



## Solar Combi+ -2<sup>nd</sup> project meeting

Bilbao/Vitoria 21-22 February 2008

### Minutes

21 February 2008 - Solar Combi+ - morning session

#### Participants:

- Solar Combi+'s Partners (CRES, ISE, AEE, UNI BG, TECSOL, IKERLAN, CLIMATEWELL, SONNENKLIMA, ROTARTICA, SORTECH, SOLUTION, EURAC)
- SOLAIR's Partners
- SOLCO's Partners

Location: EVE (Ente Vasco de la Energía) - Edificio Plaza Bizkaia, Bilbao

Chairs: Erica Villa (target), Alexandra Troi (EURAC)

#### Common meeting Solar Combi+ / SOLCO / SOLAIR

*("1a\_JointMetting\_SolarCombiPlus.ppt"; "2a\_JointMetting\_CRES.ppt";  
"3a\_JointMeeting\_Training courses\_TECSOL-EN.ppt"; link see "Notes" below)*

The aim of this common meeting was to let the participants know about the on-going activities and the objectives of the projects Solar Combi+, SOLCO, SOLAIR, and to enhance collaboration among the project's partners.

The meeting began with Mrs. Erica Villa and Mrs. Alexandra Troi welcoming the participants and representatives of the three projects and presenting the meeting's agenda - which should enable information exchange and definition of possible synergies in accordance with the grant agreement of each project. A personal introduction of each participant followed.

After that, the meeting developed as follows:



- *Brief summary of each project:*  
The responsible of each project presented the main project's objectives and target groups, followed by a short discussion on the differences in used methodology and achieved results within the single project, particularly on the used methodology in market analysis.
- *Market analyses:*  
Since all three projects include a WP on market analysis, the results were presented here. Thus it will be possible for the projects to include the outcomes of the different chosen approaches and detail levels from other projects in their own work. For Solar Combi+ Mrs. Effie Korma from CRES, responsible for this work package, presented a summary of the preliminary results (since the WP was not yet closed).
- *Training measures:*  
Mr. Daniel Munier, as responsible for training both in SOLAIR and Solar Combi+, presented the "1 to 2 day" training concepts in both projects, targeted to installers in Solar Combi+ and to a more general audience in SOLAIR. Mr. Stefano Rugginenti presented the four SOLCO training concepts targeted to designers (3-5 days), installers (2-3 days), public authorities (3-5 days), private users (1-2 days).
- *Dissemination activities:*  
SOLAIR's proposal to prepare an event calendar, which can be complemented by the other projects was appreciated.  
Solar Combi+ and also SOLCO expressed their interest in contributing to the dissemination event SOLAIR plans to initiate during the Sustainable Energy Week 2009. This is in line with the Solar Combi+ grant agreement, where the contribution to "existing" events is foreseen.

*The detailed minutes of this first common session including participants list and presentations have been supplied by SOLAIR project and supplied as Annex to these minutes.*



21 February 2008 - Solar Combi+ - afternoon session

Participants:

- EURAC: Alexandra Troi, Patrizia Norina Melograno
- CRES: Effie Korma
- ISE: Edo Wiemken
- AEE Intec: Alex Thür, Charlotta Winkler
- UNIVERSITÀ DI BERGAMO: Giuseppe Franchini, Giovanni Nurzia
- TECSOL: Daniel Munier
- IKERLAN : Ruth Fernandez, Bakartxo Egilegor
- ROTARTICA : Ricardo Villanueva
- CLIMATEWELL: Martin Holmström
- SORTECH : Katrin Spanka
- SOLUTION : Franciska Klein
- SONNENKLIMA : Volker Clauss

Location: Camara de Comercio, Bilbao

Chair: Alexandra Troi (EURAC)

**Salutation by Alexandra Troi, Project Director**

*("1\_BilbaoMeeting\_Agenda.ppt"; link see "Notes" below)*

Mrs. Alexandra Troy opened the afternoon session presenting the agenda and organisation of the meeting.

**Feedback from contractors meeting in Brussels - A. Troi (EURAC)**

Short feedback regarding other projects and administrative aspects, which were presented at the contractors meeting in Brussel on 8<sup>th</sup>-9<sup>th</sup> of November 2007. In particular the obligation to keep time-sheets (one time sheet for all IEE projects!) and to keep all evidence for incurred costs (e.g. also boarding cards for flights - even if not requested by the partners administration/controlling) was recalled.



