

# ITALY

## **STATUS**

A brief description of the most important elements in Italian regulations and certification/subsidy schemes related to solar thermal products is given below. The description is valid for November 2007.

## **REGULATORY FRAMEWORK**

### Building Regulations (general)

The Italian building stock has some particular characteristics, which are most relevant for the potential demand of solar thermal plants:

- The number of single family houses is much lower than the number of dwellings in multifamily houses (typically 6 - 8 stories; with limited surface available for the installation of solar collectors compared to the domestic hot water demand of the building).
- About 75% of all Italians own their own flat/house. This means that a large portion of all multifamily houses are multi-property, organised as so called "condominio". The installation of a solar collector on the roof of a condominio usually has to be approved by all owners. This fact has proven to be one of the main obstacles for the diffusion of solar plants in urban areas.
- Due to limited availability of central hot water supply, hot water production is done with individual instantaneous gas boilers or electric boilers thus making the integration of the solar plant with the individual hot water supply systems as time and cost intensive.
- Both in protected areas and historic city centres, which are quite extended, in Italy, the installation of solar collectors may be completely forbidden by both the national and local building code. However, a few autonomous Provinces and Region (for example Trento, Milan, Abruzzo) have changed their building codes recommending even in protected areas the installation of solar collectors without authorisation, as long as the inclination of the collector is the same as that of the roof, the collector is not elevated and the storage tank is not visible.
- The installation of a solar collector on a building requires in most Italian municipalities 'Dichiarazione di Inizio Attività' (DIA). The building owner has to inform the local building authority about his retrofit project. If there is no objection from the authority within 20 days, he may proceed with the installation of the solar heating system.

- The restrictive building regulation for solar heating systems seems to be in some areas an important barrier to the diffusion of this technology.

### **ACTION NEEDED**

The general principle should be established that the use of solar collectors is allowed without the need of any special authorisation, except for a precisely defined and limited number of buildings with particular historical or esthetical value. And in these areas, the procedures should be quick and transparent: the public authority should provide a list of acceptable technical solutions for the integration of solar collectors, that should be applicable for as many listed buildings as possible.

### **REQUIREMENTS RELATED TO THE ENERGY SAVING IN BUILDINGS USING SOLAR THERMAL SYSTEMS:**

All new buildings are covered by the EPBD (Energy Performance of Buildings Directive). The method used for the calculation of the solar system performance should be based on the European standard EN15316-4-3. Following, is a brief description of technical as well as financial norms relevant to the solar thermal systems and air-conditioning of buildings along with different financial norms at both national and regional levels.

### **TECHNICAL NORMATIVE RELEVANT TO SOLAR SYSTEMS.**

- There exist a government decree from Ministry of Industry dated 02/April/1998 with clear instructions that for any solar collector to be sold in the national market, same must be tested for technical parameters such like efficiency, pressure drop and overpressure.
- In addition, as on today, a series of initiatives are in progress especially at both the national and regional level for the installation of solar systems for different uses such as, sanitary water heating, swimming-pool heating and heating of buildings with contribution of 30% of the total system cost. The above mentioned contribution could be availed both by public sectors (municipalities, school, hospital, etc.) and private sector. However, to avail such contributions, Environmental Ministry and the Regional Government, in Italy, has set-forth specific technical characteristics of the system that needs to be satisfied.
- In case of new construction or public and private buildings with repairing (in accordance to art. 8 of DPR n°. 296 of dated December 27, 2006) it is obligatory to provide provision for the installation of a solar thermal plant and their connection to both individual and the network.
- In case of public buildings or a new construction for public use, in accordance with the DPR n°. 296 of dated December 27, 2006, it is obligatory to install a solar thermal plant for the production of sanitary hot water. The plant must be designed

to cover at least 50% of the thermal energy consumed annually to produce sanitary hot water.

## **ENERGY SAVING FOR HEATING OF BUILDINGS**

- So far energy consumption for heating of building is concerned, the same is regulated by both Law n° 10 dated 9.1.1991 by relative DPR n° 412 dated 26.8.1993 and law n° 296 dated 27 December 2006, in accordance with European directive on buildings 2002/91/CE. Rules set therein define different climatic zones, classification of building as per their uses, maximum values fixed for ambient temperature, average global seasonal efficiency, introduction of energy requirement conventional, FEP, requirement of primary energy for winter heating expressed in KWh/m<sup>2</sup>year of net useful surface of the building.
- The procedure for the calculation of indicative indices of consumption that must be inferior to the limited values reported in the above-mentioned decree depending upon the climatic zone and shape factor of the building S/V are also presented.
- Law 10/91 is mandatory for all public buildings that must satisfy the primary energy requirement of winter heating through possible use of renewable resources. This obligation is applicable in cases with PBT (pay back time) of less than 8 or 10 years respectively for the municipalities with population of below and above 50.000. From this point of view, it is worthwhile to notice an initiative by the environmental organization “Kyoto Club”. This initiative, named “Operazione 10”, aims at raising the awareness of the public sector towards solar thermal, by sending letters to designers in charge of specific projects, informing them about the real contents of the Law 10/91 and about its “compulsory nature”.
- Procedure relevant to the application of 2002/91CE dated 4/01/2001 on building certification, are also in progress. The Directive has been partially applied with a Decree passed in August 2005, but the application laws are still missing; regarding solar thermal, this Decree does not foresee any mandatory installation of plants, but it states that all new buildings should be “ready” for installing solar thermal plants; it means that hot and cold water piping should be made available for a potential future installation of solar thermal.
- In addition, other conventional regulations (Fire, wind and snow load, sanitary, safety, etc.) for solar collectors, needs to satisfy the law no. 46/90 called “Conformity Certificate”. That is applicable to thermal plant and to the solar systems as well. The above law state that the thermal is to be installed by only those installer who are duly on the roll of registered craftsmen. This certificate, to be issued by the installer (on the completion of the installation) is to be presented to the municipality while requesting certificate for the suitability of the building for living.

