

Sector: STH
Country: Italy
Location: Palermo

Diffusion campaign

for Solar Thermal Systems with National Gas back-up

Background

AMG, the local gas utility of Palermo, has recently launched the Diffusion Campaign of Solar Thermal Systems for Hot Water Production, with Gas Back-up.

The initiative, aimed at AMG's users, has been designed on the basis of a number of pilot installations, monitored from technical and economical points of view.

The diffusion campaign is scheduled over three years (1999-2001) and it is based on three main actions, in which target-users are both single families and collective users.

Most innovative Campaign's features are: Selling hot water produced by combined gas-solar systems, guarantee of solar results applied on small and medium size schemes and direct involvement of various stake-holders in the diffusion process.

The whole Campaign is monitored by technical (systems' performance), economic (cost/benefit analysis, also considering externalities) and social points of view (users' behaviour and job created).

Main objective of the Campaign is the implementation of a new role of local energy utilities.

Such a promotional and demonstrative Campaign can be suitably considered as a positive contribution to the key sector "15 M m² solar collectors" envisaged in the Campaign for Take-Off (CTO).

Promoters

Ázienda Speciale AMG

Parties Involved

Ázienda Speciale AMG

ENEA (the Italian Energy and Environment Agency)

CODIF (National Consortium of Energy Utilities)

Banca Sant' Angelo (locally originated bank)

Legambiente (leading national environmentalist association)

ISES Italia

EUROSOLAR

Kyoto Club (Association of Industries Promoting Environmentally-Sound Products and Processes)

MEDEA (Mediterranean Agency for Renewable Energies and Water)

L'ENERGIA CAMBIA VOLTO



ENERGIA SOLARE:
LA SCELTA INTELLIGENTE

Objectives

Main objectives of the Diffusion Campaign are:

- To enrich and innovate the energy services offered by AMG, considering the local solar radiation as economical resource.
- To favour the elimination of primary energy waste.
- To contribute to improving the skills of local installers (involved through specific meetings and voluntary agreements) and the environmental sensitivity of Palermo citizens, especially on solar energy applications.
- To create a partnership around this initiative, by involving complementary key-players.
- To give a contribution to the achievement of goals considered in the European and Italian White Papers on Renewable Energy Sources.

Actions

Action A

It is directed at families living on the upper floors of buildings or in detached houses who still use electric heaters to produce hot water.

A family wanting to shift to a combined system, receives from AMG (through a specific "front office", or toll-free phone number or web site):

- A roster of qualified installers (Solar Roster) who have signed with AMG - after a wide "partnership" with local stake-holders - a "voluntary agreement" with technical and economic terms of reference regarding combined systems' installation.
- Assistance for obtaining tax reduction (36%) on investment (about 1,500 Euro for an installed combined system).
- All necessary documents to obtain a special 5 year loan negotiated between AMG and Banca S'Angelo, with favourable interest rate and instalments to be paid back in the gas bill.
- Information on possible solar energy applications in homes.

Moreover AMG gives a 50 Euro grant to the first 100 citizens participating to the Campaign.

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AMG expects the installation on 2,500 combined systems in three years (about 10% of estimated urban potential), with the following progression: 500 systems in the 1st year, 800 in the 2nd and 1,200 by the 3rd.

It is to be considered both that in Palermo the average daily value of total solar radiation is of 5.5 kWh/m² on a 30° inclined south oriented surface, and that in the present Italian tariff the cost of kWh grows with the consumption.

Considering the special price of combined system agreed with installers and the tax reduction offered by Italian Government for private investment in house's refurbishment and renewable technologies applications, the pay-back time for conversion from electric heaters to a combined system, is less than four years.

Action B

Among the number of citizens contacting AMG to receive operative information on the Campaign, a group of 15 families is being selected for the "solar hot water sale".

For these users, AMG will install the solar system at its own expense and will meter and bill the user only for the hot water consumed.

Heat price (about 0.05 Euro/kWh) offers a saving opportunity for private users and allows AMG to consider the installation a medium-term investment.

The system's performance will be further guaranteed by a GSRth contract (Guarantee of Solar Results), which ensures at least a 60% solar fraction.

Action C

Target of action C are collective structures showing high hot water consumption (hotels, gymnasiums, hospitals, etc.), therefore good margins of saving by means of conversion to large solar schemes with natural gas back-up.

Also in this case, AMG offers "solar hot water sale".

Obviously the scale effect makes the large installation more interesting from the economic point of view, with a pay-back time range of 4-6 years.

With the expected outcomes, the whole Campaign should activate a new local economic sector and leverage private investment to produce solar technologies locally.

Financial Resources

Since the Diffusion Campaign shows a positive ratio costs/benefits from AMG's point of view, it is mainly financed by AMG. There is also a substantial contribution - in terms of human and financial resources - by ENEA and CODIF, in the framework of an agreement subscribed with AMG.

More specifically: AMG envisages the investment of about 300,000 Euro for installations regarding Action C (about 350 m² of large combined systems for "solar heat sale" to collective users). Action B should cost 25,000 Euro, while "software" expenses should be less than 150,000 Euro.

Management

Campaign's development is followed by a Steering Committee, of three experts (representing AMG, ENEA and CODIF).

In fact, between AMG and ENEA-CODIF an agreement - containing a work plan and terms of co-operation and support - has been preliminarily subscribed.

In Steering Committee's Meetings, technical, economical and sociological outcomes of the Campaign are evaluated, in order to optimise the actions' efficiency.

Monitoring

The whole Campaign is monitored from the technical (systems' performance), economical (cost/benefit analysis, also considering externalities) and social points of view (users' behaviour and jobs created).

More particularly: Systems' energy performance is controled in co-operation with ENEA, by means of permanent monitoring equipment and through the same "Solar Heat Sell Service", economical features are analysed from the Steering Committee; while users' behaviour is monitored through appropriate interviews and questionnaires.

Contact:

Mr. Federico Butera

Mr. Tullio Pagano

Azienda Speciale AMG
Via Ammiraglio Gravina, 2/E
90139 Palermo - Italy

Tel.: 39-091-7435 207

Fax: 39-091-6117 903

e-mail: amg pa@tin.it