

***Question 1 – Considering that a number of technologies are available to promote Heating and Cooling from renewable energies (RES), what are the main obstacles (economic, technological, social, organizational, etc) to their more widespread use? Why are other energy sources more successful in Heating and Cooling than RES?***

The heating and cooling sector is missing in the policy framework. Specific sectoral targets were included in the White Paper, but they were never included in European legislation. This policy hole is jeopardising the chances of the EU to reach its overall target for renewable energies, as recently stated by the European Commission itself.

Renewable heating (RES-H) so far received less political attention than renewable electricity (RES-E), both at EU level and in most Member States. Another reason may be that RES-H products are sold mainly by SMEs, which have not yet a strong visibility in the EU energy market.

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.

Despite generally much lower operation costs, investment costs are usually still significantly higher. Even though the pay-back of renewable heating systems is in many cases within reasonable periods, homeowners and business find it often difficult to finance the investment costs.

In many countries and regions in Europe, information and awareness levels about the different RES-h technologies and their application possibilities are still quite low. On the one hand, RES-h market development is hampered by a no/low demand from the consumers due to a lack of understanding how they could use RES-h for their homes or business premises. This leads, on the other hand, to a reluctance of crafts enterprises (e.g. installers or builders) to enter RES-h business fields which results in a very limited offer on the market increased RES-h requires changed investment behaviour of millions of energy consumers. For majority of them - be they homeowner or business or public bodies - RES-h is still "exotic". Even if they are aware of the existence and know that many of them are mature technologies, mostly they are not considered when an investment decision, e.g. for a new heating system, is being taken due to the lack of demand, there is a lack of qualified companies and staff to sell, install and maintain RES-h installation. This carries the risk that in a fast growing market, quality suffers. Presently, statistics on the heating sector in general are weak. A speedy establishment of market data and reliable statistics that allow progress monitoring is essential also in order to create awareness.

***Question 2 – In the light of the subsidiarity principle, do you agree that an EU initiative regarding the promotion of Heating and Cooling from RES can be justified? If so, what type of effective measures should be taken by the EU?***

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.

The development of RES-H markets in Europe is strikingly unbalanced. Very few countries have a very large share of the installed capacity at EU level, a fact that cannot be explained by the distribution of natural resources

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 and as the Commission itself stated “*Fulfilment of the 12% target for 2010 will require a step change in national policies towards the use of renewable energy in heating*” A first step to reach this change in national policies would be to introduce a framework on the European level.

***Question 3 – There is a need to identify possible ways to overcome the reasons why this type of energy is not more widely spread. A major role in this is the attitude of end-users, and the potential cost disadvantage, including transaction costs or lack of convenience of some energy sources. Considering all these factors, do you believe that there is a case for a local market for Heating and Cooling from RES strong enough to justify action at EU level?***

Europe's renewable heating and cooling businesses, many of which have can be found in otherwise less industrialised areas, would be boosted by a stable legal and financial framework. A significant number of these companies, which play a leading role in developing and marketing technologies and appliances, are currently operating on a national or European level and would then be in a position to become global players. Increasing the share of renewable energy sources in the heating market also offers enormous opportunities for local craft industries, for agriculture, forestry and small- and medium-sized industrial enterprises. Most of the new Member States with their large agricultural sectors are in a particularly good position to benefit from this development.

A directive would help creating economies of scale, thus reducing the investment costs of RES-h energy in the medium term and building up a European industry with a significant number of jobs. These economies of scale would not be limited to manufacturing but also in all the subsequent steps of the value chain, e.g. in areas such as system design, marketing and distribution, set-up and maintenance, customer care etc. many of which are delivered at a local and regional level.

Developing well-functioning RES-h markets is also an important policy to protect consumers and industry and to ensure stable costs for heating and cooling in the coming years.

Not only are socially vulnerable groups in society threatened by increasing heating bills, but also the competitiveness of businesses through the financial burden for space heating and cooling. As presently the heating sector is largely based on imported oil and gas, it is particularly affected by the increasing import dependence and the resulting prices increases.

