



SO-PRO

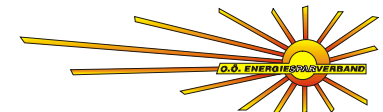
Solar Process Heat

SO-PRO

www.solar-process-heat.eu



Contract N°: IEE/08/425/SI2.528532
Duration: 28 months (1.6.2009-30.9.2011)
Coordination: O.Ö. Energiesparverband





Project summary

Approach

- bringing together know-how from industrial processes, solar thermal and regional market development
- trans-sectoral approach (not limited to specific industrial sectors/branches)
- carrying out targeted awareness raising and information activities and identifying & supporting pilot projects

Objective

- triggering the starting up of markets for solar process heat in 6 European regions for low temperature process heat

Project duration

- 01/06/2009 – 30/09/2011





Solar Process Heat - Background

- In principle, enormous potential for using solar thermal systems in industry: about 30% of the total industrial heat demand is at temperature levels below 100°C which can be provided with commercially available solar thermal collectors
- However, the market in Europe and globally is very much in its infancy - a few hundred installations exist





Solar Process Heat - Main barriers

Lack of information across the value chain:

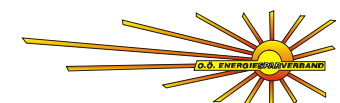
- solar companies often lack an understanding of the complexity of industrial processes and system integration
- specialists in industrial energy systems know generally very little about solar thermal technologies
- management in industrial companies is not aware of the possibility of using solar thermal
- lack of standardised solutions and communication among these groups

Economic viability

- often very low prices for fossil fuels in industrial companies
- generally, lower acceptance of longer payback periods in industry
- often unused industrial waste heat available (which is often more economic to use)

SO-PRO Main Results (1)

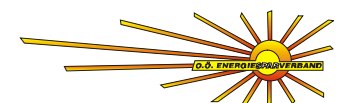
- a learning and market development process was started in the 6 project regions
- a very positive feedback from stakeholders across Europe
- the press echo created by the partners was excellent with significant coverage in daily and technical press as well as in relevant online media
- the feedback on the tools developed within the project was very good, stakeholders confirmed that they found them very useful
- there are commitments to continue the training courses in all project regions
- project partners will continue cooperation, the first step is establishing an informal network "Solar Process Heat Network Europe"



SO-PRO Main Results (2)

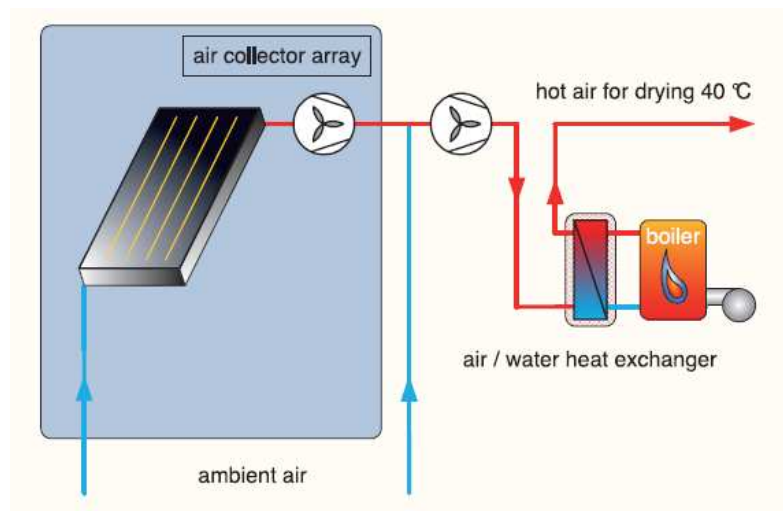
Quantitative results include:

- 173 persons trained
- 1,684 participants in project events
- 9 pilot project triggered
- 18 companies present solar process heat on their website as a business field
- 168 press articles
- targeted mailings to more than 7,500 stakeholders
- 21 professionally designed publications in 5 languages, 13,000 copies issued



Tools

- energy screenings in 91 companies
- checklists for industrial decision makers completed by 80 companies
- planning guidelines for different industrial applications (English & regional versions)



CHECKLIST for the company _____

"K.O. criteria"	Yes	No
Does the company need process heat at temperature levels below 100°C?		
Is space available to install solar collectors?		
Is this space oriented towards the south?		
Does the company use fossil fuels?		

If any of these questions about economic feasibility.

If these questions are all answered, please also complete the answers. The better the economic and

"O.K. criteria"

Does the company require process heat?

Is process heat required at least 100°C?

Is the temperature level of the process heat required at least 100°C?