## Presentation of the LOGO and Website - A. Troi (EURAC)

*("2\_BilbaoMeeting\_Logo.ppt"; "3\_BilbaoMeeting\_Website.ppt"; link see "Notes" below)*

Mrs. Alexandra Troi presented the LOGO for Solar Combi+ Project.

She explained that it was chosen, in accordance with the other project partners, among 10 proposals drafted by 4 different designers.

Her proposal to use a common slide master for the MS PowerPoint presentations and a common template for reports and communications in MS Word, in order to have the same layout and appearance was accepted by the partners. The templates a slide masters will be available in webdav space.

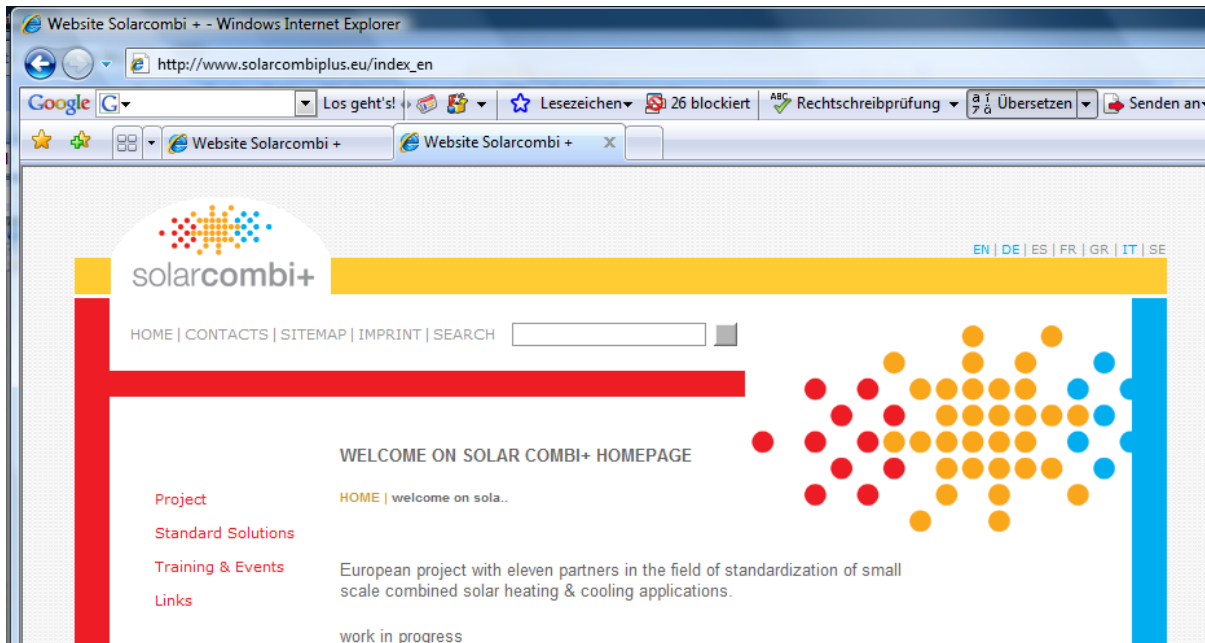
Following, she presented:

- *Webdav space*
- *Web site*

Webdav is a kind of "online hard disk". Under the address "<https://webdav.eurac.edu/solarcombiplus>" EURAC provides such a common space to save and exchange files to all partners of the project. Once added to the "network places" this directory can be handled like any other directory. A guideline for the set-up will be provided in Italian and German, but the procedure is nearly self-explaining.

Both for the access to webdav and to the restricted part of the website username and password are needed and are provided to partners after signing EURAC's "rules for access to the network".

Regarding the web site instead ([www.solarcombiplus.eu](http://www.solarcombiplus.eu)), she explained the structure of the home page, the layout of the pages (menu with two levels and three boxes to fill with information or news), and how the website works. Special attention has been paid to the design of multilingual functions: It will be possible to switch between languages by clicking on the respective sign in the upper left corner of the website. Whether a page is available in the respective language can be understood from the colour code. To (i) allow for information to be presented on a two level concept - i.e. more detailed in English and with targeted information in national languages - and (ii) avoid that navigators in national languages are not aware of the wider information available in English, a special menu bar has been developed, where hints to additional sites in English are given.



