



# **ST-ESCOs Project**

**KAPÉ  
CRES**

## **Project Progress**

Spain

### **ST ESCOs project exposition in a Sustainability Construction Masters' program in San Sebastian**

On the 15th of February, ST-ESCOs project was presented to the students of the first "Construcción sostenible" masters' program held in San Sebastian. The aim of this Masters' program is to teach students the best materials to be used in building constructions.

Students included Architects, Engineers or Civil Servants currently involved in construction activities.

During the presentation ARGEM explained the goal of the ST-ESCOs project, along with the main aspects to be taken into account for the successful realisation of such projects. Moreover a demonstration of the specific software was made in order to show the effectiveness of the tool for ST-ESCOs studies. The students were also informed about the project website ([www.stescos.org](http://www.stescos.org)) and the useful information that can be found there.

### **ST ESCOs Guide was presented to the RES association**

On the last week of January, ARGEM organized EUSEW 2007 in Murcia. The events organised during EUSEW covered key topics that highlighted the multi-sectoral nature of sustainable energy development and stressed the need for working together towards a common goal.

One of the most important events that ARGEM arranged was the ST-ESCOs guide presentation to the installer's association based in Murcia. Twenty-five companies attended the events. Some of them are currently studying new ST-ESCOs projects that will be developed in Murcia the following months.

They were all very interested in the first ST-ESCOs project in Murcia promoted by ARGEM in Morales Meseguer Hospital. The aim of this presentation was to explain to installers that the success of an ST-ESCOs project is not only related to the technical

skills of the company, but to financial qualifications and good relationship with the client as well.



Picture 1: ST-ESCO's guide presentation

## Spain

### HOSPISOL project presentation

Another event organized by ARGEM in EUSEW 2007 was a two-day energy agency meeting in Murcia. The aim of this event was to present the different projects realised by the energy agencies in order to establish collaborations, develop new ideas in each region or to find synergies among

León Región by investing 4,5 M€. EREN has the property of each installation and obtains revenue from the heat water produced by each one. After conducting an energy audit in each hospital, the price of energy was established in the contract in 0,08 €/kWh. Currently, 8 installations have been concluded and 4 are being mounted.

Table 1 shows the data obtained from different installation. When studying these data, it should be taken into account that these installations are located in the north part of Spain where the solar



radiation is less than in Murcia where about 750 kWh/m<sup>2</sup> year could be produced.

Hospital	m <sup>2</sup>	Puesta marcha	Aporte kWh/año			Media anual Aporte kWh/año			Media anual Aporte kWh/año/m <sup>2</sup>		
			2004	2005	2006	2004	2005	2006	2004	2005	2006
			El Bierzo	477,12	01/09/2004	98.317	328.036	326.460	294.951	328.036	326.460
Nra. Sra. Sorsosles	357,84	01/11/2004	23.692	192.640	189.773	142.152	192.640	189.773	397,3	538,3	530,3
Medina del Campo	158,40	01/05/2005		65.515	79.326		98.273	79.326		620,4	500,8
Santos Reyes (*)	110,00	01/09/2005		23.130	52.355		69.390	57.115		630,8	519,2
General de Segovia	220,00	06/11/2005		11.386	105.069		68.316	105.069		310,5	477,6
de León subc. 1	308,00	01/09/2006			29.623			88.869			288,5
de León subc. 5	198,00	01/09/2006			7.055			21.165			106,9
Totales	3.191		122.009	620.707	789.661				Promedios		
Acumulados			122.009	742.716	1.532.377	218.552	151.331	123.968	507,7	557,5	443,9

Table 1: Main parameters and production of each Hospisol's installation

the different projects. This meeting was held in the room conference of the Industrial Engineer Association (COIIRM - Colegio Oficial de Ingenieros Industriales de la Región de Murcia). Some agencies presented their own on-going projects. The first project, presented by EVE (Ente Vasco de la Energía), was related to wave. Then AAE (Agencia Andaluza de la Energía) explained their Biomass Plan, EREN (Ente Regional de Energía de Castilla y León) presented HOSPISOL Project and finally AVEN (Agencia Valenciana de Energía) referred to energy saving in Hotels.

One of these projects, specifically HOSPISOL, is very similar to ST-ESCOs project. The aim of HOSPISOL project is to install 9500 m<sup>2</sup> of solar thermal collectors in 23 hospitals of Castilla y

But HOSPISOL project is not only about the installation of solar thermal collectors. A very important campaign for the promotion of solar thermal energy is also running.