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Fraunhofer ISE

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Regional campaigns

6 regional campaigns carried out, including:

- 18 regional round-tables with 650 participants
- 6 training courses
- targeted mailings to more than > 7,500 companies
- 21 professionally designed publications in 5 languages



International dissemination

- European training seminar
- international seminar
(held in the framework of the World Sustainable Energy Days 2011)
- 3 project newsletters (sent to 2,600 addresses)
- project publication
- stand at the "Hanover Fair"



Pilot projects

- 9 pilot projects triggered
- main conclusions:
 - triggering pilot projects was the most challenging part of the project
 - the economic crises impacted and delayed the projects
 - pilot projects are strongly depending on national/regional funding framework
 - it is important to continue to pin-point applications where solar process heat is economically feasible today



Lessons learnt

Economic viability is more likely if:

- low temperature process heat is required throughout the year
- no waste heat from other processes can be used
- heating oil is the main fuel
- dedicated funding schemes are available

Major information gaps

The lack of information and know-how needed for a successful market development of solar process heat turned out to be even greater than anticipated. Continued awareness raising activities and targeted information are needed.

Policy support

Substantial policy support is needed:

- including solar process heat in national/regional renewable action plans & policies
- R & D support
- support to dissemination on European/national/regional levels
- dedicated financial support through well-designed programmes

Partners & contacts

Coordinator:

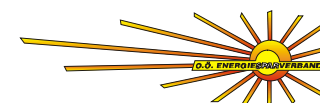
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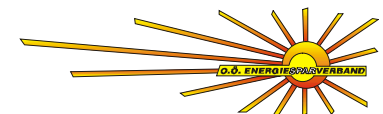
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Solar Process Heat - Main barriers

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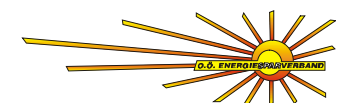
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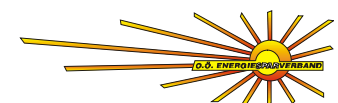
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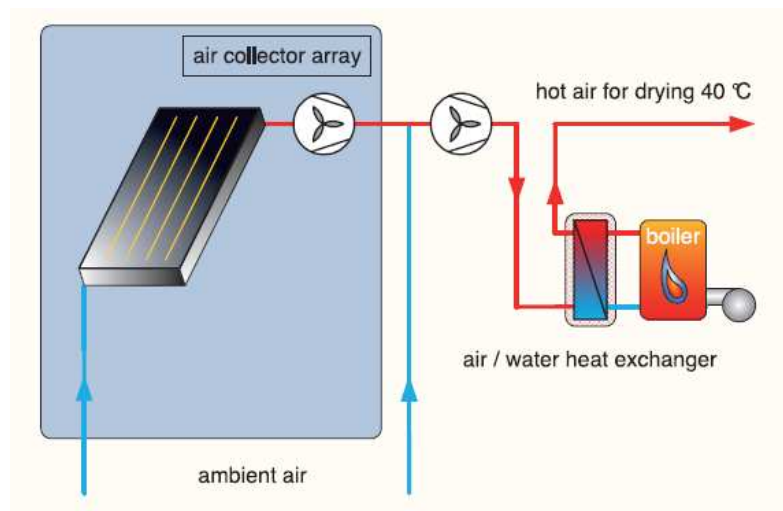
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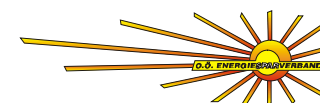
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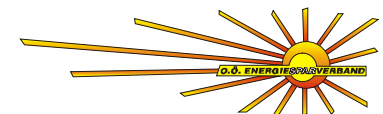
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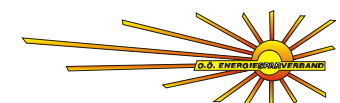
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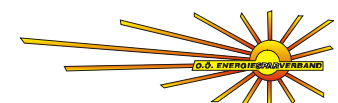
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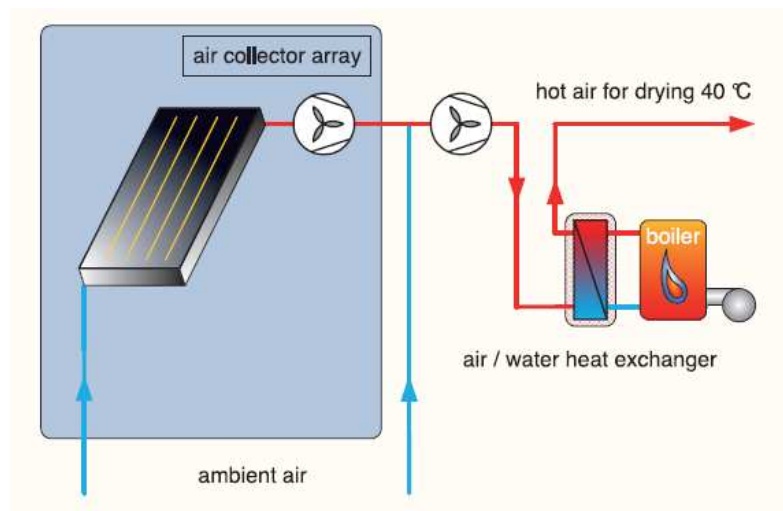
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