

2015 HIGHLIGHTS

SHC Task 54

Cost Reduction of Solar Thermal Systems

THE ISSUE

One of the greatest challenges of the 21st century is to secure a sustainable energy supply and to considerably reduce CO₂ emissions and the potential serious consequences of climate change. The challenging goals with regard to the contributions of renewable energy cannot be obtained without considerable growth of the solar thermal markets worldwide. Therefore, cost-competitive, efficient and reliable solar thermal systems are required. The first of these attributes is particularly hard to achieve as the prices for the production of solar thermal systems are still far from being equalled by the prices end-users have to pay. A great number of complex, costly and oftentimes non-transparent work steps are needed in order to bring solar thermal from the factory to the actual users. Task 54 is looking for ways to optimize each of these steps and is also looking into the social political contexts in which solar thermal installations are embedded. The ultimate goal is to strengthen the solar thermal industry by finding solutions for the cost-efficient production and installation of solar thermal systems and their marketing at a competitive price.

OUR WORK

Task 54 aims to reduce the purchase price for end-users of installed solar thermal systems by evaluating and developing sustainable means to reduce the production and/or installation costs of materials, sub-components and system-components.

Special emphasis is being placed on the identification and reduction of post-production cost drivers (e.g., channels of distribution). An extensive market research and the definition of reference systems, cost analyses, and the study of socio-political boundary conditions for solar thermal prices in selected regions will provide the basis for the evaluation of cost-structures and cost reduction potential. Additionally, ways to make solar thermal more attractive by improving marketing and consumer-oriented designs are being explored.

PARTICIPATING COUNTRIES

Australia
Austria
China
Denmark
France
Germany
Italy
Norway
Switzerland
UK

Task Date 2015-2018
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KEY RESULTS OF 2015

Kick-Starting the Work on Price Reduction

The Task 54 kick-off meeting was hosted by the Fraunhofer Institute for Solar Energy Systems ISE in Freiburg on October 21-22, 2015. Around 28 participants from Australia, Austria, France, Germany, Italy, Norway, Switzerland and a special guest from the Republic of Korea launched this three year project. The meeting was supplemented by a technical tour through Freiburg's eco-village, Vauban, where pioneering housing projects show the great potential of energy efficient building projects when end-users are involved. Task 54's aim is to make the end-user of solar thermal systems the center of attention and to work towards attractive and affordable solar thermal systems for markets around the world.



Investigating Cost Factors along the Value Chain

With the aim to make dominant cost factors of solar thermal systems more tangible, Task 54 launched two questionnaires on system and installation costs. The questionnaires were distributed around the world with help of Task 54 country representatives. The installer survey was also distributed to installer societies and energy efficiency and building experts. The results will set the basis for the future work of Task 54 and will direct its focus on the areas with the greatest potential for optimization. Some of the results will also be used in the IEA SHC report, *Solar Heat World Wide Report 2016*.

SHC TASK 54 Data Collection on Installation

Application type	System type	Collector technology	Collector area (m ²)	Storage volume (l)	Total solar panel area (m ²)	Installation cost (€)	Notes
Residential	Water heating	Flat plate	10	1000	10	10000	
Residential	Water heating	Flat plate	15	1500	15	15000	
Residential	Water heating	Flat plate	20	2000	20	20000	

How to Make Solar Thermal More Attractive

To inform the international solar thermal community of the SHC's latest activities, Task 54's basic assumptions and work plan were presented at the international Conference for Solar Heating and Cooling SHC 2015 in Turkey, Istanbul, hosted by GÜNDER. 233 participants from 32 countries had a chance to engage with issues around the topic of price reduction and gave important impulses on the question of how to make solar thermal more attractive for the actual end users. The results of discussions inside and outside the conference room were actively taken up by Task 54, which will continue its work in the upcoming Task meeting in May 2016.