A short discussion on the choice of the language followed. All partners agreed not to provide the complete website in all national languages, but to adapt the website language system to the languages of the single deliverables listed in the Grant Agreement - which already reflect the relevance of the documents/information to national stakeholders and specialised (English speaking) audience respectively. Mr. Martin Holmström from ClimateWell pointed out that even his company being Swedish, Sweden is not a target country for them and he therefore proposed to renounce to the Swedish website translation. This proposal seemed reasonable. Mrs. Alexandra Troi however asked, whether any other language could be included instead. Mrs. Franziska Klein from SOLution will check out, whether SOLution could provide for a Portuguese translation.

Regarding the documents on website, in accordance with all project partners, it was decided the responsible for each of the following tasks:

- English text proposal: AEE Intec, EURAC
- Revision by partners: all project partners
- Translation of text:
  - For Italian translation:* UniBG
  - For Greek translation:* CRES
  - For Spanish translation:* Ikerlan; Rotartica
  - For German translation:* AEE Intec



*For Portuguese translation:* SOLution will check out whether this is possible

- Insert in website: EURAC, AEE Intec

### **Presentation of Folder and Poster - C. Winkler (AEE INTEC)**

*("4\_BilbaoMeeting\_WP6.ppt"; link see "Notes" below)*

Mrs. Charlotte Winkler presented the ongoing activities in WP6. She showed the proposal for a poster and folder (deliverables D6.5-1) to be present and distribute in several events like fairs, workshops and conferences (e.g. IEA Task 38, EUROSUN, etc...).

She already sent those to project partners in order to have their feedback and some photos of the Industrial partner machines. CW and Rotartica have already sent her their inputs, contributions from other industry partners are prompted.

Regarding the machines' photos (D. Munier's suggestion not to put specific figures of machine, was declined by the other project partners), industrial project partners suggested to insert also the name of the manufactures without specifying the country and, in accordance with the others partners, to create a data base available to all partners.

### **Presentation of Results from Market Analysis WP2 - E. Korma (CRES)**

*("5\_BilbaoMeeting\_WP2.ppt"; link see "Notes" below)*

Mrs. Effie Korma showed, in detail, the results of market analysis carried out on the basis of received filled manufacturers' and consumers' questionnaires.

She didn't receive information from German, Austrian (just one filled questionnaire) and Swedish partners because they met many difficulties contacting retailers. So, it was suggested to change strategy, i.e. possible approaches to contact retailers (partners exchanged their experience) and to look for data on sold air-conditioning components through national association.

Effie Korma asked them to deliver the filled questionnaire by 29th of February, for those, who had not already done so.



## Steering Group - A. Troi, P. Melograno (EURAC)

*("5\_BilbaoMeeting\_SteeringGroup.ppt"; "6\_BilbaoMeeting\_BimonthlyReport.ppt"  
link see "Notes" below)*

### Bimonthly Report

Mrs. Patrizia Melograno made a short presentation about the bimonthly report, underlining the necessity and the utility to fill it and to follow its structure, because it makes easier the writing of progress report (first deadline in June) and collecting needed data in the same way.

After the presentation, A. Troi asked each partner for personal feedback about the bimonthly report.

Mr Wiemken suggested to extend the report period, but the majority of the partners agreed that the report was structured easy enough to be filled every two months.

Furthermore, the importance to insert "worked hours" by each partner in bimonthly report was underlined. These data was however to be considered indicative and should be confirmed by the partners before the compilation of the progress report.

The project partners required that EURAC, as project coordinator, reminded them about the delivering of bimonthly report.

### Memorandum Understanding

The Memorandum of Understanding negotiated during the Kick-Off-Meeting and finalised by email communication as follow up was delivered as signed version to Alexandra Troi by the majority of partners. As regards the two missing copies (CRES and SonnenKlima) confirmed that there was no disagreement and that the signed MoU would be sent to EURAC.

### Next Project Meeting

Several possible dates and locations were discussed, but no final decision about the next meeting was taken. It will decide later and agreed on via email.

The possibility to combine different congress or meeting of other projects (i.e. SOLCO, SOLAIR, EUROSUN ...) will be taken under consideration.



