

New SHC Projects in 2020

New Task on Solar Process Heat Starts in January

Our new project, Task 64: Solar Process Heat, builds upon our past work in this sector. The primary driver for continuing this work is the fact that the industrial sector accounts for approximately 30% of the total energy consumption in OECD countries. The major share of this energy is heat for production processes at temperatures that can be provided by solar thermal technologies.

The Task's main objective is to identify, verify, and promote solar heating plants in combination with other heat supply technologies for process heat supply, such as fossil and non-fossil (biomass and biogas) fuel boilers, combined heat and power, heat pumps, or power-to-heat. Doing this will in turn help solar technologies be a reliable part of process heat supply systems.

Over the next four years, an international team of experts will work together to:

- Develop innovative hydraulic schemes for future process heat supply. These schemes will deploy different regenerative or highly efficient heating technologies to maximize the final energy and greenhouse gas emission savings compared to monovalent regenerative heating systems
- Define modularized and "normalized" components/packages for these applications (e.g., components/packages for the balance of plant, solar field, interfaces and hydraulic circuit).
- Develop simulations and monitoring tools for assessing the potential benefits of integrating Solar Heat into industrial processes. Assess monitoring strategies to help improve the performance of actual systems.
- Investigate standardization and certification of solar process heat technologies to support the existing activities and to suggest and develop new innovative standardization procedures and certification aspects.
- Prepare guidelines targeting industrial end-users to tackle the technical and non-technical barriers to market penetration and showing how this technology is a simple, reliable, innovative, affordable and profitable solution for decarbonizing industry's heating (and cooling) supply.

Interested in learning more about this project? Contact Andreas Häberle of SPF Institute for Solar Technology, andreas.haerberle@spf.ch



Emmi Dairy Saignelégier in Switzerland uses parabolic trough collectors to generate steam for different dairy processes. (Source: NEP Solar AG / SHIP database, <http://ship-plants.info/>)

“This new Task will be an efficient information exchange hub for international technology providers, planners and researchers to develop the wide range of process heat opportunities for solar thermal technologies.”

ANDREAS HÄBERLE, SHC Task 64 Operating Agent

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Planning Underway for a Working Group on Life Cycle and Cost Assessment for Heating and Cooling Technologies

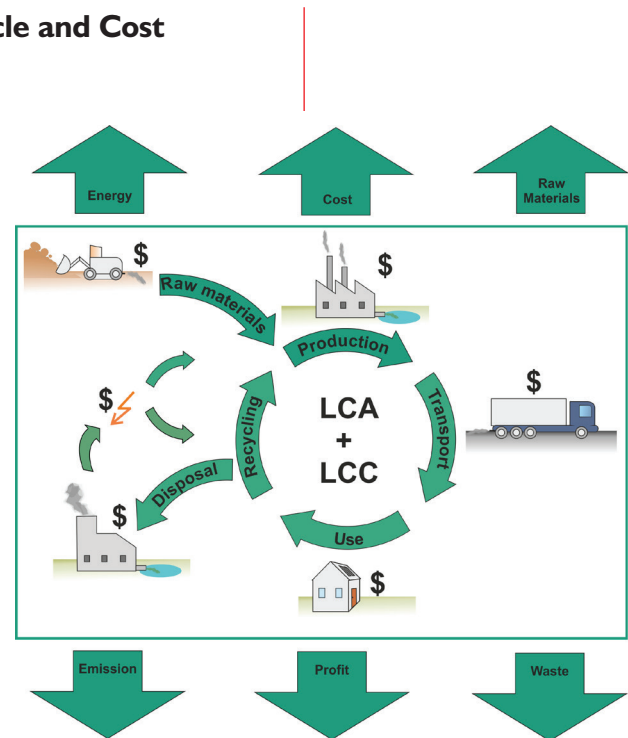
Increasing political efforts to tackle urgent environmental problems like climate change, biodiversity loss and the rising demand for scarce resources lead to more regulations and standards for all kinds of products. Solar heating and cooling systems are considered as clean energy sources. Still, research on increasing their efficiency and decreasing their costs should not lead to trade-offs between technological innovation and (new) environmental burdens.

To build on the recent IEA SHC work on LCA and LCC, experts from Fraunhofer ISE (Germany), University of Palermo (Italy), CISRO (Australia), University of Stuttgart (Germany) and other institutions have formed a consortium to propose a new IEA SHC Working Group. The focus of the proposed work will be life-cycle-energy and environmental performance of products and systems from the solar heating and cooling industries, as well as their life-cycle costs. The scope of the work will include different heating technologies, such as heat-pumps, electrical heating, bio-mass and condensing fossil combustion.

The overall goal is for this to be a joint activity between industry and research to promote international collaboration on the sustainability and economics of renewable heating technologies. The existing methodology and data for Life Cycle Assessment and Life Cycle Costing will be applied and tailored to the systems and technologies. And reference systems will be defined as well as current and prospective scenarios designed and analyzed. The environmental impacts of the SHC technologies will then be assessed and compared to those of other technologies and trends in the improvement of the SHC environmental profiles. The economic optimization will be based on the LCOH calculation established in IEA SHC Task 54: Price Reduction of Solar Thermal Systems.

New Partners Welcome

The consortium is looking for more research and industry partners to contribute to tasks like the definition of methodologies, evaluation guidelines and reference systems, data collection and impact assessment as well as networking and exchange. If interested, please contact Dr. Karl-Anders Weiss at Fraunhofer ISE (karl-anders.weiss@ise.fraunhofer.de) for more information.



Collaboration with other IEA Technology Collaboration Programmes is key for the success of this project. For starters, we look forward to cooperating IEA PVPS and IEA to exchange information, share project experts and hold joint meetings.

KARL-ANDERS WEISS, Fraunhofer ISE