

**SOLARCOMBI +
WP5 - Training on package
solutions
Status and last steps !**



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SOLARCOMBI+ : WP5

Training on package solutions

➤ Content

- Goals, concept & synergies
- Planning
- Development of material
- Organisation events/courses

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- **Goals:** To create a comprehensive set of training units and didactic material. For the participating countries, training courses will be prepared and evaluated through pilot courses.
- **Audience:** Supply side
Mainly installers (+ planners)



Practical training



Real installation feedback



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➤ Task 5.1 Preparation of training materials

Inputs from Manufacturers and especially from WP4 (month 20 = May 2009)

=> month 22 = July 2009 in fact !

Task 1	Preparation of training material TECSOL will guide the Industry partners in preparing their training material and planning the courses	D5.1-D5.5, D5.6	TECSOL, together with industry partners
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Deliverable(s) of this work package:

D5.1 Training material related to the package solution – ROTARTICA (month 22)

D5.2 Training material related to the package solution – CW (month 22)

D5.3 Training material related to the package solution – SorTech (month 22)

D5.4 Training material related to the package solution – SOLution (month 22)

D5.5 Training material related to the package solution – SK (month 22)

D5.6 Training material on SolarCombi+ to be included in trainings organized by related projects as e.g. SOLAIR (month 22)

D5.6 Training material 10 pages, PDF or PPT (public) => Synthesis of what was prepared for the courses...

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➤ Task 5.2 Implementation of pilot trainings

3 pilot training courses/industry partner for 20-30 people => 350 installers

2 day course : 1 theory + 1 practice

<p>Task 2</p>	<p>Implementation pilot trainings Three pilot training courses per industry partner for 20 – 30 people in the different participating countries (at least one per target country, distribution depends also on chiller partners' target markets and solar thermal partners) The general concept foresees 2 day-courses: 1 day theory and 1 day practice o the package. This time is needed, because not only installation, but also maintenance and exploitation need to be described, which are quite specific, and in general not known for absorption/adsorption chillers. The training courses will be announced online (on project and partner websites), on fairs and through the usual dissemination channels of the industry partners</p>	<p>D5.7</p>	<p>Industry partners, together with their solar thermal partners</p>
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D5.7 Pilot training courses on package systems organised by each industry partner (at least 3 per partner → 15 courses with 20 – 30 participants each → more than 350 participants (month 27)

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- **Task 5.3** **Evaluation of the trainings**
(Report on pilot training courses, recommendations for optimisation)

Task 3	Evaluation of the trainings and optimisation of materials for further trainings (to be implemented outside the project frame)	D5.8	TECSOL
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D5.8 Report on pilot training courses, recommendations for optimisation (month 28)

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Outcome of this work package

- Each industry partners has elaborated tailored training material on its package solution(s)
- Moreover training material to be included in trainings in related project (e.g. SOLAIR, but also upcoming ones) has been prepared
- More than 350 solar thermal installers have been informed and trained on package solutions in pilot training courses.
- These pilot training courses have been evaluated and s
- Optimised training materials and concepts are ready fo

Written on the deliverable list...:

“At least 15 courses with 10 participants each → >150 participant “

The countries covered by the courses will be held are a priori the ones, where the industrial partners are implemented or present (but the list can be enlarged in the next months), however also Greece will be covered.

Rotartica → Spain, France, Italy

CW → France, Spain, Italy

Sortech → Germany, Spain, Italy

SOLution → Austria, Germany, France, Spain, Portugal

SK → France, Germany, Spain

Targeted countries

Real targeted countries

Rotartica/FAGOR : Spain

Climatewell : Spain

Sortech : Greece

SOLution : ?

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Benefits by target groups

- *TG1 Producers of small scale sorption chillers* included as direct partners
Benefit: Training material prepared, installers trained on their solutions, relation with solar thermal partners on training courses established, first experiences evaluated.
- *TG2 Solar thermal enterprises:*
Benefit: On the one hand relation with chiller partners on training courses can be established, on the other hand, if no such partnership exists, the participation in training courses might open new collaborations and markets
- *TG3 Professional groups:*
Benefit: detailed information on concrete package solutions
- *TG5 Potential consumers:*
Benefit: installers trained on package solutions guarantee for high quality installations

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Time schedule

Sept 2007

June 2009

December 2009

Project phase / Duration of the project (in months)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Work package 1: Management																														
Work package 2: Market analysis																														
Work package 3: Virtual case studies																														
Work package 4: Determination of standard applications and most promising markets																														
Work package 5: Training on package solutions																														
Work package 6: Dissemination and Communication																														
Work package 7: Common Dissemination Activities																														
Project meetings ^a	x						x						x								x			x						x
Project reports to IEAA ^b										PR										IR										FR*
Project deliverables ^c			D6.1 D6.5				D2.1 D2.2 D2.3 D2.4	D2.5 D6.5			D6.2		D3.1 D3.2 D3.3			D4.1		D2.6 D2.7		D4.2 D4.3 D4.4 D4.5 D4.6 D4.7 D4.8 D4.9 D4.10 D6.2		D5.1 D5.2 D5.3 D5.4 D5.5 D5.6 D6.3 D6.5 D6.9					D5.7 D5.8		D1.1 D6.2 D6.4 D6.6 D6.7 D6.8 D6.10 D6.11 D6.12 D6.13	

Easy possibility to ask for an extension of WP5 till Month 30, end of the project (deviation)...