## 22 February 2008 - Solar Combi+ - morning session

### Participants:

- EURAC: Alexandra Troi, Patrizia Norina Melograno
- CRES: Effie Korma
- ISE: Edo Wiemken
- AEE Intec: Alex Thür, Charlotta Winkler
- UNIVERSITÀ DI BERGAMO: Giuseppe Franchini, Giovanni Nurzia
- TECSOL: Daniel Munier
- IKERLAN : Ruth Fernandez, Bakartxo Egilegor, Maider Usabiaga
- ROTARTICA : Ricardo Villanueva
- CLIMATEWELL: Martin Holmström
- SORTECH : Katrin Spanka
- SOLUTION : Franciska Klein
- SONNENKLIMA : Volker Clauss

Location: Parque Tecnológico de Álava, Vitoria

Chair: Alexandra Troi (EURAC)

### General Presentation of Ikerlan and Visit to its Laboratories

The second meeting day was held at Ikerlan.

Mr. Cleris Marville, the responsible for European Projects, made a presentation of Ikerlan, explaining its constitution, its research fields, its on-going activities and objectives.

After that, a visit to its Laboratories followed.

### Presentation of the Agenda for second day- A. Troi (EURAC)

A. Troi presented the Agenda for the second day and organized the meeting.

### Presentations of Industrial Partners' Chillers

All Industrial partners made a brief presentation on their chillers, focusing on simulation, monitoring and system dimensioning experiences.





SonnenKlima- V. Clauss

Mr. Volker Clauss presented SonnenKlima machine, Suninverse 10 kW. He explained that they, within Task25, already developed a Type for this machine in cooperation with ZAE-Bayern and TU-Berlin Institutes.

Such Type allowed to simulate different working condition, in accordance to boundary condition, but it didn't work very well at too high re-cooling temperature.

Furthermore, Mr Clauss specified that they have two design levels: a first one, in which the plant is designed by ratios; a second one, in which the design is more precise and is based on simulation ( TRNSYS type 177 for TRNSYS 16)

From plant point of view, they don't foresee the use of a storage on cold side since the chiller shows gut part load behaviour, but they have an external heat exchanger and they take into consideration the possibility to feed the machine directly by solar collector.

SorTech AG- K. Spanka

Mrs. Katrin Spanka presented the new model of SorTech chiller. In 2007, SorTech Manufacturer developed an adsorption machine with a cooling capacity of 7.5kW using a dry air cooler with water spraying as heat rejection system.

She pointed out the importance of the evaluation of an electric COP also for thermally driven chillers, and was supported in this regard by Mr. D. Munier.

After that, she showed an installation in Barcelona.

Rotartica- R. Villanueva

*("10\_BilbaoMetting\_Presentación Rotartica.ppt"; link see "Notes" below)*

Mr. Ricardo Villanueva made a presentation of Rotartica chillers explaining in detail the basic technology, which allows to reduce the machines' size, to avoid the use of wet cooling tower and the increase the system efficiency.

He specified also that Rotartica, in 2005-2007 periods, projected about 70 installations and presented some of them.

In some of these installations, the possibility to connect the boiler in parallel to the solar collector plant was taken into consideration.

ClimateWell- M. Holmström

*("11\_BilbaoMetting\_ClimateWell presentation.ppt"; link see "Notes" below)*



Mr. Martin Holmström made a presentation of CW10. He explained the main ClimateWell Market is in Spain (95%), with about over 150 units sold and over 30 units installed and running.

Furthermore, he explained that:

- Regarding the simulation tools, ClimateWell, with the collaboration of SERC, developed TRNSYS Type 215 (CW10 Barrel), TRNSYS Type 216 (CW10 Control) for its machine. They included also the storages.
- They developed also some simulation tools which used predefined setting and were easy to use.
- Regarding planning a dimensioning of the system, CW10 doesn't need a cold buffer because the storage energy is included in it.
- CW10 doesn't need electricity in the process, only for the valve and the control.
- Their strategy is to charge a barrel in the evening and then to use the stored energy in following morning (in the same time the other barrel starts to recharge). This allows to have continuous delivery of heat.

### WP3 Virtual Case Studies- E. Wiemken (ISE)

*("12\_BilbaoMetting\_WP3\_ISE- presentation.ppt"; link see "Notes" below)*

Mr. Edo Wiemken made a presentation on general approach to use in WP3. He already prepared a word document with his suggestion, which had been distributed to project partners by email before the meeting.

