



solarcombi+

WP4 – Determination of standard system applications and most promising markets detailed work programme

Solar Combi+ Project meeting

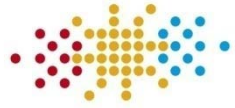
Bergamo 03.-04.03.2009

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Identification of most promising markets and promotion of standardised system configurations for the market entry of small scale combined solar heating & cooling applications
EIE/07/158/SI2.466793 09/2007 – 02/2010

Intelligent Energy  Europe

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Objective

- Evaluation of the results of the virtual case studies and the ecological and economic assessments and
- Determination of most promising applications and areas



Task 1 – Standard system configurations

Project proposal states as

→ Objective

Standard system configurations, independent of specific product, to be communicated and promoted towards a **wide audience**

→ Task

Definition of a reduced number of "standard system configurations" which can be promoted and applied **similarly to the standard systems for DHW** with **reasonably good results in typical/average cases** (mostly technology independent)

→ Outcome

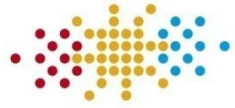
Standard system configurations (3 to 5), which are independent of specific product and work best under different circumstances



Task 2 – Package solution

Development of "Package solution" by each chiller partner (for each device) and/or preparation of technology specific design-concepts based on the virtual case studies and standard system configurations

5 teams: Rotartica & IKERLAN
Climatewell & EURAC
SorTech & ISE
SOLution & AEE INTEC
Sonnenklima & TECSOL



Task 3 – Most promising applications

The analysis of the virtual case studies will at the same time reveal the **most promising markets** for early market access

These are in particular **climatic regions** and **applications**, where Solar Combi+ systems have particular high economical efficiency, due to

- High workload of each component, leading to low specific costs
- Favourable economic circumstances (high fuel/electricity cost, subsidy schemes, etc.)



Task 3 – Most promising applications

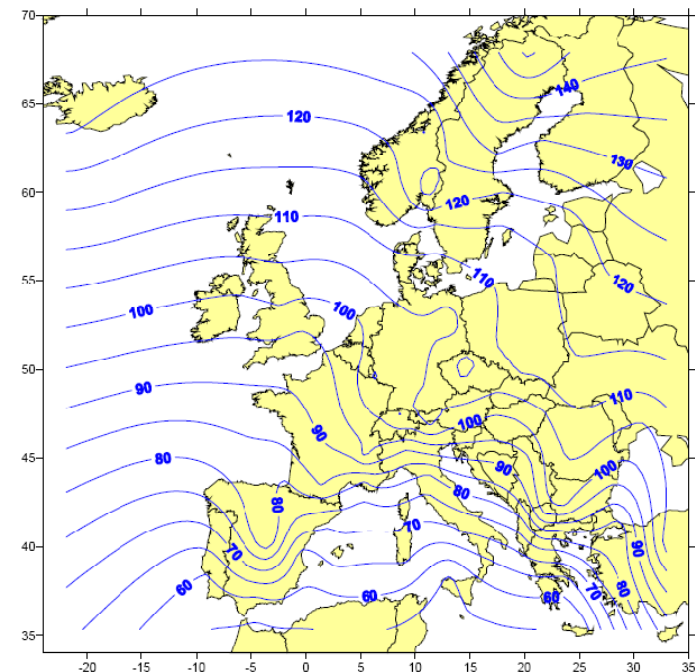
GIS – Geographical Information System

→ Analysis and correlation of information with different geographical distribution

- climatic information
- economic information on country or regional level

Other information to be included could be

- solar thermal market figures
- chiller market figures
- ...



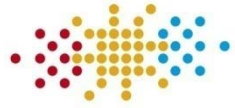


Task 4 – Online tool

Tasks 1 and 2 determine standard system configurations and “Package solutions”. Nevertheless, planners and architects might need **information about the performance of other configurations for specific cases.**

For this purpose, an online tool will make the results of virtual case studies online available and allow to:

- query all virtual case studies (or only those which make sense from PE point of view?)
- change energy related inputs (conversion factors)
- change economic parameters (financial incentives, fuel cost)



Task 4 – Online tool “case summary”

• Input values

Simulation parameters:

- Climate
- Application
- Specific chiller (?)
C1/E1, chilling power, ...

Dimensioning:

- A
- V

Changed by user

Environment related parameters:

- η_{Boiler}
- PE conv. factor
- CO₂ conv. factor

Cost related parameters:

- Installation costs (incentives, ...)
- Planning costs
- Maintenance costs
- Operation Costs (Fuel, electricity)
- i, n

• Output values

Energy related outputs

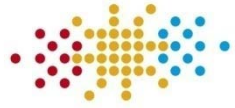
- q_{coll} , η_{coll}
- Solar fractions
- COPs (thermal, electrical)
- (solar) cooling time
- ...

Environment related outputs

- Saved PE
- COP_{PE}
- PE ratio
- Saved CO₂
- ...

Cost related outputs

- Cost for subsystems
- Operating costs
- Annual costs
- Costs for saved PE



Task 5 – Key data, libraries & short info

Main objective: tools helping in the implementation of the EPBD:

a) Regarding § 3:

Provide key data and “libraries” to **calculation tools** (§ 3 of EPBD). Contact to the IEE projects EPA ED and EPA NR has been established: the results from “Solar Combi+” could be implemented into their method, specifically in the software tool for calculating of energy performance of the building(s) and quantification of the **effect of energy saving measures**.

→key data and “libraries” for calculation codes (EPBD)

b) Regarding § 5:

Provide easy to use information to evaluate the technical, environmental and economical feasibility of solar heating and cooling systems (obligatory for new buildings with useful floor area of 1000 m² - which are at the upper limit of the considered small scale applications). EURAC is responsible for the contact with IEE project SENTRO and integration in their toolbox

→integration in the IEE project SENTRO’s EPBD feasibility study toolbox

Responsibility: EURAC



Role & contribution of each partner

	Task 1	Task 2	Task 3	Task 4	Task 5	Σ hours
EURAC	contribution	with CW	X	X	X	860
CRES	contribution			X		110
ISE	contribution	with SorTech		X		220
AEE INTEC	contribution	with SOLution				200
UNIBG	coordination					200
TECSOL	product independent solutions	with EURAC				220
IKERLAN	contribution	with ROTARTICA				150
ROTARTICA		with IKERLAN				160
CW		with EURAC				160
SorTech		with ISE				160
SOLution		with AEE INTEC				50
SK		with TECSOL				50
estimated Σ hrs.	470	1200	320	470	80	2540



Deliverables

- 4.1 **Report** on the identification of **standard system configurations** (month 16 – 12/2008)
- 4.2 **Description of package solution(s)** – Rotartica (month 20 – 4/2009)
- 4.3 Description of package solution(s) – CW (month 20 – 4/2009)
- 4.4 Description of package solution(s) – SorTech (month 20 – 4/2009)
- 4.5 Description of package solution(s) – SOLution (month 20 – 4/2009)
- 4.6 Description of package solution(s) – SK (month 20 – 4/2009)
- 4.7 **Description and visual representation** (e.g. maps) of **most promising regions** for different applications (Poster and PDF in partner languages) (month – 4/2009)
- 4-8 **Online tool** to make the results of virtual case studies online available: e.g. query based on an easy to handle form (where e.g. climate, kind of application etc. can be chosen, economic conditions can be changed) (month 20 – 4/2009)
- 4.9 **Key data and “libraries”** for calculation codes (**EPBD**) (month 20 – 4/2009)
- 4.10 **Short info for feasibility studies** (§ 5 EPBD, IEE project SENTRO) (month 20 – 4/2009)