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Contributions

Role and contribution (tasks) of each partner in this work package:

No	Participant	Role & Contribution	Tasks	Hours
4	AEE INTEC	Support of SOLution in preparing training material	Task 1	68
6	TECSOL	WP leader Coordination, Training material on SolarCombi+, support of SK, evaluation of the pilot training courses	Task 1, Task 3	280
8	ROTARTICA	Preparation of training material, 3 2-day training courses	Task 1, Task 2	168
9	CW	Preparation of training material, 3 2-day training courses	Task 1, Task 2	168
10	SorTech	Preparation of training material, 3 2-day training courses	Task 1, Task 2	168
11	SOLution	Preparation of training material, 3 2-day training courses	Task 1, Task 2	100
12	SK	Preparation of training material, 3 2-day training courses	Task 1, Task 2	100

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SOLAIR COURSE EXAMPLE...

Duration : 1 day theoretical course + ½ day technical tour (optional)

➤ 1st day : Theory

Schedule :

Start : 9 am

End : 6 pm

A) Introduction

B) Basics

C) Predesign

D) Design

E) Economics & environnement

F) Realised systems and best practice examples

➤ 2nd day : Visit

If a solar cooling system is close to the training course site, a visit can be interesting. It can be coupled with a visit of a large solar domestic hot water system to show the large solar collector fields.

No systematic visits in the courses → Flexibility

Duration variable in the countries : ½ day in Germany, 2 in France

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Synergies

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Day1 : Theory

Morning :

A/ Introduction (15 min)

B/ Basics (1h30)

C/ Predesign (0h30)

D/ Economics (0h30)

E/ Realised systems (0h30)

Afternoon :

A/ Concept (30 min)

B/ Technical descriptions (2h)

C/ Realised applications (1h)

D/ Debriething (45 min)

Day 2 : Practice day

SOLAIR

Morning :

A/ Introduction (15 min)

B/ Basics (1h45)

C/ Predesign (1h15)

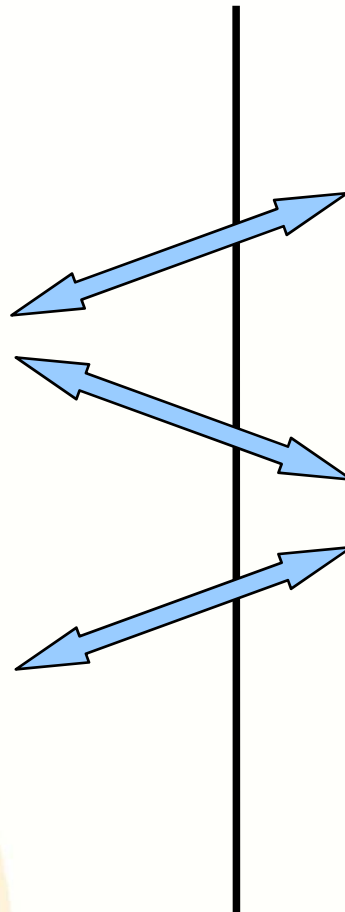
Afternoon :

A/ Design (1h30)

B/ Economics & environment (1h)

C/ Realised syst. & best practice (1h30)

D/ Debriething (15 min)



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Inputs from manufacturers : 1st part

	ROTARTICA FAGOR (update : 02/09, index)	SOLUTION (update : 02/09)	SORTECH (update : 03/09)	CLIMATEWELL (update : 02/09)
Basics	√		√	√
Predesign / Results from SC+ WP4	?	?	?	?
Economics.	√	√	√	√
Environment	√	√	√	√

D5.1-D5.5 Training material related to the single package solution : **5 information sets, N° of copies will be demand oriented** ; Languages of producer and his envisaged markets ; **authors** : Industry partners ; **audience** : CO, participants in training

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Inputs from manufacturers : 2nd part **No problems...**

	ROTARTICA FAGOR (update : 02/09, index)	SOLUTION (update : 02/09)	SORTECH (update : 03/09)	CLIMATEWELL (update : 02/09)
Concept	✓	✓	✓	✓
Technical descriptions	✓	✓	✓	✓
Realised systems	✓	✓	✓	✓
Misc.	✓	✓	✓	✓

