EGEC

European Geothermal Energy Council

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EGEC´s response to the EC Public consultation exercise on the Promotion of Heating and Cooling from Renewable Energies

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EGEC welcomes the intention and initiative of the European Commission to show the path towards a promotion of heating and cooling from renewable energy sources.

EGEC is committing itself to actively support a transition into an energy economy which is fair to all EU citizens, provides a level playing field for all actors on the EU scene, and aims at the goals of efficiency, sustainability, security and conservation of the local and world-wide environment.

EGEC hence will co-operate with all levels of EU politics, administration and industry to achieve these goals.

1) The obstacles

High initial cost :
High initial costs are in many cases a barrier, in spite of the fact that the overall lifetime cost of the system is very satisfactory. Those promoting and marketing heat pump systems may here be facing a pedagogical, or educational challenge. In addition to marketing arguments, environmental and comfort benefits of heat pumps should be stressed and valued.

To install a geothermal application, initial costs are more expensive that for conventional fuels, but operational costs are really less expensive. A geothermal applications is directly beneficial in a medium term period when oil barrel is more than 40 USD !

Low energy prices :
Low energy prices, which do not fully reflect the external cost of the different energies, are a significant barrier in some European countries. This is often related to the fact that even if a geothermal system is economically competitive, the energy cost difference may be too small to decide for the geothermal option. This is in spite of other benefits that e.g. a geothermal heat pump system offers, such as reduced CO_2 emissions, more comfort etc. This barrier can only be overcome by offering incentives, grants, renewable energy tax benefits for geothermal systems, exempted or reduced CO_2 taxes etc

Other energy sources are considered more successful principally because they are more known (coal is old, gas and nuclear are badly visible, oil is known due to its price). Part of them are promoted by traditional public services / utilities. And most of all, their costs don't reflect the reality of their total costs.

R&D and information :
EGEC has prepared a list of priorities for R&D required in the geothermal sector, as an input to the FP7 discussion process :

- Geothermal district heating : improve site assessment, modernisation and new plants in E/SE Europe and Turkey, innovative components (pumps, heat exchangers), optimisation of networks
- Shallow geothermal / geothermal heat pumps : non technical issues, quality, guidelines, regulation, infrastructure, information campaign

Social, legal and economic issues :
Geothermal energy has a really good social acceptance due to its advantages : ecological, renewable, present everywhere-everytime, without visual impact…

EGEC recognizes the organisational problem for its technology. Architects and engineers don't have all the knowledge necessary to apply geothermal energy in heating & cooling, There are not enough drillers, installers, competent designers, and providers for the materials in all EU countries.

The main obstacle is the presence of administrative and legal barriers : mining law, water law, environmental license. In particular a firm and protected right to use a certain geothermal resource is not clearly defined in many member states, resulting in investors hesitating to put money in such projects.

Another economic barrier is that the full VAT is imposed for geothermal district heating, instead of the lower rate like for oil and gas in heating.

2) An EU initiative

Heat is the largest consumer of energy, being greater than electricity or transport. Renewable heating sources (solar thermal, biomass, geothermal) have a huge potential for growth and can replace substantial amounts of fossil fuels and electricity currently used for heating purposes.
Europe needs to develop stronger policies to promote renewable heating and cooling.

Europe needs a Directive to promote heating and cooling from renewables.

EC Directives to promote renewables in the electricity and in the transport sector already exist, a Directive to promote RES heating & cooling is still missing. The Directive on the Energy Performance of Buildings will support RES-H development, but it is not focussed enough. The Directive does not apply to existing buildings <1000 m^2, where a large potential for RES-H lies. It will substantially support energy efficiency measures in the next decade. However, sustainability in the heating and cooling sector cannot be achieved only by reducing consumption. It is also necessary to switch production to renewables as soon as possible. Every drop of oil used for space heating could be used more meaningfully elsewhere. It is high time for bolder steps: the European Union must act united to speed up growth of renewable energies in heating and cooling.

