



Michele Zinzi
Gaetano Fasano
Marco Citterio
ENEA
Italy

More information can be found at
the ASIEPI project website:
www.asiepi.eu

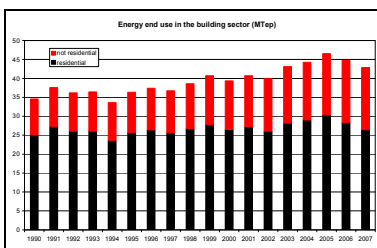


Figure 1: Energy end use in Italian buildings since 1990. Red: non residential, black: residential^[6]

Italy: Impact, compliance and control of legislation

This paper aims to summarise how in Italy the implementation of the EPBD has changed the national EP requirements and has influenced the building stock. It describes the national way of handling with EPBD compliance and control and tries to identify interesting approaches and possible bottlenecks. This document summarizes the situation at July 2009.

1 > Impact of the EPBD on the national requirements

The publication of EPBD had a strong impact on the energy policies in Italy. Even if a national framework existed before 2002, a new set of legislative measures was set up in order to comply with the EU framework.

The energy legislation for the building sector started in Italy in 1976, as a consequence of the world oil crisis^[1]. The main content of this law was the limitation of the building losses for transmission and ventilation to limit the heating system size, as function of the geometry of the building and the climatic conditions. It was mainly a power control method, without considering the energy efficiency of the building. These issues became more important in early 90's with a new legislative measure^{[2] [3]}, introducing the energy performance of buildings according to the locality and the geometry of the building itself, also requirements on the energy system efficiencies were introduced. Figure shows the trend of energy use in the building sector, divided in residential and non-residential buildings. The first step of legislative framework was based on the evaluation of the building energy efficiency taking into account the heating energy use in the winter season^[4].

DHW, cooling and energy use specifications were added in June 2009^[5]. No specific indications are given on the efficiency of the ventilation systems.

The law fixes minimum requirements for the primary energy consumption of the building (in kWh/m² in residential buildings and kWh/m³ in not residential buildings). These requirements are fixed depending on geometry of the building and the climatic zone.

Minimum requirements for the thermal insulation level of the envelope components and for the energy systems are also fixed. To be noted that the actual law defines the insulation levels and the heating system efficiency which prevents from the calculation of the energy performance indicator.

The new minimum requirements led to tighter limits to be respected by new buildings, it is estimated that such reduction should be between 15 and 20% respect to the old calculation method. The actual law does not take into account indoor temperature issues.

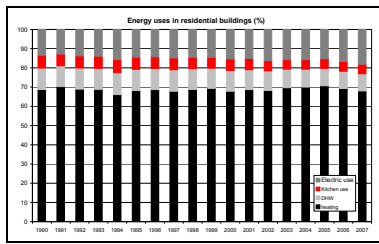


Figure 2: Percentage energy uses in the residential sector per typology of energy use.
 Dark grey: Electricity
 Red: Kitchen uses
 Light grey: DHW
 Black: Heating [6]

Italian climatic zones



The data in figure 1 shows a positive trend in the energy consumption reduction, even if the intensity is modest. The results is mainly achieved by reduced heating consumption partly due to the new energy policy landscape and partly, probably, due to milder winters in the few past years.

To be noted that the building energy certification procedure has been defined with National Guidelines issued on June 26, 2009. The certificate must not be exposed in buildings and has a 10 years validity.

The legislative framework is in line with EPBD for what concerns existing buildings and the mandatory certification when selling or renting buildings.

The market is moving towards more efficient products, even if eco-labelling is not introduced in the country and the energy systems control did not change since the past energy regulations. The real market push to more efficient components is coming more from incentive schemes than by the EPBD implementation. Lot of funds were made available for end users to take renovation actions (new windows, envelope insulations, solar thermal systems, condensing boilers) and this measure is really moving the market, while the EPBD implementation is suffering from the long bureaucracy procedures. In the future it is very important to move towards reductions in other energy uses. As an example figure 2 illustrates how the electric uses share is increasing in these few past years.

Because of this situation the influence of the energy certification on the building prices is practically null.

