

2012 HIGHLIGHTS

SHC Task 48 Quality Assurance and Support Measures for Solar Cooling

THE ISSUE

The demand for air-conditioning is rapidly increasing, especially in developing countries. And the potential for solar cooling to meet this demand is immense. The results of past IEA SHC work in this field (most recently, *SHC Task 38: Solar Air-Conditioning and Refrigeration*) have demonstrated the technology's potential for building air-conditioning, particularly in sunny regions, and identified work needed to achieve economically competitive systems that provide solid long-term energy performance and reliability.

OUR WORK

Finding solutions to make solar thermally driven heating and cooling systems efficient, reliable and cost competitive is the goal of this SHC Task. These three major targets will be targeted through four levels of activities:

- 1) Development of tools and procedures to characterize the main components of solar air-conditioning systems.
- 2) Creation of a practical and unified procedure adapted to specific best technical configurations.
- 3) Development of three quality requirements targets—prescriptive and performance based.
- 4) Production of tools to promote solar thermally driven cooling and heating systems.

PARTICIPATING COUNTRIES

Australia
Austria
Canada
China
France
Germany
Italy
Singapore
United States

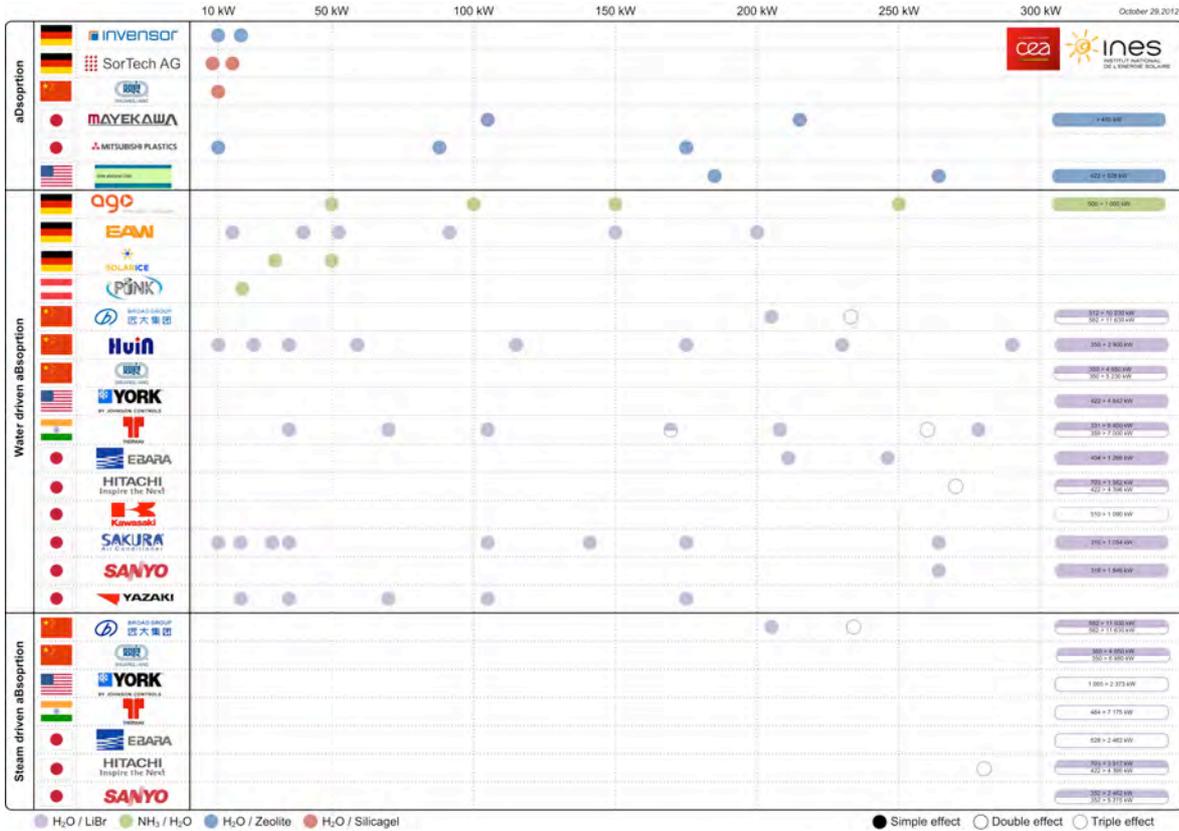
The scope of the work covers technologies for the production of cold water or conditioned air by means of solar heat, that is, starting with the solar radiation reaching the collector and ending with the chilled water and/or conditioned air transferred to the application. Although the distribution system, the building, and the interaction of both with the technical equipment are not the main topic of the Task this interaction will be considered where necessary.

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Task Leader Daniel Mugnier
TECSOL SA (French Solar Energy Engineering Office)
Email daniel.mugnier@tecsol.fr
Website <http://task48.iea-shc.org/>

KEY RESULTS OF 2012

Compatible Chillers with Solar Cooling

A list of market available chillers compatible with solar cooling was prepared to give a full vision of the actual situation in this field.



Market Screening of Solar DEC Systems

Twenty-eight operating solar DEC (SDEC) system were identified. In terms of numbers, Germany, Italy and Austria cover two-thirds of all the identified SDEC installations. Based on the available information, only two SDEC systems operate using liquid sorption material and all the other SDEC systems use solid sorption material coating rotating matrixes or fix beds. Task experts will continue to collect data to fill the gaps in the technical SDEC system data.

Identified SDEC systems