### Bidding for the first ST-ESCOs installation

ARGEM and Health Regional Administration have just signed an ST-ESCOs agreement to sell energy to a 400 beds hospital. This 200 m<sup>2</sup> solar thermal installation will produce 190.000 kWh/year and will cover 45% of the total hot water demand.

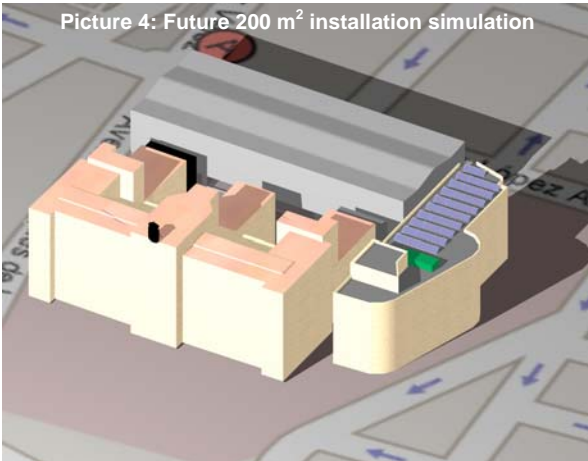
Through a public tender procedure, in which ARGEM's previous experience in big solar thermal installation has been taken into consideration, ARGEM proceeded with the project design. Works will begin in April and will be completed at the end of May. In this project twenty high efficiency 10 m<sup>2</sup> collectors will be used. Primary circuit will be protected from overheating by overdimensioning the expansion tank. 3 X 5000 litres tanks will be used for the storage of the hot water provided by the solar thermal collectors.

Picture 3: Agreement's signature by ARGEM's President and Health Regional Government



The optimum operation of the system is obtained through high tech instrumentation and remote monitoring.

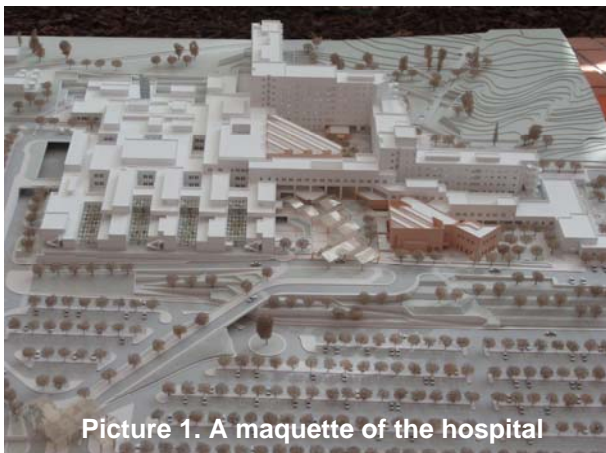
Picture 4: Future 200 m<sup>2</sup> installation simulation



## Hellas

In the context of the ST-ESCOs project, CRES experts visited "Papageorgiou" hospital in Thessaloniki.

Representatives of the hospital had expressed their interest to participate in the project, after



Picture 1. A maquette of the hospital

the publication of the call of interest for end-users in spring 2006. Following the evaluation of the pre-feasibility studies conducted, this case was the most promising for the establishment of an ST-ESCO agreement in Hellas.

A preliminary inspection of the spaces available for the installation of a solar thermal systems and was carried out and information about the



Picture 2. The boiler room

energy profile of the building was provided. A meeting with the administration of the hospital took place in order to present the ST-ESCOs project, as well as to discuss the main aspects of a future agreement was.

## Austria

### **Graz Berlinerring residential area. Largest solar thermal plant in Austria**

The residential area Berlinerring in Graz (Austria) consists of 25 residential buildings with a total number of 756 apartments. In the course of renovation works, solar collectors have been installed on 6 buildings. These solar collector arrays have a total collector area of 2,417 m<sup>2</sup>. This is currently the largest solar thermal project in Europe for an existing retrofitted residential area.

The solar system at Berlinerring supplies thermal energy to each of the single buildings which bear the solar collectors; this heat is used for space heating and hot water preparation. The excess heat which is not used inside a building is fed into the heat distribution system that exists between all residential buildings. In this way, also those buildings which have no collectors on their roofs are supplied with solar supplied heat.