(more details are given in part 15).

3) The local market

Per definition, geothermal energy is the energy in form of heat below the earth's surface. It has been used since antique times for heating, and for about 100 years also for electricity generation.
Its potential is inexhaustible in human terms, comparable to that of the sun.

Beside electric power generation, geothermal energy is today used for district heating, as well as for heating (and cooling) of individual buildings, including offices, shops, small residential houses, etc.
The largest geothermal district heating systems within the EU can be found in the Paris area in France, with Austria, Germany, Hungary, Italy, Poland, Slovakia and others showing a substantial number of interesting geothermal district heating systems.
Sweden, Germany and Austria are the leading countries in terms of market for geothermal heat pumps development within the EU.

In 2003, a total of approximately 2 Mtoe has been supplied by geothermal heating alone.

4) The successful policies

There is a wide variety of economic instruments in the EU countries which either support or inhibit the enhanced use of geothermal energy in Europe.
There are countries where the financial burden of fiscal nature (i.e. mining royalty, sewage penalty, groundwater use fee, environmental tax) are multiple, which breaches general taxation law. The arsenal of supporting instruments is colourful too, including tax exemptions, guaranteed take-over prices, green certificates, direct subsidies, to mention a few.

The German example shows clearly how much these supportive tools can contribute to the high growth rate of renewables in a country with moderate natural setting.
Moreover, there is a relatively low rate of return of the investment in geothermal energy and the economic risk is higher as compared to other energy sources.
This economics does not ensure the security of interested stakeholders and lead to a serious distortion of equal and open competition on the European level.

Green certificates and carbon credits are now increasingly discussed and their impact on further development of renewable energy systems is foreseeable.
Not so for geothermal direct use. So far, no "green label" is being issued for geothermal space heating, although it saves fossil fuel and thus reduces CO_2 emissions.
However, indirect supporting means that the installation of geothermal heat pumps can have significant impact.
For example, the Swiss Federal Office of Energy sustained a heat pump promotion program in the years 1990 – 1997. For the installation of heat pumps to replace fossil-fuel heating systems a subsidy of 300 CHF (200 €) per kWe was contributed. Nowadays, a large number of communal and cantonal utilities provide similar subsidies. This led to a veritable boom of ground-coupled heat pumps.

Definitely more supportive governmental policies and efforts are needed to speed up the development of geothermal resources for direct use. Only by these means can their great potential be tapped and utilized.

The Economic Situation of Geothermal Energy in EU
The situation is very different in the various countries and geothermal technologies, according to natural resources and political issues.

<u>Shallow Geothermal Energy (mainly ground source heat pumps) :</u>

- For shallow geothermal systems, in several countries a market-driven economy exists. This will be further boosted by the expected oil price development
- These countries comprise Sweden, Switzerland, Germany, Austria, and to a lesser extend Norway, Netherlands, etc.
- A transition is underway of GSHP technology into two new areas:
  - Southern Europe and Mediterranean, with an emphasis on cooling and heating
  - Eastern and Southeastern Europe, where slowly a demand for more comfort in houses is growing, and a group of people who can afford it.
  - Countries are in particular Czech Republic and Poland, with others following
  - A difficult situation is in UK and Ireland, where interest exists, some prestigeous plants have been built, but the US-influence is greater.

Deep Geothermal Energy

- In most countries, geothermal district heating needs some investment support, reduced interest loans, etc. to become economic.
- Cascade uses (district heating, industry, agri-culture, and other) improves economy, but usually are very difficult to achieve due to business obstacles, distances, etc.
- The main financial obstacle is the heat distribution network (example: Bruchsal, D). For heat distribution, Eastern European countries may have an advantage due to existing networks
- In France, heat from geothermal district heating carries the full VAT, natural gas only a reduced value
- Competition from conventional sources (in particular natural gas) even uses dumping prices to keep costumers
- Projects are affected by not adequate mining law, many taxes, fees and royalties. These expenses are too high compared to the annual heat sales, even in the biggest plant ; they comprise in some countries :
  - Concession fee
  - Mining royalty
  - Fee for geological information
  - Tax for surface installations
  - New parliamentary initiative for tax on geothermal water