## **AVAILABLE SUBSIDIES AND INCENTIVES**

The situation of public subsidies for solar thermal has improved a lot during the last few years. Especially, the role of the national Ministry of Environment has been decisive for this improvement. Solar thermal products will be receiving excellent support in Italy. As per the Italian government law vide article 1 dated 27 December 2006, No. 296, good incentives are available to private individuals, home-owners and companies. The decree prescribes that at least 50% of the annual domestic hot water demand must be covered by renewable energy sources, whereas in the city centres with historical value the share is reduced to 20%.

Anyone, who decides on solar thermal systems for heating either sanitary water or to provide backup heating, not only, can drastically reduce their energy costs, but also deduct up to 55 percent of installation and initial costs for the system from taxes over a period of three (3) years. It is, however, important that the future operator of a system chooses the right product at the very start, as the incentives are only accorded to systems whose manufacturers provide a five-year guarantee on their collectors and boilers certified according to EN 12975 and EN 12976, as well as provide a two-year guarantee for the incorporated electrical and electronic components. Furthermore, the system must be installed according to regulations.

In brief, following financial incentives are available for solar heating, in Italy:

1. *Value Added Tax (VAT) at 10%:* Since the year 2000 a reduced VAT rate of 10% instead of 20% is applied by most suppliers for solar heating products.
2. *Tax cut of 55% of the total investment:* Home owners and tenants have the possibility to deduct up to 55 percent of installation and initial costs for the system from taxes over a period of three years. In theory, this tax incentive is also available for the installation of solar heating systems. Procedures to obtain the tax cut are well explained in the above-mentioned governmental decree.
3. Besides the national programmes, several Italian regions have already granted subsidies for solar thermal plants. In 2003, the municipality of Carugate, close to Milano, population 15.000, adopted a new building regulation with strong attention paid to the reduction of energy consumption. In particular, it included an obligation to meet at least 50% of domestic hot water demand from solar thermal energy. The regulation has been in force since the end of December 2003. It covers new buildings for several final uses: residential, commercial, industrial, tertiary, and collective use buildings (cinemas, theatres, hospitals, sport halls, schools, etc.). A key positive aspect of the Carugate regulation was its pioneering character in Italy, and the proactive dissemination campaign started in March 2005 by the Province of Milan, in collaboration with the University "Polytechnic of Milan" and with 13 Municipalities. They jointly developed common guidelines for sustainable building

regulation. A growing number of municipalities have their “sustainable building regulation” approved and some more are on the way.

4. Lazio Regional Law no. 15, passed on 08/11/2004, has the aim of promoting solar energy and rational use of water in buildings. The scope includes new buildings and those under refurbishment, but all buildings located in historical areas are exempted. Municipality of Roma is working to publish a regulation obliging the use of solar thermal to meet at least 50% of the sanitary hot water demand for new buildings. This new initiative could act as a starting point to spread the introduction of solar thermal in building regulations to the whole Region.

National programme for public bodies and municipal gas distributors: Since January 2002 a programme of the national Ministry of Environment, offered a 30% subsidy to public building owners and municipal gas distributors for investments in solar heating systems.

Regional programme for private investors: The Ministry of Environment has concluded a subsidy programme for private investments in solar heating systems. The Ministry financed 50% of the programme. The other half of the funds was supplied by regional authorities. The call for tender will be managed by regional administrations. The programme will subsidize 25 - 30% of investments in solar heating plants.

White Certificate. It is to be noted that in Italy while it is obligatory for all the electric operator with new installation to produce this year 3,5 % of their total electric energy needs using renewable energy resources, the same concept is valid for energy saving in term of Tep saved. In fact all the gas distributing companies must take necessary step for energy saving using different way accepted from Industry Ministry, one of this is the solar thermal installation (White Certificate). Like the green certification that depends upon the quantities offered, there aren't sure value in the case of the white certificate.

## **TESTING**

The Solar Testing Laboratory at ENEA Research Centre Trisaia is the only laboratory, in Italy, accredited to perform testing of solar thermal collectors and factory made systems according to ISO and EN standards.

