



Contribution ID: 32

Type: **Presentation**

Feasibility study district heating and cooling downtown Trieste by seawater heat pumps

Wednesday 27 August 2014 16:50 (25 minutes)

This study concerns the application of water to water heat pumps at high temperature ($T_m \geq 80^\circ\text{C}$) (hereinafter referred HT HP) to a new concept district heating plant called “Cold District Heating - CDH” where HT HP use, as the

low temperature heat source, water distributed with networks, similar to the classic district heating ones, where, however, instead of using pre-insulated pipes, much less invasive and much cheaper PEAD not insulated pipes are laid.

These networks supply water to a series of HT HP to be installed in various buildings to replace existing centralized boilers.

With SMAT of Turin we are monitoring a pilot site with a first CDH where it will subsequently be possible to connect other buildings until reaching the maximum flow compatible with said source.

The purpose of this study is to demonstrate the technical feasibility of initially exploit all existing urban infrastructures in “Piazza Unità d'Italia –Trieste” capable of providing sea water and then suggest to build new infrastructures to distribute water drawn from remote centralized sources (groundwater, irrigation ditches, rivers, lakes, sea, etc.).

They are therefore systems which allow the use of heat pumps at high temperature in a diffuse manner in urban contexts.

G. PELLEGRINI



Figure 1: G. PELLEGRINI

Author: Dr PELLEGRINI, Gianfranco (Stp Srl, Torino)

Presenter: Dr PELLEGRINI, Gianfranco (Stp Srl, Torino)

Session Classification: D New ideas and Proposals for cooperation in the Peri - Adriatic Areas

Track Classification: D: New ideas and Proposals for cooperation and synergy in the Peri-Adriatic areas