

***Atelier de démarrage sur l'Analyse d'Opportunités pour les
Systèmes Solaires Thermiques dans le Secteur Tertiaire et
Industriel***

**Some preliminary results of Prosol Industrie
Project**

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MINISTERO DELL'AMBIENTE
E DELLA TUTELA DEL TERRITORIO E DEL MARE

The Mediterranean Centre for Renewable Energies

The **Mediterranean Renewable Energy Centre (MEDREC)** is a regional centre for training, information, dissemination, networking and development of pilot projects in the Mediterranean Region in the fields of renewable energies and energy efficiency, established in Tunis in 2004 and founded by **Italian Ministry for Environment Land and Sea (IMELS)**



The **MEDREC** is the **focal point** for **Mediterranean Renewable Energy Program (MEDREP)** activities in North Africa

Prosol Industry – feasibility analysis

Different actions have been carried out in 2010 by local Tunisian consultants, including pre-feasibility studies on heated water needs of Tunisian factories belonging to different manufacturing branches and studies on the potential of solar thermal energy application to industrial processes

In 2011, in collaboration with ANME, UNEP and “Politecnico di Milano” University, detailed technical-economical feasibility studies have been carried out for industrial end users of textile and agro-food branches.

Results showed that solar thermal systems are not economically interesting for end users with current subsidy schemes, but they could lead to significant economic and social benefits for the government.

An incentive mechanism for solar thermal based on the substitution of the subsidies currently given to fossil fuels can therefore be considered.

Prosol Industry: step I

Two studies have been launched in late 2012 to define the operating framework of Prosol Industry:

1 - Assessment of potential of SPH market in Tunisia

- Define the overall methodology to be employed to determine the potential of low and medium temperature solar thermal application in the industrial sector in Tunisia
- Define the potential of low/medium temperature solar thermal application in the industrial sector (up to 90°C / 250°C)
- Analyze the status of technologies and the related time to market for medium temperature solar thermal applications

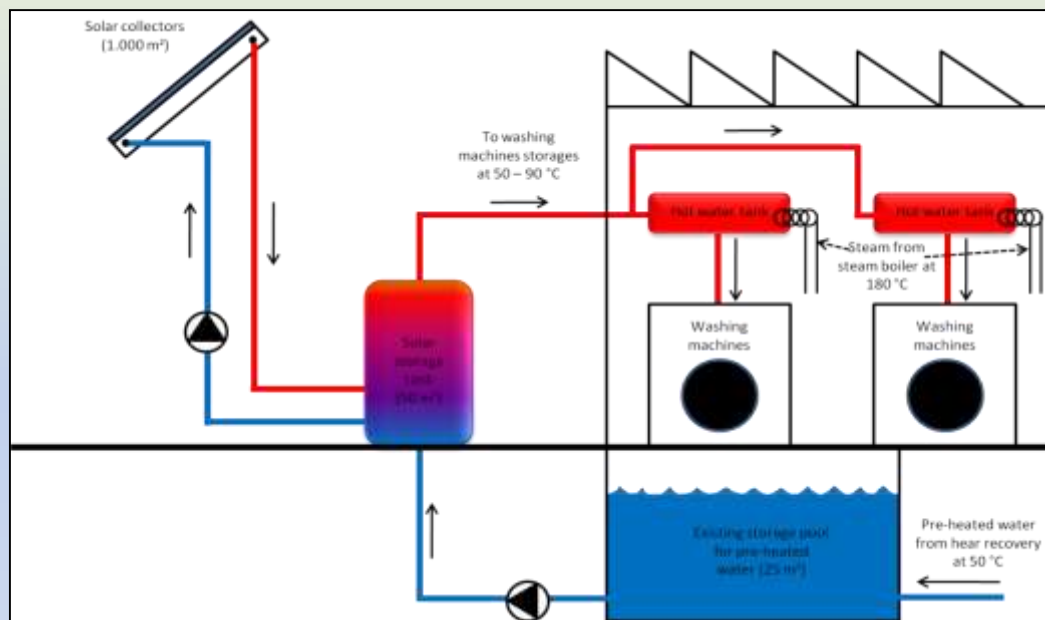
2 - Study on regulatory framework

- Review the existing incentive and regulatory framework and develop a new incentive tool to promote solar thermal systems in the Tunisian industrial sector.
- Determine the level of Governmental funds necessary to provide the incentive and their coverage under the Government Budget
- Draft, in consultation with Tunisian authorities, a proposal to integrate the identified incentive tool into the existing regulatory framework on solar thermal
- Address the role of financial institutions in providing credit.

Periodical Round Tables have been held to involve local stakeholders at all levels

Prosol Industrial: step II

Demonstrative plant at Benetton Tunisia in Sousse

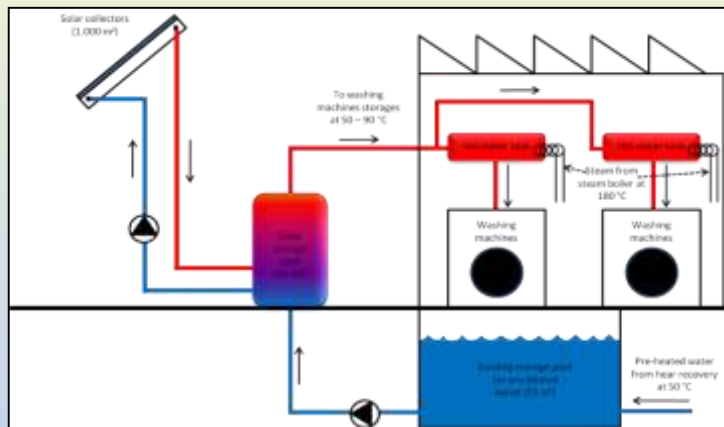


Plant construction started in May 2014

Design by Politecnico di Milano University

The plant is funded by MEDREC and co-funded by Benetton

Demonstrative plant at Benetton Tunisia in Sousse



955 sqm plant

Flat panels made in Tunisia

Integration with heat recovery system

Target price of the plant **550-700 TND per sqm** (2014 exchange rate)

Actual building costs after bidding **~800 TND per sqm** (2014 exchange rate)

These costs do not include design (1 year data collection and monitoring)

Support level for pilot project: **70% grant** provided by MEDREC

Demonstrative plant at Benetton Tunisia in Sousse

Benetton accepted 7-8 years Payback hypothesis due to double (even triple) bottom line (Strong **SCR** policy)

- Solar thermal technologies in the Tunisian industrial sector are currently not mature and not economically appealing for industry
- Nevertheless, savings produced with the use of solar thermal heat have an important impact on the public budget. (Effect of fuel subsidy phase out policy)
- Heat recovery possibilities before applying the solar thermal plants (usually much lower payback time).
- Necessity to lower costs! (develop standard integration schemes!)
- The horizon of the investment likely does not fit with industrial sector (**but maybe with building sector expectations**)

1. **Demonstrative plant at Benetton Tunisia**
2. **Elaboration of a support scheme**

Results will be presented in late November

Thanks for your Attention!