Some additional aspects of geothermal electric power

- In countries with high enthalpy resources, geothermal energy production can be quite economic : Italy (since 1904!), Iceland, but also Greece and Turkey Islands like Acores, Antilles, etc. In other countries, support measures like feed-in tariffs are required; these are backed by the relevant EU directive on Electricity generation from Renewable Energy Sources
- Cost for electric power from coal and/or nuclear in many countries is subsidised more or less obviously, and even with existing feed-in tariffs, cost for grid connection and other obstacles are prohibitive to geothermal power use

5) The potential effects

- environmental : substantial decrease of CO_2 emissions
- economical : less expensive in medium and long term period
- social : innovative sector, development of SMEs, increase of employees in the sector

Forecasts (without specific support mechanisms EU-wide*):*

Employment figures now and in 2020

Geothermal	2010 jobs	2020 jobs
Total	6 000	10 000

Investments

In billion €	2001-2010	2011-2020	2001-2020
Total	4	7	11

Costs and forecasts

Geothermal	2005	2010	2020
Electricity	50-150 €/MWh	40-100 €/MWh	40-80 €/MWh
Heating & Cooling	4-10 €/toe	3-8 €/toe	3-6 €/toe

6) The statistical data

In the Altener 2004 project called "K4RES-H", EGEC collected many data in order to provide the "The Best available statistical data on Geothermal energy, for each EU-25 country".
Data could be collected for 21 countries of the EU 25 (Malta seems not to have any geothermal application, in Cyprus and Latvia the existence of some GSHP cannot be excluded, and in Luxembourg a few GSHP are expected). The quality of statistical data provided from the 21 countries differs considerably. There is no single source providing all data in good quality for all countries.
WGC 2005 comes closest to this goal. In general, not all direct use application are reported, and the number of GSHP in HP sales figures are not always easy to separate (in some cases only by estimation).

- Eurostat has data only for 13 countries, and mainly for direct use excluding GSHP.
- EHPA gives data on GSHP for 15 countries. Only seven countries can provide reliable statistics : Austria, Estonia, Finland, France, Germany, Netherlands, and Sweden.A major problem for Southern Europe countries is to draw a distinction between reversible HPs primarily used for heating purposes and air-conditioners with heat pump function. Some million air-conditioners with heat pump function predominantly used for cooling purposes in Southern Europe are disregarded in this statistics.
- The main source, WGC 2005, covers 20 countries and does not provide data only for 5 countries : Cyprus, Estonia, Latvia, Luxembourg and Malta.

To summarize, joint efforts to improve reliability and completeness of data are required. Main emphasis is to be placed on Southern European countries and information concerning stock of installed systems. An example how e.g. geothermal heat pump installations can be catalogued on a regional level has been shown recently by the the geological survey (HLUG) in the state of Hessen, Germany.

Recommendations to improve quality of statistics
The definition of geothermal energy is lacking in the acquis communautaire and the national practice is diverse - some authorities consider it 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.
_ *A broad sense legal definition of geothermal energy is needed in a relevant piece of Community legislation, e.g. the heating-cooling legislation in preparation.*

Inventories

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

_ *The development of national dynamic inventories of geothermal energy as to being capable of registering annual changes and allowing country-scale modelling is highly recommended. To make such inventories comparable on pan-European level a common basic methodology shall be elaborated, preferably via the assistance of Community level professional associations, e.g. EGEC, EuroGeoSurveys.*

Industry based / supply chain

In particular for the geothermal heat pump sector, statistics based on the supply of components (in this case heat pump units) from manufacturers can be helpful.

To conclude, we can consider to have sufficiently good data only for 4 countries. So a big work has to be done for the others in data collection.