***Question 4 – Taking into account the different conditions in Member States and regions, according to you, what are the current successful policies/measures on promoting Heating and Cooling from RES? At what level are these actions taken and who is responsible for their implementation? Are they cost effective? What are the success factors (tax incentives, financing schemes, social acceptance, others)? Are they transposable to another level? How?***

In some countries and for some technologies, renewable heating has already made significant progress: for example, solar thermal collectors have the highest market penetration per capita in the 4 EU member states Cyprus, Austria, Greece, and Germany with a respective installed capacity of 480/200/180/60 kW<sub>th</sub> per 1000 inhabitants with the EU25 average being about 40 kW<sub>th</sub>. It is obvious from the list of these countries that there must be other market drivers than a sunny climate.

Biomass heating has been most successful - both in district heating systems as well as in building-specific installations - in Nordic countries and in Austria and is now seeing very encouraging developments in countries such as France or Germany. Especially in most of the New Member States very large biomass potentials can be found.

This very uneven market development shows that, without an appropriate EU policy framework, RES-h develops only well in a few Member States, and that this is in many cases not due to the distribution of natural resources. If efforts to promote renewable heating and cooling are not significantly increased in all Member States, it is likely that the EU will miss its overall renewable targets on renewables and will continue to waste precious fossil sources and electricity that could be used for other purposes.

Continuity in time is the most important single element of a well designed and managed policy measure for RES-H. Several examples from different countries and RES-H technologies show that discontinuous financial incentives can damage the development of healthy market structures by creating a stop-&-go market dynamic. Under such conditions, the supply side and the professional groups mentioned above are discouraged from investing. A short-timed incentive scheme may boost demand for a while, but does not create healthy market structures.

It is at this stage not desirable to set up a European wide harmonised support mechanism for RES-H. Instead 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.

***Question 5 – There is a need to identify the best strategy to tackle this issue and how actions could deliver bigger benefits. Due account has to be taken to the potential effects on the use of energy sources (considering also their origin – domestic resources or imports). What would be the environmental, economic and social (employment) effects (positive and negative) of an initiative to promote Heating and Cooling from RES, specifically on the substitution of conventional energy sources? Please refer to examples and the appropriate level for action.***

EREC calculated concretely the benefits in terms of environment, investments and employment.

The following findings were made if a 25% share of RES-H by 2020 would be reached: cumulative investments (2001 to 2020) of about 150 billion Euro would be necessary, this would result in approximately 500000 new fulltime jobs.

In addition at least about 250 Million tons of CO<sub>2</sub> would be avoided per year compared to the average fuel mix in a BAU scenario. Other assumptions on avoided fuel costs and avoided external costs result in savings of minimum of 150 billion Euro during the above mentioned period. This is based on the average EU fuel consumption and price of 2001. Assuming much higher figures for fossil fuels in the future the avoided fuel costs will be much higher. In addition one has to question in addition general assumptions such as “what exactly is cost-benefit? what will be the price of carbon in 2020? what is the benefit in monetary terms of import independence?”

***Question 6 – One of the main issues is the low availability and weak quality of statistical data. What measures could be taken to address this situation and should the EU be involved in this process? Do you have knowledge of any reliable and consistent data on this sector***

Statistics on the heating sector in general are weak. A speedy establishment of market data and reliable statistics that allow progress monitoring is essential. 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.

***Question 7 – Taking into account the quality and availability of EU 25 existing data (which is in many cases rather poor), what is the feasibility of using targets to the promotion of Heating and Cooling from RES? What type of targets should/could be used (on energy produced, on sales of equipment, on the number of installations, on the replacement rate of conventional fuels, etc)?***

Targets represent an important step in policy making. The rapid market development and technological advancement of the renewable energy sector in recent years ensured progress on the White Paper targets in the area of electricity and biofuels, where Directives have set concrete targets. 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. 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.

