

## HEAT4U Project: 1<sup>st</sup> year, first results

*One of the most promising technologies for heating, namely the Gas Absorption Heat Pump fired by natural gas and renewable energy, is promoted and funded by the European Commission under the Seventh Framework Programme for Research and Technological Development (FP7).*

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Robur, coordinator of the HEAT4U Project, hosted institutional representatives, managers from top firms and HVAC professionals in a Conference entitled “HEAT4U. 1<sup>st</sup> year, first results”, held on 11<sup>th</sup> and 12<sup>th</sup> October 2012 at Fortezza Viscontea in Cassano d’Adda, near Milan. The conference has hosted an important panel of speakers, from public administrations, research sector and HEAT4U Project Consortium Partners. Aim of the conference was to highlight the latest regulatory scenarios and incentive measures in the field of energy efficiency and thermal renewable energy, including European, Italian and local best practices.

During the conference, results of the first year of operation of the HEAT4U Project have been introduced. It was a challenging year, HEAT4U Project is one of the most important international research projects in the area of climate change and energy efficiency applied to the built environment. 14 among the most important European organizations in the energy, industrial, and research fields are involved in such project, namely Robur - which is also the project coordinator, - Pininfarina, ENEA, Polytechnic University of Milan, D’Appolonia and CF Consulting from Italy; Bosch Thermotechnology, E.ON and the Fraunhofer Institute research centre from Germany; GDF Suez and Gas Reseau Distribution France from France. The Consortium also includes UK-based British Gas, the Polish Flowair, and the Slovenian company ZAG. The challenge for this project is to implement the Gas Absorption Heat Pump technology -currently used for heating light commercial facilities- also in the area of single-family detached residential homes, particularly in existing buildings, which, according to recent studies carried out by the European Union, account for approximately 49% of the overall energy consumption in terms of primary energy, and for 36% of greenhouse-gas emissions. The high energy efficiency, the considerable renewable energy rate and the absence of investment in infrastructure shall make the Gas Absorption Heat Pump technology one of the most competitive solutions in the heating market.

The conference was opened by Mr. Samuele Furfari -Directorate-General for Energy and Transport-, offering indications on the European energy efficiency strategy. Following Mr. Furfari’s speech, the conference progressed with two speeches regarding the Italian legislation on energy efficiency and thermal renewable energy, with valuable first-hand updates from the Ministries.

Mr. Sebastiano Serra - Head of the Technical Secretary of the Italian Ministry for the Environment - focused on the latest incentive measures of the thermal renewable energy in the private sector and in public administration. Mr. Roberto Moneta - Technical Secretary of the Italian Ministry of Economical Development - explained the contribution of the thermal renewable energy in the developing strategy of Italy. Once the first round of speeches was concluded, a round table was opened with representatives of Italian Regions Lombardia, Emilia-Romagna and Piemonte to discuss the theme of best practices of energy strategies.



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The conference then progressed in focusing on the first results achieved by the HEAT4U Project with the speech of Luigi Tischer, the Project Coordinator. A first important result is the analysis on market opportunities and value chain of Gas Absorption Heat Pumps for existing residential buildings and the development of the technology, in particular the optimization of the capacity modulation, reducing power consumption and sound pressure.

Moreover, construction of test laboratories at the Politecnico di Milano and at the Fraunhofer Institute was started according to EN12309 protocol. The first prototypes have fully confirmed the performances expected and the solution of the technological challenges posed by this project, namely bringing the Gas Absorption Heat Pump technology into the typical power range of single-family detached residential homes and reaching an estimated global efficiency on primary energy of 150%.

Mr. Paolo Pininfarina, President of Pininfarina, focused on the development of design and aeroacoustic optimization. The work began with an analysis of aeroacoustic benchmark with equivalent heat pump units. Then, different design solutions have been carried out. Styling, functionality, innovative, user friendly, robust: these are the keywords of the design work.

The development of the HEAT4U Project has already had a positive effect on the professional range of Gas Absorption Heat Pumps currently available on the market: a significant reduction in power consumption and in sound pressure.

Finally, two real cases of installation with Gas Absorption Heat Pumps have been introduced. Aiming at reducing energy bills, the Technical Department of Carrefour Italy has chosen absorption technology in ten of its supermarkets. Just the Carrefour supermarket in Cusago (near Milan), with sixteen Gas Absorption Heat Pumps installed, has cut CO2 emissions by up to 53.6 tons in comparison to conventional boilers, equivalent to those absorbed by 7,314 trees. The case of the new school campus in Agordo, integrating several sources of renewable energy, such as aerothermal, geothermal and solar energy, is a unique facility of its kind in Europe. Today, thanks to geothermal Gas Absorption Heat Pumps installed, the institute has a consumption of only 24 kWh / m<sup>2</sup> per year, while the old building was requiring more than 140 kWh / m<sup>2</sup> per year of primary energy. The refurbishment thus enabled the management to save up to 80% on operating costs compared with the previous building.

The conference has been opened and closed by Benito Guerra, President of Robur. After thanking the speakers, Mr. Guerra said to be confident that the synergy of the conference can enhance the dissemination of this technology.

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