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Material put at disposal of Industry partners (last update :01/10/09) :

- an example of template for the agenda. Normally, we wrote on the Annex that it was a 2 day course but it should be flexible... A draft for the 2 day course has been sent around..
- a template for the slides including a short introduction to the SC+ project.
- a registration template to put in copy of the invitation letter for the course so as to have a uniform feedback of the registration process.
- an evaluation questionnaire which is compulsory to make fill in to have a feedback
- an evaluation questionnaire file to help to make a report

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Training course participant and recipient list :

Question risen by SORTECH on the sensible aspect of these lists

Lists need to be made and will be transferred to the EU but with the mention "CONFIDENTIAL" so that it is not remaining into the public side of the reports.

It will be up to each industry partner to decide whether these lists can be public or not and The EU (Maria Laguna) should'nt have problem to accept this restriction.

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Training course organisation financing :

600 euros are allocated to each industry partner to organise the events (room, refreshments)

This means an average of 200 euros/course if 3 courses are organised.

But only 50% is in reality paid by EU (it is in the rubric Other specific costs when to justify)

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Training courses from manufacturers...

	SK	ROTARTICA FAGOR	SOLUTION	SORTECH	CLIMATEWELL
1st course	X	05/02/2009	To be defined	28/09/2009	21/10/2008 ?
2nd course	X	16/10/2009	To be defined	To be defined	16/12/2008 ?
3rd course	X	09/11/2009	To be defined	To be defined	17/03/2009 ?



OK



OK ? 

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Training program

Climatewell

1. Climatewell presentation
2. Solar energy systems
3. Solar cooling technology
4. Thermal certification for buildings
5. Solar cooling systems
6. Design of solar cooling systems (with visit and 2 examples)

Fagor

1. Introduction to solarcombi+
2. Solar cooling basics & market
3. Technology state of art
4. Introduction to Rotartica absorption chiller
5. Components, basic concepts, how it works, and innovations
6. Installation, O&M
7. Solarcombi+ installation design
8. Solarcombi+ basic configurations
9. Solarcombi+ Simulation results
10. Real projects
11. Solarcombi+ kit solution
12. Best practice installations
13. Working periods of real installations
14. Other applications: biomass...

Sortech

(in Greek...)

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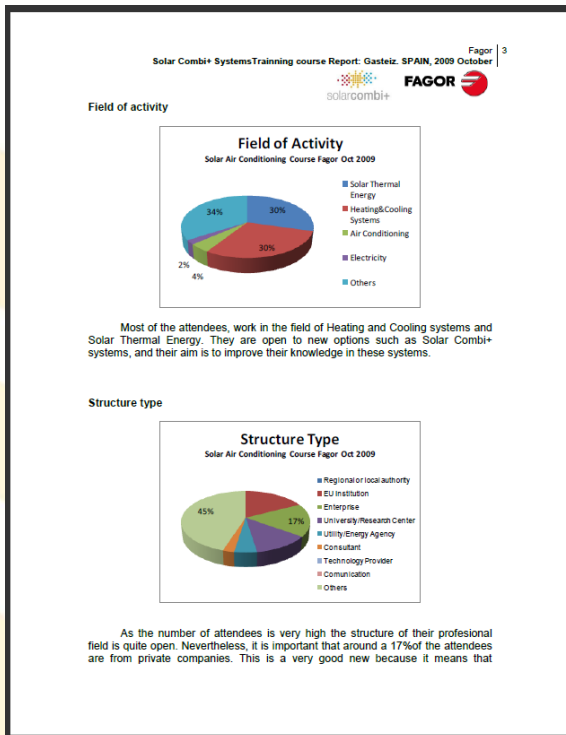
Attendees profile

Total number of attendees:

11 + 40 + 15 (Fagor) + 17 (Sortech) + 14 + 12 + 12 (Climatewell) = 121

Training reports

Target : 150 ?



Reports:

- Fagor: 3 done
- Sortech: 1 done (by Tecsol)
- Climatewell: 1/2 done

Example: part of a training report (FAGOR - 16/10/2009)