Binding and quantitative targets expressed in percentage of RES of the total heating and cooling market are an option, broken down per Member State - leaving Member States free in their decision to choose those RES-h technologies that they consider most cost-effective but also as most beneficial to their economies.

***Question 9 – Developing standards could be one option to facilitate the implementation of energy efficient equipment and Heating and Cooling from RES. Standards would have also to take into account cultural or geographical characteristics (like architecture). This would imply a legal framework which provides for the political goals, while leaving the details to be defined by the European Standardisation bodies (CEN/CENELEC) and the stakeholders (industry) on how to achieve them.***

***Should the EU promote the development of standards for RES in Heating and Cooling in order to raise a market for specific equipment? What type of standards could be used? Do you consider that fuel standards (for example) will improve the opening of the market? Would it be feasible to use standards that are currently used in other sectors? Please give evidence.***

Concerning standards, the situation is very different in the various RES-H technologies. In the biomass sector, it is certainly urgent to define European standards in many areas, including the sustainability of the biomass production.

Requirements for efficiency of heating and cooling systems (beyond Art. 8 & 9 of the Directive on the energy performance of buildings) and standardisation of biomass fuels is a necessity which should be regulated on the European level.

***Question 10 – In order to facilitate the development of a policy action to promote Heating and Cooling from RES, specific actions towards citizens should be considered as they are often the final decision makers. Would it be useful to facilitate training on the specific technology so that professionals are able to better promote it and install it? Who should facilitate that training? What measures could be taken to raise public awareness in order to promote/market this type of equipment/solution?***

Accompanying measures are particularly important so as to provide comprehensive information, to introduce the appropriate technologies to the professional groups which will be applying them and to ensure quality standards.

Member States/EU should seek to ensure that the public is fully informed about possible applications of renewable sources of energy for heating and cooling.

Member States/EU shall ensure the publication of studies concerning the benefits to consumers from the use of renewable sources of energy for heating and cooling

Member States/EU at the appropriate level shall encourage the high quality of the products and services concerned by taking appropriate measures. Members shall encourage the public sector to accord priority to heating and cooling from renewable sources of energy as part of procurement policy, taking due account of cost-effectiveness, particularly as regards newly constructed buildings or buildings being renovated. The EU shall encourage the launching of EU-wide information campaigns for existing budgetary lines to highlight the use of renewable energies in heating and cooling. The EU shall encourage the utilisation of structural and cohesion funds for the support and promotion of renewable heating and cooling.

**Question 11 – Who could be the main drivers to facilitate the dissemination of Heating and Cooling from RES? Should Local and Regional Energy Agencies be involved on articulating ESCOs, SMEs and Local authorities, providing them with instruments or creating platforms to pursue Heating and Cooling from RES? Is there a role for the Commission? How could this be done? Should local heat planning be pursued in order to take full advantage of the existing potential in a certain area?**

Action is needed at all political levels. From urban planning and authorisation procedures (typically) at municipal level, to (typical) regional training and awareness raising activities, to (typical) national financial incentive and European guidelines and targets.

At the same time, creating unnecessary doubling of administrative procedures should be avoided. In certain countries, there have been financial incentives for RES-H at national, regional and local level at the same time, each of them with its own application procedure, eligibility criteria etc. If a national incentive exists, for instance, local authorities are welcome to add some more support. However, they should consider (or even be obliged to) using the same procedure as for the national incentive and simply award additional money to those who have received the national one.

The development of ESCOs in the renewable heating/cooling sector can be very important for the market growth where the owner of the building usually hesitates to take over the risks and tasks related to the operation of RES-H system.

Commitment of Member States and regions to establish concerted action plans which include financial support programmes, legal measures as well information, awareness and training programmes to ensure that the EU targets will actually be reached. This

would allow due respect for the principle of subsidiarity and existing European rules in the energy and environmental spheres.

**Question 12 – Would financing instruments be significant in promoting Heating and Cooling from RES? If so, what form could these take and what would be the source of the financing? What other forms of support could be envisaged?**

Financial incentive schemes (FIS) 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.

