

GROUND-MED PROJECT: “ADVANCED GROUND SOURCE HEAT PUMP SYSTEMS FOR HEATING AND COOLING IN MEDITERRANEAN CLIMATE”

MEETING “OCHSNER HEAT PUMPS & GROUND-MED”

Venue: Ochsner Heat Pumps factory, Ochsner-Straße 1, A 3350 Stadt Haag, Austria

Date: 10 February 2009

LIST OF PARTICIPANTS

01-CRES	D. Mendrinos		
07-UOR	M. Rosca	C. Bendea	
09-GEJZIR	P. Kralj		
10-GEOTEAM	J. Goldbrunner		
17-UNIPD	Davide Del Col		
18-EDRASIS	V. Ramoutsakis		
20-OCHSNER	Karl Ochsner	Gerald Lutz	Thomas Ciepiela

PROGRAM

10 February 2009	
14:00 – 17:30	Introduction to Ground-Med project The tasks of Ochsner Heat Pumps Low/medium capacity advanced heat pump prototypes development (WP3) Heating/cooling needs of demo buildings Defining the main parameters of heat pump prototypes
17:30 – 18:00	Visit to Ochsner heat pump production facilities
19:00	Dinner, Mitter Stadt Restaurant

MINUTES

The above program was followed. The coordinator presented the Ground-Med project, focusing on the main tasks of OCHSNER HEAT PUMPS.

1. OCHSNER HEAT PUMPS should develop three advanced water source heat pump prototypes of 20-80 kW capacity of premium efficiency according to the requirements of WP3.
2. OCHSNER HEAT PUMPS will deliver the prototypes together with a report describing the prototypes and their operating parameters, also including standard operation and maintenance specifications and procedures (Deliverable 3.2, October 2010).
3. OCHSNER HEAT PUMPS will transport these prototypes to the demo buildings.
4. OCHSNER HEAT PUMPS will send a technician to support the installation and the commissioning of the prototypes.
5. OCHSNER HEAT PUMPS will provide maintenance services to the prototypes until the end of the project.
6. OCHSNER HEAT PUMPS will compile a brief evaluation report of the prototypes based on the on-site monitoring.
7. OCHSNER HEAT PUMPS will transfer ownership of the prototypes to the demonstration building owner after the end of the project (31.12.2009).

Prof. Davide del Col presented WP3.

Dr. Peter Kralj presented the demo building of Slovenia; heating needs amount at 20-30 kW; free cooling will also be provided.

Prof. Marcel Rosca presented the demo building of the University of Oradea; a new building under construction will be selected; the heating/cooling system will be pipes of small diameter placed on walls – outer and inner walls are necessary; heating needs amount at 80 kW; cooling needs are higher.

Vassilis Ramoutsakis presented the demo system of EDRASIS head offices; a modification to existing system will be performed for the project, which may include a part of the building, or one or more air handling units; estimated capacity of less than 40 kW is needed. The system will include sizing the heat pump for peak load with 45-50°C supply water and controlling the temperature of the supply water to lower levels (35-40°C) in cases of reduced load, which will correspond to 80% of the time; the exact operating parameters will be defined during the course of the project.

The heat pump prototype parameters were decided with Mr Thomas Ciepiela. OCHSNER HEAT PUMPS will improve existing Golf Maxi series in terms of energy efficiency (SPF), and in particular Models DMWW28 (for Slovenia), OWWP56 (for EDRASIS), and OWWP96 (for Oradea). The requirements for technology improvement are that:

- The machine should comply with the Eurovent class A efficiency requirements
- The system SPF (including electricity at the circulating pumps) should exceed 5,5 in both heating and cooling modes (heating with 40°C water with 7°C water supply at the evaporator, and cooling with 7°C water).
- Water supply temperature range at the evaporator: minimum 5°C, operating maximum 15°C, absolute maximum 20-22°C for limited time (~30 min) during system start-up.

- Temperature difference at the evaporator: 3°C.
- Refrigerant used: R407C.
- The heat pump prototypes should operate in both heating and cooling mode.
- The refrigerant cycle will be optimized in terms of heat exchangers, compressor, expansion valve, etc. for both heating and cooling.
- COP should be maximized at partial load as well.
- The units will be reengineered for cooling.

Other issues:

Partners responsible for demo site development to be invited to attend the meetings of WP3 and WP4 in Valencia, as well as other future meetings, and will be informed of all activities and results of WP3 and WP4.

Ochsner to send bank account details to CRES for the pre-financing.