Mr. Edo Wiemken suggested to choose three kinds of applications: office and two kind of residential building and he defined also the Chilling Temperature and the distribution system for each application. Also in correspondence with the results of the market analysis, hotels will not be taken into consideration.

The choice of climatic zones to be considered could be based on the Ecoheatcool approach, which calculates both an index for heating and cooling demand. Index 100 corresponds to European average. He suggested 3 climatic zones: Strasbourg 100/100; south of France/north of Italy (90/120) and South of Spain/ South of Italy (70/140)

The areas in Northern Europe aren't taken into consideration because they haven't an high cooling demand and so we have below economic returns.

He suggested to scale the load depending on the PE-saving but this means to add more variables because it's necessary to choose the size of the collectors etc...

Mr. Giovanni Nurzia suggested to scale the covered load by the machine depending on the peak load.



Mr. M. Holmström suggested the use of a configuration that take into consideration the machine also in heat pump mode.

## 22 February 2008 - Solar Combi+ - afternoon session

### Participants:

- EURAC: Alexandra Troi, Patrizia Norina Melograno
- CRES: Effie Korma
- ISE: Edo Wiemken
- AEE Intec: Alex Thür (Charlotta Winkler had to leave earlier)
- UNIVERSITÀ DI BERGAMO: Giuseppe Franchini, Giovanni Nurzia
- TECSOL: Daniel Munier
- IKERLAN : Ruth Fernandez, Bakartxo Egilegor, Maider Usabiaga
- ROTARTICA : Ricardo Villanueva
- CLIMATEWELL: (Martin Holmström had to leave earlier)
- SORTECH : Katrin Spanka
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Location: Parque Tecnológico de Álava, Vitoria

Chair: Alexandra Troi (EURAC)

### WP5 Training courses -D. Munier (TECSOL)

*("3a\_JointMeeting\_Training courses\_TECSOL-EN.ppt"; link see "Notes" below)*

Mr. Daniel Munier takes up some points about training courses (within WP5) left undecided during the common meeting with partners of SOLAIR and SOLCO projects. After a short discussion, it was decided that Mr. D. Munier will send Alexandra Troi and the Industrial partners, by 30.02.2008, a document about training course containing a more detailed list of keywords for the afternoon (theory) session training courses.

A first feedback should be sent to him in with the next month.

### WP3 Virtual Case Studies: Next Steps- E. Wiemken (ISE)

During the afternoon session, the already started discussion (in morning session) on virtual case studies continued.



The several configurations proposed by Mr. Wiemken (ISE), responsible for WP3, were taken under evaluation and several suggestions were made by project partners. In particular the Spanish requirement not to enter in the solar tank with a back-up heater and possible solutions were discussed.

Considering the complexity of system configuration and the probability that it will be necessary to simulate more than one configuration - just for the mere cold production use of the chiller - the project consortium decided not to go for simulations of the chillers in heat pump mode.

Finally, the project partners supporting ISE in the different WP3 tasks were decided:

- Applications:  
EURAC and AEE Intec will support ISE in choosing and in modelling building applications. By the end of March, they should send ISE their suggestions about models and building definitions.
- Selection of the climatic conditions:  
EURAC will support ISE in the selection of Climatic condition in accordance with ECOHEATCOOL approach or similar.
- Selection of configuration:  
TECSOL and Industrial partners will support ISE in defining system configurations
- Chillers' models:  
Industrial Partners will support ISE in definition of chillers' models
- TRNSYS decks with system configurations and their Set-up:  
UNI BERGAMO will support ISE in building of TRNSYS decks and their setup (i.e. choice of solar collector Types, etc...).

### Final words by Alexandra Troi

Mrs. Troi thanked participants for coming to the fruitful meeting. Furthermore, she emphasized the importance to support ISE in WP3 activities and to send Mr. E. Wiemken the feedback as soon as possible. EURAC will further arrange webdav space as soon as possible.

### Notes



- The presentation can be downloaded at protected webdav space (online).
- Next meeting hasn't decided yet. Two discussed options were either just before "Gleisdorf Solar 2008" congress in September in Gleisdorf, Austria or in Athens, Greece, in November.

#### Annexes

- I: List of participants
- II: Agenda
- III: Minutes of the common session provided by SOLAIR