

WP 1. Next generation of systems

Work package No.: WP 1	Starting month: 0														
Work package title: Next generation of systems															
Activity Type¹: Coordination activities															
	Leader	Other partners with major involvement													
Partner No.:	SPF	ITW	ARS	TNO	ENEA	INETI	NCSR	CSTB	INTA	SERC	UNI K	ECO	AEE	UNI O	BYG
Person-months per partner:	6.7	3.5	0.6	0.3	0.6	3.5	0.6	0.6	0.6	3.5	2.9	0.8	2.9	0.6	2.3

WP 1: Objectives

Development of a new generation of solar thermal systems and their introduction to the market.

WP 1: Description of work

1. Market survey of today's system technology:

Detailed survey concerning the state of the art of solar thermal system technology in different European countries as well as studies on new system concepts being carried out with respect to:

- system purpose (domestic hot water and / or combisystems for single and multifamily houses, solar cooling)
- system size, energy demands for domestic hot water and space heating or cooling load respectively
- system types: pumped systems, thermosiphon systems
- auxiliary energy: natural gas, electricity, oil, wood, electricity (used for heat pumps)
- system efficiency, system yield
- material demand
- system costs (material, installation)
- ecological impact of the used materials
- operation strategy of collector loop: low-flow, matched flow, high flow
- market aspects: today's market share, trend over the past 5 years
- integration into buildings (e. g. roof or wall mounted)
- installation techniques and time needed for installation

The data will be used to group the systems into system classes with similarities. This classification shall lead to five promising system types with high impact on the solar market. Within these five system types also climatic aspects (southern, central and northern European climate) have to be taken into consideration. With regard to combisystems, the

¹ For Coordination Actions each work package must relate to one (and only one) of the following three possible Activity Types: Coordination activities, Training activities, Management activities.

results of the Altener Project “Solar Combisystems” will be used as a basis for the identification of promising system types. Marketing aspects will be determined on the basis of the “SOLTHERM” Project.

2. Theoretical system evaluation

The five identified system types will be further evaluated with regard to system efficiency (reduction in auxiliary energy demand), used materials, ecological and installation aspects as well as costs. In order to ensure the know-how transfer to solar industry the results will be discussed during workshops with industry participants to derive general recommendations for future system development.

3. Know-how transfer

The findings of the system evaluation will be transferred to a broader scope of industry participants in the frame of national workshops. Furthermore, the results will be discussed with WP4 members with regard to future standards concerning general requirements and test procedures for a new generation of solar thermal systems.

4. On-site system evaluation

First prototypes (approximately 10) of the new system generation (delivered by solar industry) will be evaluated on site as a basis for:

- know-how transfer to a broader range of industry and other interested parties
- the demonstration of the (simple) installation of the systems
- the demonstration of the system efficiency
- the investigation of the applicability of the new standards defined in WP4

Field workshops for installers will be organised to demonstrate the advantages of new system designs. Furthermore it is planned to elaborate appropriate guidelines for the installation of the new generation of systems.

WP 1: Deliverables

- WP1.D1: Summary report on today’s system technology
- WP1.D2: Report about theoretical system evaluation
- WP1.D3: Workshop with manufacturers
- WP1.D4: Design and installation guidelines for the new system generation
- WP1.D5: Results of the on-site evaluation of the new system generation

WP 1: Milestones² and expected results

- WP1.M1 Identification of five promising system types (month 6)
- WP1.M2 Selection of systems to be further evaluated (month 12)
- WP1.M3 Selection of systems used for on-site evaluation (month 12)

² Milestones are points where major results have successfully been achieved as the basis for the next phase of work, or which serve as control points at which decisions are needed; for example concerning which of several technologies will be adopted as the basis for the next phase of the project.