Finding solutions to make the new generation of solar heating and cooling systems cost competitive.

OBJECTIVES
To analyze the interest of new generation (PV or solar thermally driven) solar cooling & heating concepts systems for buildings in all climates and select best solutions for highly reliable, durable, efficient and robust solar cooling and heating (ambient + DHW) systems.

To support the development of a strong and sustainable market for solar PV or new innovative thermal cooling systems. It is focusing on solar driven systems for both cooling (ambient and food conservation) and heating (ambient and domestic hot water).

AREAS OF WORK

Subtask A: Components, Systems & Quality
Leader: Tim Selke (AIT, Austria, tim.selke@ait.ac.at)
Focusing on the knowledge of the commercially available equipment on the AC side compatible with PV electricity supply as well as solar thermal cooling equipment. This subtask will permit to easily classify the ST/PV cooling products/application (schematic square view method) so as to prepare a certification process. It will estimate the value of electricity and LCA of the main components and systems.

Subtask B: Control, Simulation & Design
Leader: Roberto Fedrizzi (EURAC, Italy, roberto.fedrizzi@eurac.edu)
Investigating the different control possibilities of new generation cooling & heating systems for buildings in order to select the best strategies for given climates and countries and developing modeling tools to predict performances and size/design systems and to manage smart interactions with the electric grid.

Subtask C: Testing and Demonstration Projects
Leader: Richard Thygesen (Mälardalen University, Sweden, richard.thygesen@mdh.se)
Stimulating, monitoring and analyzing the performances of field test systems and demonstration projects for new generation solar cooling & heating systems.

Subtask D: Dissemination and Market Deployment
Leader: Daniel Mugnier (TECSOL, France, daniel.mugnier@tecsol.fr)
Disseminating results of work to technical stakeholders and policy makers and creating and promoting certification and standardization schemes.

Outcomes
- State of the art of new generation commercially available products
- Technical report on optimized control strategies for solar cooling & heating systems
- Design tool including a country- and climate-sensitive economic analysis
- Handbook on new generation solar cooling and heating systems
- International workshops
- Meetings with policy makers at the national level

Duration
March 2013 – June 2017

Participating Countries
Australia
Netherlands
Austria
Spain
France
Sweden
Germany
Switzerland
Italy

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