In most EU Member States, FIS to promote RES-H are in force or have been enacted, often with a mix of national, regional and local schemes.

FIS can play an important role in promoting RES-H, if they are well designed, carefully managed and accompanied by appropriate flanking measures. If they are not, their positive effect is limited and can be even counter-productive in the medium and long term

**Principles of best practice for financial incentives for RES-H**

- Avoid creating an incentive to postpone installation of RES-H systems: the introduction of a new FIS, or the increase of an existing one, should not be announced before they become valid.
- Within a FIS conceived to last some years, adjustments of certain conditions should be possible to adapt the FIS to the market development. The adjustments should be discussed with market experts and be introduced aiming at minimising any negative impact on the market development.
- The parameters concerning the eligibility of specific applications, technologies, the amounts offered and the categories that may apply for the incentive should be coherent and carefully tuned. The accompanying awareness raising and training measures should be targeted accordingly.
- The procedures should be simple, both for the applicants and for the public administration.
- The amount of the subsidy should be related to the amounts of renewable energy delivered by the system. Requirements on measurement of renewable heating and cooling should be related to their costs and benefits.
- Innovative renewable heating applications, such as cooling or industrial process heat, should be awarded a specific promotion, taking into account their future potential and additional benefits.
- The FIS should not create barriers to trade within the European Union. Any technical parameter linked to the eligibility for a FIS should be strictly oriented to European standards and certification procedures, when they are available. Otherwise, a FIS can contribute to create “isolated markets” at national or even regional level, thereby increasing the costs for the users.

**Kinds of financial incentives**

If these principles are fulfilled, each of the three main kinds of FIS for RES-H used so far in Europe can be useful to develop the market:

- Grants for the investors

- Tax breaks
- Loans at privileged rates

The experience shows that each of them had both cases of success and of failure. In general, privileged loans are interesting only for larger RES-H systems, because usually the buyers of small RES-H systems do not consider to take a loan for an investment of few thousands euros. Tax breaks schemes tend to be less exposed to the instability related to the availability of public budget, though also tax breaks are in fact negotiable at every annual budget decision.

It is at this stage not desirable to set up a European wide harmonised support mechanism for RES-H. Instead 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.

**Question 13 – Considering the current uses of renewable energy sources, how could a new initiative on Heating and Cooling from renewable energy sources be better raised in coordination with the existing policies regarding biofuels or electricity generation from renewable energy sources? Would Heating and Cooling from renewable energy sources distort the market and/or jeopardize the targets for these other policies? Would it affect nonenergy use market for biomass? If so, how? How to overcome that possible difficulty?**

Since the industry in the sectors electricity, heating/cooling and biofuels is completely different a clear and targeted initiative for the missing legislative pillar for heating and cooling is necessary. Coordination between the existing policies should lead to an overall increase of the use of renewable energy sources in all three sectors. At this stage there is no indication that an initiative on RES-H would lead to market distortions in the other sectors.

**Question 14 – Taking into consideration that a large number of industries and incineration plants produce heat as a sub product, how could Heating and Cooling policies be linked with the recovering of this “residual heat”? What synergies could be exploited in promoting Heating and Cooling from renewable energies with a more efficient use of residual heat? Should incentives be developed, a market raised for heat exchanges or another policy be adopted? Who would be the coordinator of these heat exchanges? Should we link this initiative with district heating development?**

Waste heat can only be considered as renewable, as long as the original source is renewable.

- If the original source is renewable, the policy support should be mainly oriented to the original source.

- If the original source is not renewable, the use of waste heat can be nevertheless useful and should be supported, but it must be considered as an energy efficiency measure.

The discussion on renewable heating and cooling is already complex enough to charge it with the complex technical issues related to waste heat, its origins and definition (e.g. it must be made sure that the policy support for waste heat does not create a hidden incentive for burning fossil fuels or producing more urban waste).