of communes or regions in Italy, UK, Germany, Ireland and Belgium, and at national level in Portugal, Italy and Germany. A detailed overview is available in the documents about regulations on www.estif.org/stap

By requiring new buildings to use - at least for a certain share of their heating and cooling demand - Renewable Energy Sources, these technologies quickly become mainstream products. Israel, which has had such an obligation since 1980 has shown that once the market has reached a critical mass, people voluntarily choose RES-H. Products and service are now offered everywhere -one does not have to find specialised shops, planners or installers - and mass production and marketing drives down costs. Public support for RES-H can therefore focus on emerging new applications, such as cooling for industrial process heat using Renewable Energy Sources.



Minimum requirements

- **Quantitative requirements**

In most cases, renewable heat obligations require that a certain share (typically 30-70%) of the domestic hot water demand or of the combined demand for hot water and space heating (in this case typically 10-20%) is covered with renewable energy sources. In the Spanish national building code, the share varies according to the use of the building, the geographical location and the kind of energy used as back-up.

- **Qualitative requirements**

Renewable heat obligations fundamentally change the way how the market functions. The typical buyer of the renewable heating system become constructions companies that may have little interest in the proper functioning of the system, as long as it is cheap and comply with the wording of the obligation. Therefore, proper quality assurance measures must be foreseen, including quality parameters for the products, the installation and the maintenance, as well as a clear inspection and sanctioning regime. Without these measures, it is likely that some construction companies will only install the cheapest products. This could reduce the acceptance of the regulation and possibly of the renewable heating technologies in general.

- **Issues to take into account**

One should:

- Set a minimum requirement in terms of share of the hot water and possibly space heating consumption to be covered by renewable energy sources. The share may vary according to the location, use and size of the buildings.
- Any product requirement should be strictly compatible with an open European market. Where European standards and certification procedures exist (for



instance Solar Keymark in the case of solar thermal energy), national or regional renewable obligations should refer to them and avoid any additional national hurdle.

- Oblige the installation of appropriate function control or monitoring equipment and procedures, with a sophistication & price related to the cost of the system. This will empower the user to see whether the system is working correctly and to enable an appropriate monitoring of complex systems.
- The public authorities should run random checks on a sufficient sample of the larger systems installed and publish the results. This monitoring should be done by independent institutes with adequate skills. This will put the installers and the hardware providers under pressure to avoid getting a bad reputation and having to perform repairs. A policy of “name and shame” of installing companies or manufacturers could be considered. The costs of such random checks will be outweighed by the savings from the avoided checks at the stage of planning and by the publicly available knowledge that can be created and used for optimising system design.

Renewable heat obligations require a coherent set of flanking measures, including financial incentives for the non-obliged sector, which comprises the largest part of the buildings, as well as training and awareness raising, R&D policies. Extensive and detailed guidelines for solar regulations are available in the document about regulations on www.estif.org/stap



Summary of recommendations on Renewable Heat Obligations:

Renewable Heat Obligations are a powerful instrument to promote the use of renewables, with manifold advantages that also benefit the voluntary market in the buildings not covered by the obligation.

- Proper quality assurance scheme should be set to guarantee high quality of products and installations.
- The technical product requirements should be strictly compatible with the European market.
- One should maintain a minimum requirement in terms of percentage of the heating consumption to be covered by the renewable energy source, according to the location, use and size of the buildings.
- The public authorities should run random checks on a sufficient sample of the larger systems installed and publish the results.



EU-Harmonisation of standards & certification procedures

European standards are essential for a large scale development of the renewable heat market in the European Union.

Sound standards and certification procedures are necessary to guarantee to the user a state of the art quality of the products. They also provide the industry with a clear benchmark and make it possible to build up business plans based on high quality products.

Because parts of the renewable heating technologies are rapidly developing, it may happen that European standards or certification procedures do not exist or are not updated. In this case, national authorities may be tempted of defining their own standards or setting up special certification schemes. However, such national ways must be strictly avoided, as they fragment the European market, hamper competition and contribute to increased prices. A strong and healthy growth of renewable heating can only take place within a large, open European market with harmonised standards and certification procedures.