- So firstly, the Institutions like Eurostat and the IEA or the national statistical offices have to pay more attention to geothermal heating and cooling in considering all applications.
- For the heat pump, we can agree it will be difficult to collect information about all old installations. But from now, we have to realise yearly survey on sales figures (by manufacturers associations) and on licenses granted (by local/regional authorities) in each country.
- For district heating, the municipalities have to be contacted to know their data. For agricultural and industrial applications, the drillers could be the good contact to collect statistics.

An important topic concerns the adoption of a unified conversion methodology for geothermal installations and notably heat pumps (GSHP). For GSHP, also a unified approach to count only the heat from the ground and to exclude the auxiliary power from the supply values should be found.

To finish, EGEC recommends that geothermal energy should be defined as the energy in form of heat beneath the surface of the solid earth, in all data collection.

7) The targets

Targets up to 2020 :

Geothermal	2000	2005	White paper targets 2010	Target 2020
heating & cooling	0,66 Mtoe	1,838 Mtoe	2 Mtoe (3.2 Mtoe)*	5 Mtoe (7.8 Mtoe)*

* after projection EGEC from January 2005; status 2003: 1.9 Mtoe for heating and cooling

MW installed and future potential

Geothermal	2000	2005	2010	2020
Heating & Cooling		6589,8 MWth	10000 MWth 16000 MWth *	25000 MWth 39000 MWth *

* after projection EGEC from January 2005

Annual growth rates up to now and expected until 2020

Geothermal	Real growth 1995-2001	AGR (Needed to meet WP targets) 2001-2010	AGR 2010-2020 (straight)	AGR 2010-2020 (accumulated)
Heating & Cooling	3,3 %	11,7 %	15,0 % (14,4 %)*	9,7 % (9,3 %)*

* after projection EGEC from January 2005

8) The indicators

There's a need for setting verifiable targets for heating and cooling at national and European level.
The methodology can be to present figures of the market or to focus on recommendations how to define targets. For geothermal energy, It appears more realistic to make recommendations as firstly statistics on heating and cooling need to be more detailed.
For this, the boundary conditions to be taken into consideration are :

- the current status (in RES-H energy production per capita)
- the potential of geothermal energy based on a study and an inventory of the resources
- per different applications: DHW, space heating, cooling, process heat, etc..
- kinds of usage: small residential, large residential, hotels, office buildings, swimming pools, agricultural applications, process heat in different kinds of industries (laundries, food industry, heat intensive industrial sectors ...), desalination, ...
- market structures (e.g. penetration of district heating)
- achievable growth rates
- training of architects, heating engineers, construction companies, installers
- distribution chains
- rates of new construction
- penetration of district heating
- assumptions on technological development able to make innovative applications largely available and/or price reductions
- social and economic impact
- technological / market developments

Moreover, it is recommended to not make projection only based on growth-rate, because for example the GSHP market is yet juvenile in a lot of countries and all conditions are not yet present to make such prospective. And targets could be defined for specific technology (heat pumps, district heating, cooling…) ; and for different intermediate period.

Concerning heating and cooling from geothermal resources, the possibilities of accounting are :
- the number of dwellings (objective 2010, 2015…)
- the total production in MWt

A unified definition of geothermal energy, at national and European level, has to be adopted soon and will be used in each regulations, communications, statistical methodology, perspective…
If the first goal will be to present good statistics, to have a good view of the present situation for geothermal heating and cooling, the discussion of the perspectives have to be agreed by all the geothermal community.
For that, a future creation of a Technology Platform will be more than useful.

Indeed, a European Geothermal Energy Technology Platforms could :

- Provide a framework for stakeholders to define research and development priorities, timeframes and action plans in the medium to long term.
- Play a key role in ensuring an adequate focus of research funding
- Address technological challenges that can potentially contribute to a number of key policy objectives.

And, it is clear that the actual market conditions for energy have to be taken into account in all these perspectives for geothermal energy.

