

SOLAR THERMAL ENERGY

NAPOLI (Italy)

Although the quality of the equipment and the efficiency of thermal solar systems were improved a lot during the last years, this kind of energy production has not achieved an important share of the market. Due to the policy of cities there are couple of good examples for the diffusion of thermal solar systems in Europe. Solar energy is not quite popular in Italy, therefore several organisations of Napoli founded a project to promote the utilisation of thermal solar systems.

GENERAL ASPECTS

Napoli is the third largest municipality in Italy (1,065,000 inhabitants) and the largest in the south. It is the focal point for a metropolitan area with a continuously-increasing population of over 3 million which is still growing.

The city's problems include a high population density (over 9,000 inh./m²) and air pollution mainly due to transport and energy consumption.

Climatic data:

Hours of sun per year : 4,402

Annual Mean Temperature: 18.2 °C



CONTEXT

Even though solar thermal energy has, for many years, been a reliable technology, its penetration in southern Italian towns and cities has only just begun. The main obstacles to full diffusion are principally non technological: first, scant knowledge about this technology both on the part of the general public and technicians; second, the price of this technology which remains high if compared with the average income of a southern Italian household. Many people, especially politicians, business people and the general public, are unaware of renewable energy and its full potential. While the social costs - including substantial environmental costs - of traditional energy use are beginning to be well-known, considerable action in the field of information and education is necessary to communicate the benefits of renewable energies (such as solar) and clean energy sources.

However, the increased cost of traditional energies over the past few years (both electricity and natural gas) and new government subsidies (up to 41% of installation costs for a system based on renewables) have now made solar thermal systems economically profitable.

The low cost of energy and its non-rational use have caused in Napoli, as well as in Italy, severe air, marine and noise pollution. Therefore, the City of Napoli started some actions now, like the foundation of an Energy Agency or practical programmes to promote this technology in order to limit environmental pollution in the city and make people aware of the potential of new technologies.

EXPERIENCE OF NAPOLI

In the last few years a policy to increase public awareness of the problem has been pursued by the City Council, and many interventions and successful projects have been carried out in various sectors. In 1997 the ANEA (the Napoli Agency for Energy and the Environment) was established, in the framework of the SAVE program, and in 1998 the Municipality of Napoli created a new department called Environmental Design and Evaluation. These two bodies are co-operating on many projects.

ANEA's expertise may be useful for all municipalities which are starting up a new policy in the sector of RES. On the basis of an RES market survey, ANEA started a policy based both on information/communication to common people and training/education for technicians in order to promote market penetration of solar energy technologies.



The goals of this policy are to make the public aware of RES capabilities and which are economically profitable as well, to set up a network consisting of local enterprises working in the RES field and to collect information about the local supply of equipment (typology, features, costs, and so on). ANEA has rapidly become the local focal point for all the programs in the sector of renewables, organising and participating in several events.

ANEA is also participating in other national programs on RES: "10,000 tetti fotovoltaici" regarding PV technology, and "Comune Solarizzato" regarding solar thermal technology. Some details follow about the main projects and action developed by ANEA to promote solar thermal technology:

The MASTHERS project

ANEA is carrying out a project called MASTHERS (MARKeting introduction Strategy for THERmal Solar plants), in the ALTENER II framework, jointly with the partner Agencies of Munich and Sevilla. Co-operation between these cities is based on the experience made by the German local municipal utility in the promotion of thermal solar energy and on the consideration that the climatic conditions of the regions of Napoli and Sevilla allow excellent use of solar equipment.

The main goals of project are:

- Increase the amount of m² of solar collectors for hot water through more citizen information and by carrying out training programmes .
- Creation of a data-base as starting point to study the development of solar energy use in each European country.

The work programme of the MASTHERS proposal contains the following phases:

- Situation analysis,
- definition of quantitative targets for the penetration of solar equipment and non-technical goals and design of marketing measures;
- implementation of measures and analysis of results.

Initial results of the situation analysis showed several constraints to installation due to local and national laws regarding the preservation of land and buildings. Hence ANEA is working to involve the local authorities in a critical review of local regulations which have direct effects on the installation of RES technologies.

Other measures implemented until now by ANEA are those of information, publicity, meetings and some courses held in schools (both for students and teachers). Training courses are under way for municipal technicians and funding is currently being evaluated.

At the end of 1998 ANEA opened an information bureau to the general public (called sportello EcoEnergia) where information is supplied on RES and particularly on solar thermal equipment and programmes.

Event opened to public: SUNDAY events (1998 - 1999)



SunDay is an agreed Sunday - close to the summer solstice - designed to raise awareness about renewable energy through locally organised events held throughout Europe. ISES-Europe co-ordinates the SunDay event at the same time in many European countries.

In the last two years to celebrate and to welcome the summer, ANEA has organised the SunDay event on the historic seafront promenade of Via Caracciolo. Solar collector distributors, environmental associations (amongst others WWF and Greenpeace) and local and national research centres participated in the event, demonstrating their products and technologies.

In 1999 examples of integration of PV modules into building elements were shown and many children played with some "solar-demo-games" such as a small photovoltaic aeroplane, a photovoltaic fan and a sun ray concentrator.

Most of the public were very impressed by the efficiency of solar panels and collectors, which, together with the Government subsidy of up to 41% of costs of renewable-based systems, demonstrated even the economical profitability of solar thermal systems in Italy.

During this event the ANEA conducted a survey, by means of direct interviews with members of the public, to ascertain the level of public knowledge of renewable energy sources. The results will be compared with those of the next survey that will be held at the 2000 SunDay event, at the end of the Masters project.



EVALUATION AND PERSPECTIVES



Initial results must be evaluated taking into account the level of knowledge and awareness of RES in Napoli before the implementation of ANEA projects. Two years or so ago there were few groups of people who had any interest in RES as academic researchers, many of them being considered sorts of pioneers!

After less than two years of activity, the results obtained are promising, and the number of people and technicians who seek information on solar technologies increases day by day. The small network created by local distributors is starting to work and thanks to ANEA the Municipality of Napoli started a PV pilot action. Moreover, ANEA and the Municipality of Napoli are evaluating whether to supply a new market area, which is currently being constructed, with energy produced by RES.

FOR FURTHER INFORMATION

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