Two heat storage tanks have been installed, each with 30 m<sup>3</sup> of storage volume. These tanks serve as a compensation between the energy delivered by the solar plant and the energy consumption profile of the residential area. Thus, solar energy can also be provided in the late afternoon and at night.





The company S.O.L.I.D. Solarinstallation und De-



sign mbH was responsible for the design and construction of the solar plant. The plant is operated with an ESCo model developed by the company nahwaerme.at Energiecontracting GmbH. The solar plant uses ökoTech Gluatmugl HT collectors; these collectors have been recently developed jointly by S.O.L.I.D. and ökoTech, they show improved performance.

#### Technical data

Collector area	2,417 m <sup>2</sup> (gross area)
Storage volume	60 m <sup>3</sup> (2x30m <sup>3</sup> )
Expected energy output	1,000 MWh per year
Estimated CO2 savings	>300,000 kg CO2 per year, compared with the previous oil boilers
100% solar ratio fraction in summer for the whole residential area (756 apartments)	

## Italy

### Funding programs and rules news

#### Open funding programs available for solar thermal plants:

Regions: Valle d'Aosta, Tuscany,  
 Province: Genova, Mantova, Trento, Bolzano, Siena, Viterbo.

In particular the programs of the two regions and the provinces of Mantova and Genova foresee, among others, special funding line to access subsidized credit. For example, Tuscany Region pro-

vides a turnover fund to cover the guarantees required for the loan as regard solar thermal (and energy efficiency) projects.

#### coming soon:

a funding program for the installation of solar thermal plants on public buildings is soon awaited from the Environmental Ministry ([www.minambiente.org](http://www.minambiente.org)). It will give a prime role to ESCOs realizations.

#### D.Lgs 311/2007

(adoption decree of the EU 2002/91/CE directive on buildings energy performance)

Among others items (most of them related to building materials and construction), it provides that at least the 50% of the DHW in new or refurbished buildings must be produced from renewable source.

### ST-ESCOs project

The ST-ESCOs final convention will take place the 6th of June 2007, at the Politecnico di Milano.

It will be realized in collaboration with FIRE, and it will show:

- The main project results: the Italian and European realizations; the project's tools
- Existing barriers: presentation of the ST-ESCOs policy paper;
- The future perspective for ST-ESCOs development:

financial and legislative conditions, available market shares.

## SOLAR EXHIBITIONS

**19-21 April 2007:** The 8th Solarexpo, the International Exhibition & Conference on Renewable Energy and Distributed Generation will take place in **Verona**.



The main items for ST-ESCOs are related to:

- **THE SOLAR SYSTEM:**  
Collectors and components, complete DHW and combi solar thermal systems, combined solar thermal & gas systems, solar cooling (...).
- **CONSULTING, DESIGN, SERVICES, ESCOs, CARBON TRADING, R&D**  
renewable energy planning and resource assessment, project development and design, renewable energy trading, ESCOs (performance contracting and third party financing), renewable energy heat service and leasing schemes, green energy banking and financing schemes (...).

Focus on:

8th Italian National Solar Thermal Conference  
THE DEVELOPMENT OF SOLAR THERMAL IN ITALY - market, policy & technology update 2007.  
Solar thermal and the new architecture. (in Italian and English, simultaneous translation)  
Thursday April 19th 2007, 9.00-13.30

This year it will be organised together with the first Greenbuilding - International Exhibition and Conference on Energy efficiency and Sustainable Architecture.

[www.solarexpo.it/solarexpo](http://www.solarexpo.it/solarexpo)

## More news...

### [ESTIF publishes Solar Thermal Action Plan for Europe](#)

On the 2<sup>nd</sup> of February 2007, the European Solar Thermal Industry Federation (ESTIF) published a Solar Thermal Action Plan for Europe.

The document spells out the benefits of solar heating and sets a clear, yet ambitious, target for 2020: the EU should aim at reaching 1 square metre of collectors' area for every European – 320 GW<sub>th</sub> of installed capacity. More than 19 million tons of oil equivalent would be produced annually by this collectors' area, thus replacing precious oil, gas and electricity.

The 26 pages Action Plan details how a positive and stable support framework can be designed to reach this ambitious target.

An electronic version of the Solar Thermal Action Plan can be downloaded here:

<http://www.estif.org/281.0.html>

Source: <http://www.estif.org/>

**For further information**  
[www.stescos.org](http://www.stescos.org)