9) Standards

Standards already exist in a few countries for shallow geothermal systems (e.g. VDI 4640 and DIN 8901 in Germany). Also some CEN standards on heat pumps cover some geothermal aspects (e.g. EN 15450, currently as draft).

In general, components of geothermal systems have to comply to existing standards (e.g. pumps, compressors, heat pumps, pipes, controls, etc.). These standards have been developed or are under development within the relevant technology areas.

Specific standards for the geothermal systems will mainly have to deal with the exploration, design, and installation (like VDI 4640 for the shallow systems). This requires both some common standards for the whole EU, and specific regional aspects according to climate, geology, and traditions of the building sector. Experience e.g. with the development of EN 15450 shows this need for opening to regional practice and circumstances.

Past experience proved that the geothermal sector has to be included earlier into standards that are developed from the perspective of certain heating technologies (a very positive example, initiated from inside the geothermal sector already in 1994, is VDI 4640). A Geothermal Technology Platform could offer an ideal tool for coordinated action on standardisation in the geothermal field.

It is expected to first have an increasing need for standards on the shallow geothermal technology, and later on the deeper and larger systems (district heating). Shallow geothermal standards need to deal with, among other items:

- Drilling procedures for safety, efficiency and environmental protection (groundwater protection)
- Quality of borehole heat exchangers, manifolds, etc.
- Sizing and design guidelines securing systems for sustainable and efficient operation
- …

10) Training and public awareness

To illustrate this activity, EGEC present s the Swedish example, the best success story in the EU :

<u>Way to success in Sweden :</u>
Governmental subsidies were given from the year 1981 to the year 1991 financial grants for heat pump installations were available. The form of subsidies has varied in type and size during the years. In the 1980s, subsidies were available for single and multifamily housing facilities, but during the 90s they have been available mostly for single family dwellings.
Sweden has had the following types of subsidies over the years:

- Loans with special interest subventions for single and multifamily houses
- Cash contributions to multifamily housing installation, dependent on the number of installations
- Cash contributions to multifamily housing installation, dependent on the total costs of installation
- Income tax reduction for single house residents equivalent to a certain percentage of the total cost up to a fixed amount (renovation subsidy)

The different subsidies have had a different effect on the market. The first two types aimed to increase the number of heat pump installation while the third aimed to stimulate the conversion of direct electric heated buildings into water loop systems and the fourth subvention aimed to stimulate the overall building industry and was valid for any kind of investment concerning the building fabric or the heating system.

The subsidies contributed to an increase of heat pumps sales, but they had to be carefully drafted. If the subsidies in Sweden had been drafted with better judgement from the beginning the effects could have been much more powerful and the establishment and growth of a functioning heat pump industry would have been faster.

Alternatives to subsidies

- Legislation, massive training of the market players and extensive long-term marketing of the technology can be alternatives to subsidies to hasten the market transformation for the heat pumping techniques.
- Other governmental support The Swedish government has followed an active heat pump development policy. Beside the subsidies, the Swedish government was also active in the field of communication and Information. Efforts were made, not only in technical publications, but also and above all in the general press and on television, an effort which had a very strong impact on market development. In Sweden, heat pumps are now considered a «natural heating» solution.
- Electricity utility Vattenfall : The electricity utility Vattenfall was especially dedicated in the field of heat pumps. They have financed manufacturers for research and development in the field of heat pump technology and they worked together with the energy engineer association and the plumbing association. Furthermore they have accompanied the movement through the setting up of a heat pump promotion program, and providing financial incentives with a view to reducing investment costs.

