

Price Reduction of Solar Thermal Systems

Driving down the costs of solar thermal systems is not just about cheaper collector production. In fact, post-production processes, such as sales, installation and maintenance account for up to 50% of the price that end consumers pay. This new IEA SHC Task, Price Reduction of Solar Thermal Systems, will investigate these other factors and find ways to reduce systems costs. The Task's kick-off meeting was hosted by Fraunhofer ISE in Freiburg, Germany the end of October. Researchers and industry representatives from all over the world participated.

The significant reductions in material costs have had little effect on the consumer price for a solar system, as shown by Fraunhofer ISE's market studies carried out within the framework of IEA SHC Task 39: *Polymeric Materials for Solar Thermal Applications*, which ended in October 2014. "In SHC Task 39, we learned that polymers offer many new opportunities, but they cannot solve all of the cost problems that solar heat has. In SHC Task 54, we will also have to look at the distribution channels, installation and maintenance costs," says Sandrin Saile of Fraunhofer ISE and the leader of SHC Task 54's Subtask D on information, dissemination and stakeholder involvement. Ms. Saile emphasized that a "comprehensive approach covering all aspects of the value chain" is needed to achieve significant cost reductions.

Significant market research needs to be done to identify opportunities for cost saving potential in post-production processes. "We want to look at markets with high potential for solar thermal. Then, we plan to define typical reference systems for the different regions and applications, for example, pumped systems with flat plate collectors for Europe or thermosiphon systems for the MENA region," states Ms. Saile. The reference systems will first be used by the researchers to establish cost benchmarks and then to look for ways to reduce the purchase price by up to 40%. Increasing the use of standardized and mass-produced components (such as connection sets) and more plug-and-play in system installations are two of the ideas to achieve such an ambitious goal. Additionally, the researchers will explore ways to make solar thermal more attractive by improving marketing campaigns and consumer-oriented designs.

Task Work

SHC Task 54 is managed by Michael Köhl of Fraunhofer ISE's Service Life Analysis Group. Over the next two years, Dr. Köhl and experts from seven countries representing Australia, China and Europe will work towards reaching a 40% reduction in the purchase price of select solar thermal systems. To do this, the Task is organized into four work streams:

- **Subtask A: Market Success Factors and Cost Analysis**
(Leader: Michaela Meir of Aventa, Norway)
- **Subtask B: System Design, Installation, Operation and Maintenance**
(Leader: Stephan Fischer of ITW University of Stuttgart, Germany)
- **Subtask C: Cost-Efficient Materials, Production Processes and Components**
(Leader: Gernot Wallner of JKU Linz, Austria)



SHC Task 54

Price Reduction of Solar Thermal Systems

Duration

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Participating Countries

Australia
Austria
China
Germany
Italy
Norway
Switzerland

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- **Subtask D: Information, Dissemination and Stakeholder Involvement**

(Leader: Sandrin Saile of Fraunhofer ISE, Germany)

Industry Support

This type of work requires industry partners. "Wherever they may be located around the world, all companies and organizations with projects in this field should contribute their ideas on the price reduction of solar thermal systems and are invited to participate," says Dr. Köhl. At the kick-off meeting, industry participants gave

short presentations on the background of their company or organization and their experiences and expertise they will bring to SHC Task 54. Many members of the recently finished SHC Task 39 are now part of this new Task, such as the Norwegian solar collector manufacturer, Aventa, Austrian material specialists from the University of Linz, and system experts from the University of Stuttgart.

For more information on SHC Task 54 contact Michael Köhl, Task 54 Operating Agent, michael.koehl@ise.fraunhofer.de, or visit the Task webpage, <http://task54.iea-shc.org/>.