Intelligent Energy Europe

Project Fact Sheet

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ProHeatPump

Programme area:	SAVE, ALTENER, SAVE & Horizontal Key Actions
Status:	ongoing
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Partners:	▪ RWE Energy AG, Germany ▪ Groupement pour la Recherche sur les Echangeurs Thermiques, France ▪ The University of Edinburgh, UK ▪ SP Technical Research Institute of Sweden ▪ Energikontor Sydost, Sweden ▪ Dobrich Local Agency for Energy Management, Bulgaria
Website:	www.proheatpump.eu
Objective:	▪ Promotion of heatpumps for heating in the residential sector and SMEs in selected areas
Benefits:	▪ Improved marketing strategies to promote heat pumps in regions with low market penetration
Keywords:	▪ Heat Pump ▪ Promotion of Heat Pumps ▪ Heat Pumps and renewables
Duration:	12/2006 – 05/2009
Budget:	€ 654.907,00 (EU contribution: 48,67%)
Contract number:	EIE/06/072

Short description

The overall goal of the proposed project was to contribute to the reduction in the use of fossil fuels for heating purposes. Key objective of the project has been to promote energy efficient heat pumps for heating. The project focuses on systems for the residential sector and SMEs, i.e. small to medium size heat pumps and in particular on refurbishment where the needs for promotion is higher then for new buildings. The share of heat pumps and the testing of promotion means for heat pumps in identified target regions should deliver information on appropriate marketing approaches to promote an extended use of heat. Promotion of heat pumps has been done by the means of improved and steady information on heat pumps of the target groups end users and installers as well as policy makers. Another important project topic was the investigation and evaluation of combinations of heat pumps and renewables.

Expected and/or achieved results

- Increase the number of heat pump installations during the project time on selected target areas.
- Suitable and practical information material for each target group (installers, end users and policy makers) on the possibilities and the advantages of heating by the means of heat pumps.
- Improved marketing strategies to promote heat pumps in European countries with low market penetration but high potential for heat pumps. Based on experiences from countries with high market share
- Presentation of favourable conditions for the combination of heat pumps and renewables

Lessons learnt

Differences of framework conditions in participating countries had been underestimated. The comparability of the chosen target areas is more complicated as expected. Differences in market situation, requirements on heat pumps, state activities, market chains, parameters of profitability of HP use, competition to other heating means are significant.

A key lesson learned concerned the project design. As already pointed out in the Progress Report in October 2008 a lack of knowledge about the market conditions in the participating countries caused a delay in the implementation of the related activities and production of deliverables. The period between the kick-off meeting and the first project meeting in September was far too long. More content-related face-to-face discussions in the partnership were needed to lay a sound base for the work process. Further lesson was that the structure of the deliverables partly leads to fragmentation of content into too many deliverables which might hamper their quality. Therefore the partners decided, as far as useful, linking deliverables to combined documents.

All partners have undertaken an analysis of the heat pump market in their countries. The descriptions give an overview of the market in the partner countries, explain the structure of the national markets for space heating with a special focus on heat pumps, and clarify the role and relations of the different market actors (manufacturers, installers, drilling companies, architects, national energy agencies, etc.). This analysis formed the first step in understanding the operation of the national markets in space heating.

Generally it can be stated that a developed gas grid seriously hampers the promotion of ground source heat pumps. The high cost of HP units and of drilling boreholes puts the price of a heat pump installation at between two or three times that of a state-of-the-art gas boiler. Owners of newly constructed houses are reluctant to take out additional loans to finance a more expensive heating system even if in the longer term it would be much more cost effective. The explosion in energy prices however seems to have a clear impact on the attractiveness of investment in heat pumps, and market growth is likely to be much faster with the new energy prices.

The project has been developed in spring 2006 and written from the point of view in an underdeveloped German market. Heat pumps at that time were not accepted by environmentalists due to the consumption of fossil or nuclear produced electricity. They were not recognized as renewable energy sources. These assumptions formed the skeleton of the project design. The project was designed to give support for heat pumps by showing their green character and, in the last consequence, help to improve the conditions for heat pumps sales in Germany.

The reality during the implementation period of the project was different under manifold aspects. Efficient lobbying of the heat pump associations brought the recognition of heat pumps in the German legislation and the new European RES Directive. Heat pumps today do not any more need to defend themselves as non ecologic. This discussion was almost a German one. The project has shown that beside price, grant schemes and political framework also tradition in using relatively cheep electricity for heating plays an important role which has been underestimated when the project application has been written. In Germany and UK electricity for heating never has been the first choice due to the fact that electricity was too expensive for heating. In Sweden and Norway which have been the most developed markets for heat pumps in the past there is a long tradition in electric heating with formerly cheap electricity from hydropower. Heat pumps which increase the efficiency of using the meanwhile more expensive electricity never needed to jump over the psychological hurdle not to use electricity for heating.

The same case is given with different reasons given in France and Bulgaria. France has a high share of electricity produced (CO^2 neutral) by nuclear power plants. This historically led to relatively low prices for electricity and a relevant use of electricity for direct heating. The simple and effective scheme of saving taxes for installing energy efficient heat pumps set up by the French government boosted the sales of heat pumps in that country and made France to be the most relevant market for heat pumps in Europe in 2008. The further effect was the same then in Sweden: Also in France there was never a taboo to use electricity for heating. A different situation is given in Bulgaria which is still in transition from the former “socialist” energy economy to market conditions. Electricity (and also natural gas) is relatively cheap in Bulgaria and plays still, as in former times an important role for heating. Since the project was focussing on ground source heat pumps it was stated very late during the visit on the spot in March 2009, that Bulgaria is a very dynamic heat pump market. In the city of Varna nearly all residential buildings but also hotels and offices where heated by electricity driven split heat pumps.

The described examples show that it is not helpful if the relevance of a transnational project is defined from the narrow point of view of one of the partners. This helps to create a good learning curve for the participants in a project but it hinders to create a maximum of high quality output with very limited resources.

Installing HPs in the renovation of old houses is problematic, as a serious energy audit often indicates that for a heat pump to be economic and effective, expensive additional measures like insulation of roof and wall cavities or a new heat distribution system would be required.