11) Dissemination

For dissemination, some promising channels can be indentified:

- main drivers : the geothermal community (engineers, consultant, financial, energy supplier, geological survey, heat pump salers, drillers, manufacturers and providers of geothermal equipments, national/regional/local authority…)
- regional, national and international associations need more support for dissemination activities, as they play a key role in interpreting between science, industry, consumers and politics to understand geothermal heating and cooling technologies and their possibilities.
- more effort is required for education on all levels, from school to university, to built an awareness of geothermal energy, and also to educate those who will in future be required to design and install the systems.
- local and regional energy agencies : Energy agencies have surely a key role to organise dissemination of geothermal practices and benefits
- Commission : the European Commission has surely to use its initiative role in proposing a directive, in monitoring the implementation and in proposing new programmes to develop RES.
- local authorities : Municipial and regional planning authorities can do much to promote implementation of geothermal technology; however, they need first themself to be educated on the technology, e.g.

through energy agencies. Including geothermal energy in local heat/energy plans is crucial. This is of particular importance in regions with favourable conditions for deeper geothermal systems (examples: Ile de France, Munich area, Po bassin, Hungarian plains, etc.).

12) Financial instruments

There is a wide variety of economic instruments in Europe which either support or inhibit the enhanced use of geothermal energy in Europe. The financial incentives schemes supporting geothermal heating refer to shallow and deep geothermal energy.

The summary of existing tools permits us to see in Europe :

- Tax exemptions/reductions exist in Hungary, France
- Loans are possible in Germany, Lithuania (theoretically) and Slovenia
- Direct subsidies in Belgium, Germany (limited), Lithuania and Slovenia
- Indirect support in most countries
- Guaranteed feed-in tariffs (yet for electricity only):
- Green Certificates in Hungary and Romania
- Carbon credits in Romania (first positive experiences in geothermal, with Denmark as partner; 5 €/t CO_2 avoided); in Germany, Poland etc. they exist, but do not yet have impact for geothermal energy
- Covering the geological exploration risk of larger geothermal systems is crucial for private investors

From this, we distinguish 3 successful tools:

- Loans/subsidies for installation
- Feed-in tariffs (with related regulations on grid connection etc.)
- Carbon credit trading as an external help

Even if there are good regulation / tools in theory, they do not help if the conditions, availability etc. are not clearly defined.

<u>Recommendations</u>

However it takes a period of 5 - 10 years to create a market. Therefore it is necessary that the subsidy is valid over a long time period.

The market players must know the conditions and be given an opportunity to develop products, marketing/sales channels and educate installers and service technicians over a reasonable timeframe.

The introduction of a subsidy must be loud and clear. When a subsidy is introduced, all parts of it must be described :

What is the nature of the subsidy?
How large amount is it?
When is it valid?
For how long is it valid?
Who will receive the subsidy?
How does one apply?

The transition from a period of a certain subsidy to another or to a time without subsidies must be very smooth, and with great notice.

For a subsidy to have the intended effect it must be neither too large nor too small. Too large an amount will create a great change in the demand of the product that the market players will not be able to deal with.

Too small an amount, on the other hand, will not give the boost that is intended.

A subsidy should be just large enough to give reasonable profitability, be it for a geothermal district heating system or for a ground source heat pump installation to a real estate owner.

Judging from the experiences in Sweden and Germany, a heat pump installation should have a pay-back period of 5~7 years compared to other heating systems, in order to be attractive.

13) Impact on the RES market

- coordination with existing policies :

The relevant national legislation is spread throughout the mining, energy, environmental, water management and geological acts, sometimes in a contradicting way, and the licensing authority framework for geothermal facilities is rather complex in most countries. ⇒ *A Community level communication shall foster Member States to adopt a coherent legislation system and to designate a rational framework of competent authorities in order to ease application for geothermal energy use.*

The definition of geothermal energy is lacking in the acquis communautaire and the national practice is diverse - some authorities consider it 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. ⇒ *A broad sense legal definition of geothermal energy is needed in a relevant piece of Community legislation, e.g. the heating-cooling legislation in preparation.*

A best available technology reference document on geothermal energy could best prepared in conjunction with setting up a Geothermal Technology Platform. By describing the state-of-art of geothermal energy exploitation, the up-to-date technologies and their environmental aspects, and the economic instruments , it could serve as strong, quasi-legal document which all stakeholders can refer to in their future activities in direction of the enhanced, sustainable use of geothermal energy.