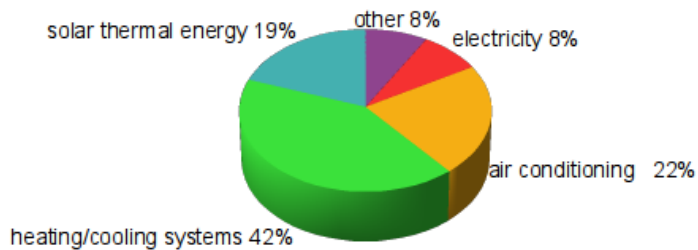
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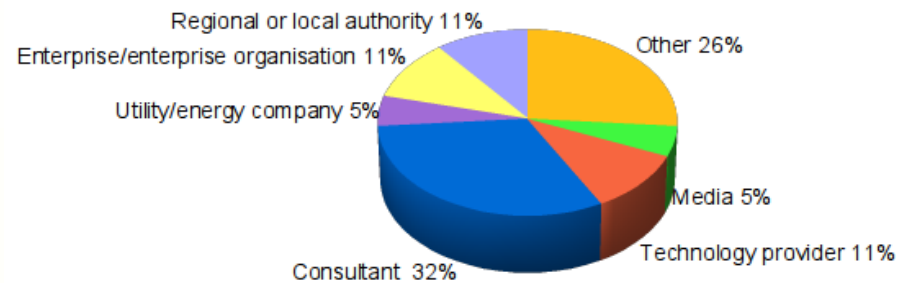
Attendees profile: Example of the Sortech training course (28 sept 2009)

Number of participants: 17

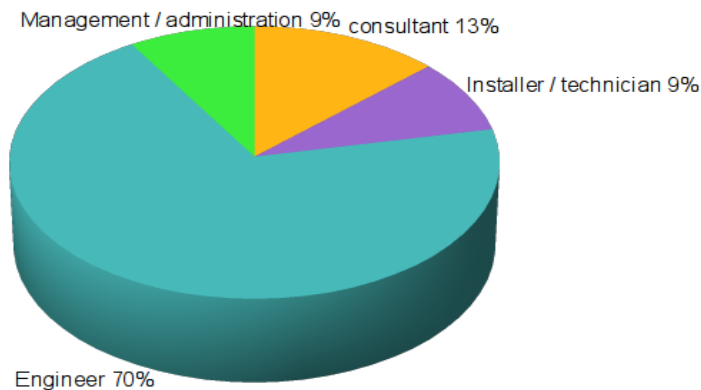
Field of activity



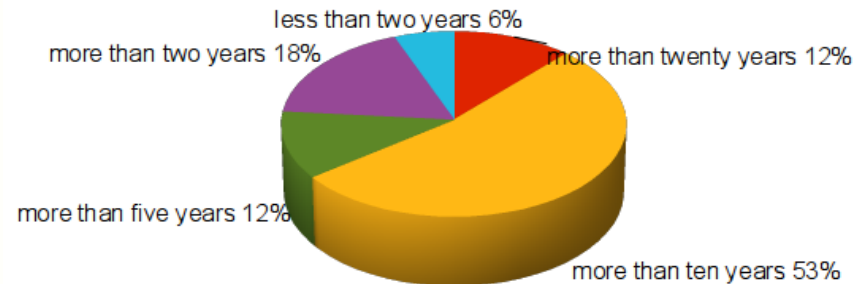
Structure type



Job



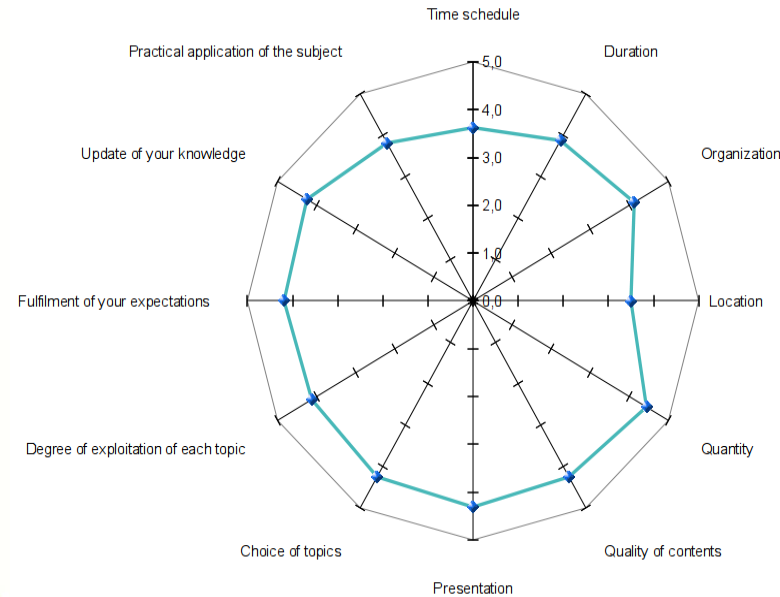
Experience in the field



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Evaluation of the training course: Example of the Sortech training course (28 sept 2009)



Feedback from attendees

- Very good feedback for the training courses (in average: mark higher than 4 over 5)
- People very interested in online tools → good potential of development

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Work to be done :

Last training courses organisation

Training courses reporting (by the industry partners helped by institutional ones)

Announcement

Content

Feedback

Cross country analysis training courses reporting (by TECSOL)