

## Ask your national contact about SolarCombi+

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AEE INTEC ([www.aee-intec.at](http://www.aee-intec.at))

### France:

Tecsol ([www.tecsol.fr](http://www.tecsol.fr))

### Germany:

Fraunhofer ISE ([www.ise.fraunhofer.de](http://www.ise.fraunhofer.de))

### Greece:

CRES ([www.cres.gr](http://www.cres.gr))

### Italy:

EURAC ([www.eurac.edu](http://www.eurac.edu))

University of Bergamo ([www.unibg.it](http://www.unibg.it))

### Spain:

Ikerlan ([www.ikerlan.es](http://www.ikerlan.es))

### Industry partners:

CLIMATEWELL ([www.climatewell.com](http://www.climatewell.com))

Rotartica ([www.rotartica.com](http://www.rotartica.com))

SK Sonnenklima ([www.sonnenklima.de](http://www.sonnenklima.de))

SOLution ([www.sol-ution.com](http://www.sol-ution.com))

SorTech ([www.sortech.de](http://www.sortech.de))

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solarcombi+

## Markets for Solar Combi Plus systems

Solar thermal  
domestic hot water  
heating (DHW)

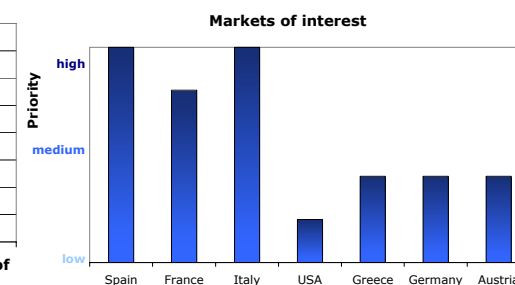
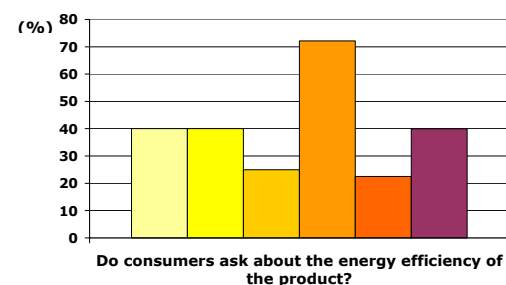
DHW

& space heating

Solar Combi

& space cooling

Solar Combi+



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Intelligent Energy  Europe

Markets for Solar Combi Plus Systems

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## What is a Solar Combi Plus System?

The EU Project SolarCombi+ deals with small-scale solar cooling systems (< 20 kW cooling capacity) in combination with traditional solar thermal systems for domestic hot water preparation and space heating.



## Market Situation & Trends of Small Scale Chillers

The first part of the project was devoted to an analysis of possible markets for these solar combi plus systems. Because the competing technology are conventional (non-solar) air conditioning systems, the available technological solutions with small cooling capacity as well as their markets in Europe were analysed.

The air-conditioning market in Europe is currently showing very high growth rates. This is partly due to some extremely hot summers in recent years but also to increased living standards and therefore higher comfort expectations.

Cooling supply for a building can be produced either locally or centrally (see figure 1). Central chiller systems account for the majority of the installed systems in Europe, the most popular cold distribution systems being air handling units or fan coil systems.

For small cooling demands, typically room air-conditioning units or multi-split systems are used. Application areas for these systems are mainly in smaller buildings such as the trade and residential sector and small office buildings where in the past mainly local solutions were used. However, small chiller systems have an increasing market share in many European countries. These smaller buildings are seen as the most promising target market for solar combi plus systems, which offer a central chiller system powered by solar heat. This type of system can be connected to a chilled water distribution system or an air-handling unit minimizing the operating costs while ensuring high comfort.

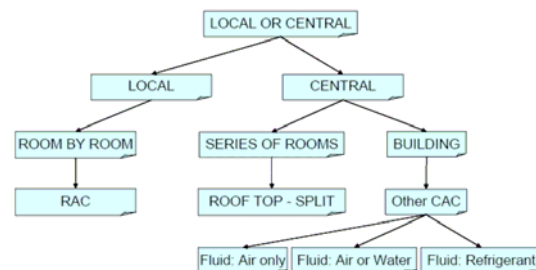


Figure 1

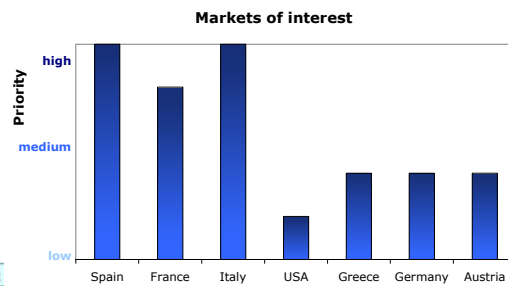


Figure 2

A survey among the industrial participants of the SolarCombi+ project showed that they see the most interesting markets for their solar combi plus systems in Spain, Italy and France (see figure 2).

## Solar Thermal Markets in Europe

Currently, the largest market for solar thermal collectors in Europe is Germany. In southern European countries except Greece the use of solar thermal collectors has been limited in the past despite the favourable climatic conditions in these countries. However, in recent years collector sales have increased dramatically (especially in Spain and France), figure 3. Solar combi plus systems have a large potential here because systems can be used year around for domestic hot water, pool heating, space heating and last but not least cooling. Although small solar combi plus systems are relatively new to the market, sales are rapidly increasing. The industrial partners involved in this project have already installed more than 130 systems all over Europe.

## Survey Among Air Conditioning System Retailers

A survey among air conditioning system retailers in the countries participating in the project was conducted in order to find out what the attitude of consumers is towards energy efficient products. The result was that in almost all countries in Europe, energy efficiency is a major topic (see figure 4). While other criteria such as maintenance effort, noise, the trademark and aesthetics are also important aspects when buying air conditioning systems, the majority of consumers pay attention to energy label and efficiency data. 40% of them are even willing to pay more for a product if it is energy efficient. This survey shows that solar combi plus systems can have a significant market if they are as reliable and convenient as conventional air conditioning systems even if they are somewhat more expensive.

## Next steps

To identify the best system configurations for solar combi plus systems, virtual case studies will be carried out for the most promising application areas (small office and residential buildings) for a range of European climatic conditions. Please check back on our homepage for the results in 2009!

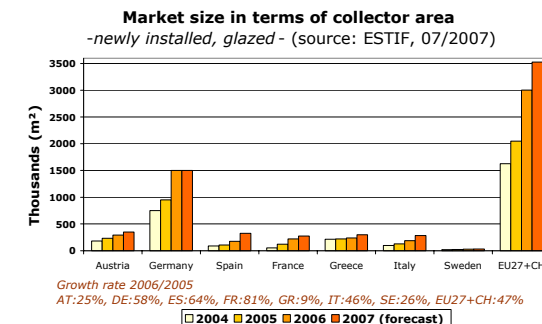


Figure 3

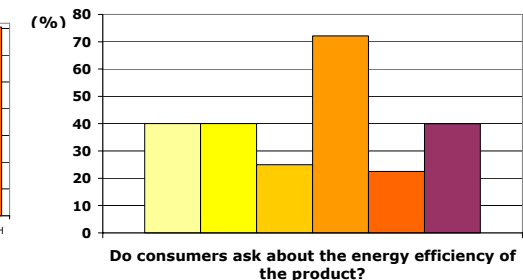


Figure 4