We cannot see the risk of a market distortion. Fossil fuels will have, on a longer term, a reduced role due to their emissions and the finite character of the resources. The market will experience drastic changes over the next 20-30 years, and RES can, on the contrary, help to stabilize the heating market in general, and prices and availability of heat in particular. No action towards alternatives would result in more dramatic distortion within this century.

14) Residual heat

This term is a more correct word for the commonly used “waste heat”. In shallow geothermal systems, no combination is possible, and no impact towards each other.

However, deeper and larger geothermal systems typically use district heating to supply heat to the consumers. Residual heat can be fed into such systems. A good planning is required to ensure the optimum ratio of geothermal and residual heat to best meet the demands. An example exists e.g. in Ferrara, Italy, with heat from a waste incineration plant. This kind of combined uses should be compatible with a RES heat directive.

On the other hand, a general inclusion of residual heat into a RES heat directive is not desirable. It would jeopardize the perception of the clean and sustainable character of the energy, and could decrease the public acceptance of such a directive.

15) Considerations

EGEC calls for strong and consistent action on the European level to promote renewable heating and cooling and ask the EU institutions to adopt a RES-H Directive.

Motivation for action at EU level Experience has shown that, without an EU policy framework, RES-H develops well only in a few Member States, and that this is not caused by the distribution of natural resources. If efforts to promote renewable heating and cooling will not take place in a coordinated way throughout the Union, the EU will miss its overall targets on renewables and will continue to dissipate precious fossil sources and electricity that could be used for other purposes.

Purpose of the Directive

A Directive must have a clear purpose, namely to increase the share of renewable energy in the heating and cooling sector, and aim, namely to contribute to attaining objectives such as reducing GHG emissions, environmental protection, sustainable development, security of energy supply and in this way producing economic growth with significant employment effects in future oriented sectors.

Setting national targets for renewable heating and cooling Targets represent an important step in policy making. The rapid market development and technological advancement of the renewable energy sector accelerated rapidly after the setting of concrete targets in the electricity and biofuels Directives in recent years. Analogous targets for the heating and cooling sector will guide national and local policy makers in their decisions and send important signals to investors and the public.

An overall target for heating and cooling from renewable energy sources in the EU by 2020 shall be set for at least 25% of overall heating & cooling consumption. This must be broken down into binding national targets for each Member State, taking into account their natural resources and the capacity already in operation. National support mechanisms It is at this stage not desirable to set up a European wide harmonised support mechanism for RES-H. Instead we call for the setting of positive framework conditions, encouraging the Member States to define their own instruments based on proven best practice options including awareness raising campaigns, direct financial incentives, tax exemptions, binding regulations and other measures as appropriate in each country or each RES-H technology.

National support mechanism should ensure that the targets are reached, by delivering a stable framework for investments on the supply side and by guaranteeing an adequate return on investment for the user of renewable heating devices.

Removing administrative barriers

In many countries, administrative barriers and unfavourable bureaucratic conditions limit the use of renewable heating and cooling. Often these barriers are due to esthetical, planning or safety regulations that have not been conceived keeping in mind the specific situations of RES-H applications. Where appropriate, Member States should enact improvements aimed at facilitating regulatory procedures for the installation of renewable heating and cooling installations.

Reliable statistics and monitoring of the results :

The whole heating sector is often neglected because of a lack of statistical information. This is particularly true for RES-H systems that in most cases are not directly monitored due to their small dimension and decentralised use. Some statistics report only the renewable energy production commercially sold to third parties, thereby excluding substantial parts of RES-H. As a consequence, public opinion and decision makers often heavily underestimate renewable heating and cooling. The establishment of reliable statistics and monitoring procedures is essential to the development of RES-H. It will help motivating end users and investors, it will help local regional and national policy makers to set the right framework conditions and it will allow to measure the fulfilment of the targets.