

## SAIENERGIA REPORT 2009

### *Energy and buildings.*

### *Energy efficiency in building to promote well-being, savings and the environment*

The first SAIENERGIA 2009 report entitled “*Energy and buildings. Energy efficiency in building to promote well-being, savings and the environment*” was presented at the 45th SAIE, held in Bologna from 28 to 31 October 2009. This report on energy and buildings was produced by Cresme for SAIENERGIA, a theme exhibition devoted to renewable energy and low-energy technologies for sustainable building, now in its second edition following its successful launch in 2008.

The report offers a detailed analysis of the Italian energy situation and the potential for energy efficiency retrofit initiatives in the field of residential building in view of the fact that the building sector is one of the major causes of environmental problems while offering broad scope for action to achieve the objectives established by the European Union and the various international protocols.

Through an analysis of existing dwellings and a survey conducted over a sample of residential building users, the report offers:

- a series of technical solutions that allow for an increase in energy efficiency together with an improvement in the level of comfort of users;
- an estimate of market potential in residential building in the various areas of intervention (doors and windows, roofs, utilities, etc.);
- an analysis of the percentage of the population that has made or intends to make alterations to their homes in order to improve energy efficiency and the level of knowledge of the possibilities offered by the market and legislation;
- the viewpoint of various trade associations on the initiatives to be undertaken in various sectors – product and process innovation, legislation, diffusion of information, etc.

The survey focuses in particular on measuring the potential of the various market sectors interested in residential building activities. For this purpose, it has attempted to obtain figures for the main residential building components conducive to energy efficiency retrofit initiatives, namely the number of doors and windows, the square metres of perimeter walls and roof coverings, the number of utilities, etc. This approach has yielded the most detailed possible picture of the current stock of building components susceptible to potential retrofit activities in order to improve the energy efficiency of buildings and reduce energy consumption and greenhouse gas emissions.

The report covers five sectors:

- Transparent vertical envelope elements (doors, windows and glazing systems).
- Opaque vertical envelope elements (wall and insulation systems).
- Horizontal envelope elements (roof systems and insulation).
- Air conditioning systems.
- Energy production systems.



For each of these the survey estimated the potential for retrofit in a time period between the next 5 and 10 years in terms of number of units, square metres, etc. The results revealed an enormous quantity of components, estimated for example at around 137 million windows, 3 billion square metres of external walls and 831 million square metres of pitched roofs.

Although the existing building stock is now outdated following the emergence of potentially much higher standards, there is a growing collective awareness amongst homeowners who are keen to improve the characteristics of their homes and the economic impact of energy consumption on the household budget, and this is not always reflected in an adequate response in terms of research, production and legislative activities.

The report therefore reveals two sides to Italy: on the one hand buildings that are badly in need of energy retrofit initiatives and on the other users and homeowners who are capable of driving a virtuous circle of reduced consumption and widespread improvement in energy efficiency.