## **CERTIFICATION**

- There is no National Certification Scheme for solar thermal products in Italy
- At present, ICIM, is the only certification body to get certification from **SINCERT** (Italian accreditation body)
- There is no national energy labelling scheme for hot water tanks
- Assolterm, the Italian Solar Thermal Industry Association is promoting a voluntary mark for producers and distributors of solar thermal collectors, named Solar Pass and already operating. It is also promoting a certification scheme for

installers of solar thermal systems, named “Solar Pass Installa”; in order to get this certification, the installer companies should satisfy the requirements of Law 46/90 and attend a specific training course for installers of solar thermal plants.

## **INSURANCE**

- Five-year guarantee on their collectors and boilers as well as
- two-year guarantee for the incorporated electrical and electronic components
  
- The installation of a solar thermal system usually does not affect house insurance

## **INFORMATION, MARKETING AND SALES CAMPAIGNS: PAST AND PRESENT**

Learning lesson from the past and giving due importance to high quality solar products, public subsidy scheme, technically trained and well qualified installers, etc., with a marked acceleration growth observed recent, the development of the solar thermal sector is very encouraging. As per study conducted by the Solarexpo Research Centre (based on a survey carried out with manufacturers and suppliers) Italian market went from 127 059 m<sup>2</sup> installed in 2005 up to nearly 186.000 m<sup>2</sup> (46.4% growth with respect to 2005) in the year 2006. Moreover, it is estimated that with all the probabilities, total installed capacity during the year 2007, will surely be up to 300.000 m<sup>2</sup>.

It is further to be noted that Italian government decision to increase the tax deduction to 55% for private individuals (vs. 36% before this) will certainly give an additional boost to the solar thermal market growth in Italy. It is further to be noted that with reference to the Position paper of Italian government relevant to the document entitled, “Energy: themes and challenge for Europe and Italy” (September 10, 2007) annual installed capacity of solar thermal (nearly  $3.8 \times 10^6$  m<sup>2</sup>) and an overall  $17,4 \times 10^6$  m<sup>2</sup> by the year 2020 (equivalent to 1,12 MTOE) could be expected.

Taking into consideration the current growth, the situation is very favourable for production capacity increase strategies. By reinforcing the systems of financial assistance for investments and by introducing new legislations that require or incite the installation of solar systems in buildings that are under construction or being renovated, present situation is very favourable for continuation of rapid growth in the country. The strong growth of the Italian market will also influence the industrial growth of the country. According to new study financed by the Solarexpo research centre, sector turnover at €78 million in 2006 will be € 120 million for the year 2007.

## **ACTIONS NEEDED**

### General

- Co-ordination of the Italian requirements in certification, regulations and subsidy schemes with European standards and Solar Keymark certification

- Implementation of European directives concerning solar thermals (energy performance of buildings, energy labelling etc)

### Regulation

- Application of the already operating laws
- The calculation of energy loads and gains for new buildings has to include the option of installing a solar thermal system
- Implementation of standard procedures for calculating the influence of solar thermal systems on the energy performance of the buildings
- Standardization of permitting procedures

### Subsidies

- Subsidies must be provided based upon the actual energy saving.
- Make use of the European standards and the Solar Keymark in the national subsidy schemes

### Testing

- Promote the use of EN testing to the Italian manufacturers (communication actions)

### Certification

- Promote the use of Solar Keymark by assisting the Italian manufacturers and by adapting existing/futures subsidy requirements to these certification schemes
- Promotion of the national certification scheme for installers

Co-operation with existing infrastructures of the supply chain of conventional building materials (windows, facades, roofs) and heating equipment must be used for the distribution of solar heating products to reach more installers and end-users.

Education and training of installers, architects, engineers, building authority and energy service staff is necessary to guarantee the quality of the plants as well as to improve the counselling service supplied to end-clients. The purpose is to provide advanced technical knowledge and development in the sector so as to achieve maximum diffusion of solar thermal technology. It is in this context that already some programmes have been planned.

International co-operation is a key element for a fast market development. In fact, in some European countries there has been done a lot of work in the field of R&D, realisation of plants and in the marketing sector. The vast know-how gained from this work could be transferred to Italy via European or international research projects (EU, IEA, SH&C) or through industry co-operation.

Definition of favourable building codes: The installation of solar heating plants should generally be exempt from building permits. Specific requirements (e.g. max. collector dimension, only roof integrated collectors, etc.) can be defined for protected locations, in order to avoid undesired installations.

Dissemination: At the national level, ENEA (Italian Agency for New Technology, Energy and the Environment), ISES (International Solar Energy Society, a few Regional governments and some associations like Ambiente Italia, in addition to the numerous manufacturing organisations and many other institutions, are actively involved for the diffusion of information on the potential use of solar thermal, in Italy. In addition to what has been said above, another strong technical group is active in the framework of CTI with principle objective of collecting the suggestions from contractors and the users in order to remove the technical barrier for widespread diffusion of the technology. For example to re-elaborate the national norms on solar collector and system testing. The interest for renewable energy systems, addressed with specific education programmes, are promoted by different institutions, as e.g. the Ministry of Environment, ENEA and some local energy agencies.