Regarding **geothermal energy**, EN standards are well adapted to the heat pumps and allow for a free circulation of machines and components within the common market.

For the ground side of shallow geothermal installations, standards and codes exist only in a few countries with developed ground source heat pump markets (Austria, Germany, Sweden and CH). In France, Ireland and the Netherlands the matter is somewhat covered, and work is going on to develop standards and codes. A common EU-wide harmonisation is not in sight, and will be difficult as the geological and climatic differences will have to be considered. An approach for common



standards can be seen between Austria, Germany and CH, where geology and work practice are similar.

In deep geothermal, specific standards do not exist yet. The relevant EN standards for the petroleum industry can be applied for deep drilling. However, not all safety regulations for hydrocarbon drilling and exploitation are required for geothermal drilling, so specific geothermal standards are desirable with increased application of deep geothermal energy. On the heat delivery side, deep geothermal system typically feed into district heating systems. For district heating, own standards and regulations exist.

Concerning licenses and certifications, only few countries have existing schemes. It must be made sure that existing and upcoming national regulations will not prevent the exchange of work and services in the common market. For the heat pump installation, the EU-CERT.HP program may prove very helpful. No common activity exists yet for the ground side. For setting up such schemes, the co-operation of the relevant professional bodies and industrial associations is necessary to ensure acceptance of the resulting programs in the geothermal sector.

Regarding the **biomass** sector, concept of sustainability should not only be applied to biofuels but also to the production of all energy crops as well as all conversion routes, be it for biofuels, biogas, heat or electricity purposes. The food and feed production should also be sustainable. Therefore an integrated approach is necessary.

Thereby, it must be distinguished between the free market, where the requirements may be lower, and a market supported by public policies. In this case, especially within obligations, the sustainability of the biomass fuel used must be clearly certified according to standards and certification procedures to be developed directly at European level.



Looking at criteria like high performance and emission, the French Wood Fuel Programme is a successful example. It has been developed with the objective- among others- to develop a certification system for high performance wood domestic heating systems.

The French Wood Fuel Programme has been initiated by the French Government, Department of Industry, Environment and Regional Planning, and managed by the agency ADEME. The regulation’s priorities are the development of industrial and district heating and of a certification system for high-performance clean wood domestic heating systems. Quantitative objectives are manifold: 600 additional collective boilers, 400 additional industrial boilers, certification of domestic equipments, improvement of 10% of energetic performances, improve energy balance by 270 ktoe and decrease greenhouse gas emissions by 80 kt per year.

The programme is linked to financial provisions for subsidies to investment, R&D and emission monitoring for boiler technologies, nationwide agreement among stakeholders, etc...Four years after the start of the programme 1090 boilers have been installed (objective reached) and the amount of energy produced reached 73% of the objective.

For **solar thermal**, EN standards exist since the year 2000 for solar collectors and for factory made systems. A standard for custom made systems is in advanced state of development. The possible introduction of standards for other components is being discussed in close collaboration with CEN, ESTIF and with the support of the European Commission.

However, even after the introduction of the European standards, for several years the industry faced different certification requirements in various countries. This led to high costs for certification, uncertainties and delays in the development and market introduction of new products, higher costs and a fragmented market with reduced



competition. At the end, the final users paid the price in terms of less choice, higher costs and often lower quality.

This problem has been solved to a large extent through the creation and successful introduction of the Solar Keymark, a voluntary third-party European certification mark, demonstrating to the consumer or user of a product that it is in conformity with the relevant European Standard(s). The Keymark is a scheme developed by CEN (European Committee for Standardization). The Solar Keymark was developed by ESTIF with the financial and political support of the European Commission. Meanwhile, the large majority of solar thermal products sold in Europe bear the Keymark that is recognised by nearly all national and regional authorities.

It is necessary to maintain this success, to avoid the creation of any new national special way and to achieve the full recognition of the Keymark by all countries in Europe. If technological development makes amendments necessary, these should be discussed and approved directly at European level in order to avoid a fragmentation of the EU market. The necessary work on standards and verification of the certification procedures should be financially supported by public authorities at European and national level.

Summary of recommendations on standards & certification procedures:

For geothermal:

- For geothermal heat pumps, standards for the ground side installation only exist in few countries. Hence harmonised standards for all EU need to be developed, taking into account the substantial geological and climatic differences.
- It must be made sure that existing and upcoming national certification regulations will not prevent the exchange of work and services in the common market. For the heat pump installation as such, the EU-CERT.HP program may prove very



helpful; a similar training and certification program for the geothermal side of ground source heat pump systems is required.

- Cooperation with the relevant professional bodies and industrial associations is necessary for setting up standards and certification schemes, and to ensure acceptance of the resulting programs.

For biomass:

The French Wood Fuel Programme can be considered a successful regulation and an example to develop a certification system for high performance wood domestic heating systems.

For solar thermal:

- Maintain and strengthen the high level of harmonisation at European level of standards and harmonisation procedures. Avoid any national special way. Financial support is needed to support the necessary work at European level for new or updated standards and for the verification of the certification procedures.



National development plans

Developing national inventories of renewable energy resources – Identify possible sites

Access to relevant and updated information is an important pre-requirement for potential RES- investors. Regulations can dramatically improve the situation in this regard:

In the case of state-owned territorial commodities, only static inventories of geothermal resources are available or are being prepared by water research institutes or geological services. These services are not capable of meeting the requirements of neither the investing enterprises nor the licensing environment protection and water management authorities. In some countries the data access for the competent agency hosting the information and/or the inventory is not even enforced by the law.

Developing national dynamic inventories of renewable energy resources and reserves to register annual changes and allow country-scale modelling is highly recommended – for instance in the geothermal energy sector. To make such inventories comparable on pan-European level a common basic methodology could be elaborated, preferably via the assistance of Community level professional associations, e.g. EGEC, EuroGeoSurveys and EFG.

Another way to identify RES-H potential has been developed in Italy at regional level: In the field of biomass, regional energy and environmental plans have been drafted to identify possible sites and develop scenarios of biomass development in each region. The regional energy and environmental plans (PEAR) are part of the competence of Italian regions and provinces. These plans consider scenarios for energy sources and demand, with various emphases on renewable energy sources depending on the region. Environmental aspects and greenhouse gas reduction are also considered.



The plans influence the authorisation to private and public initiatives in the bioenergy sector: they identify possible district heating and large energy plants sites, plan the support to energy production facilities, estimate the availability of biomass. Projects Financing is provided by national sources and by the Structural Funds of the EU that have priorities according to areas; Objective 1 (Southern Italy), Objectives 2 and 3 (Central and Northern Italy). Communication of the plans is carried out through the local agencies that are organizing conferences. PEARs can be considered as successful regulations: In the north of Italy lots of district heating plants have been installed and are now in operation.

Setting guidelines on RES-Heat

Setting guidelines for biomass deployment was the objective of the Italian National Program on Renewable Energy from Biomass (PNERB), which was issued in 1998. The target was to replace by 2012, 8-10 Mtoe of fossil fuels with biomass coming from agriculture, forestry, livestock sectors and related industries. This has provided a powerful tool for bringing together different types of stakeholders:

- Central Government, with the function of stimulating, with a minimum financing contribution, regional and territorial projects;
- Local (regional and provincial) Administrations, with the task of defining and coordinating regional and interregional projects;
- Entrepreneurs from the agriculture, forestry and industrial sectors which implement locally the projects.

This regulation has increased awareness among stakeholders of the role of biomass. Lots of initiatives both from supply and demand sides have been undertaken leading to an increased contribution of bioenergy to the national energy mix. This is generally considered as a successful regulation.



Summary of recommendations on national development plans:

For geothermal:

- Developing national dynamic inventories of renewable energy resources and reserves to register annual changes and allow country-scale modelling is highly recommended.
- To make such inventories comparable on pan-European level a common basic methodology could be elaborated, preferably via the assistance of Community level professional associations.

For biomass:

- Regional energy and environmental plans help to identify possible sites and develop scenarios of biomass development at regional level.
- Setting guidelines for biomass helps increase awareness of biomass benefits among various stakeholders.