Concerning the use of renewable energies in building, the national decrees expressly state that the installation of solar systems for electric and thermal energy uses are mandatory. In particular it is required that the 50% of domestic hot water heating energy is from solar thermal systems. The percentage decreases to 20% in historical city centre. This rule can be exempted if the impossibility of such installations are accurately described in a technical report. This latter aspect is crucial to avoid the installation of solar systems in many cases. Also the PV system for at least 1 kWp minimum per dwellings is mandatory.

Concerning the primary energy conversion factor, the landscape is not well assessed. The fossil fuel conversion is 1, while the electric conversion factor is 9 MJ = 1 kWh_{electric}.

Conversion factors for renewable energies are still missing. Literature review values are taken by experts when dealing with solar, biomass, etc.

The actual decrees do not clarify the qualification requirements and independence of energy experts for certification process. This is expected to come in the forthcoming decree. Today the energy qualification document can be signed by a number of professionals, included the calculated results without specific experience in this sector.

It is important noting the national legislation allows the single regions to manage the energy policies, if they decide not to follow the national framework. This implies that while the national government is slowly proceeding his route, several regions already started working on a regional certification scheme. Local schemes are developed in several are: Lombardia Region, Liguria Region, Bozen Province among others. They have their methods and their accreditation scheme, situation uneasy if seen from a national point of view (i.e. If we will have 20 schemes, 1 per regions, in principle an expert should go through 20 accreditation schemes!)

2 > Compliance

Professional in charge for the EP calculation has the responsibility to verify that the requirements are met. The professional can be the supervisor of works or a third figure respect to the building construction company and the final customer.

There is a penalty system involving the professionals involved in the certification process, with administrative procedures and economic fees. In particular this will apply if:

- > the EP requirements does not meet the minimum values as set in the legislative acts
- > the EP requirements results to be not true.

In both cases the fee is calculated on the basis of the economic income paid to the professional.

Proper authorities (municipalities in most of the cases) can carry out all the needed control during th execution of the works or up to 5 years after the end of the works. What happen in general is that they have generally lack of expertise and moreover very few funds allocated to make controls on the proper execution of the work.

It is responsibility of the constructor to supply the certificate by a qualified professional to comply with the EP certification. The same applies for building renovations. In case of selling or renting, the responsibility relays on the building owner. The selling/renting act must accompanied by the energy certification. The documentation must be presented with all relevant project documents. The municipality approves the end of the works only if the energy certificate is supplied.

There is a penalty system involving all the actors involved in the certification process, with administrative procedures and economic fees. In particular, the works supervisor is responsible for:

- > the correct execution of the work respect to the original design and approved variations and
- > depositing the documentation to the proper office of the municipality; the constructor and the owner, responsible for the certification compliance;

If the supervisor does not respect these responsibilities, he will be fined with an amount proportional to his professional fee.

The professionals, in charge for control and maintenance of the energy systems, are in charge for the control and compliance of the procedures.

The building contractor and/or owners are responsible for the energy certification process, hence they will be fined if they will not comply with the procedures defined in the legislative acts.

3 > Control

Proper authorities (municipalities or other national or local authorities for public buildings) have generally lack of expertise and moreover very few funds and resources allocated to make controls on the proper execution of the work. This is a bottleneck the country experienced in the past decades, when no serious penalty and control actions were disposed in in the case of violated energy requirements.

At national level there is no qualification control: to be member of a professional board (engineers, architects and so on) is enough for issuing an energy certificate, but at regional level different procedures of

ASIEPI partners:

BBRI (BE; technical co-ordinator), NKUA (GR; financial & administrative co-ordinator), TNO (NL), IBP (DE), SINTEF (NO), CSTB (FR), Cete de Lyon (FR), REHVA (BE), ENEA (IT), AICIA (ES), NAPE (PL), VTT (FI), E-U-Z (DE), Enviros (CZ), SBi (DK)

Associated partners:

Eurima (BE), PCE (BE), ES-SO (BE), EuroAce (BE), FIEC (BE), Acciona I (ES)

Subcontractors:

Kaunas University (LT), University of Budapest (HU), University of Bucharest (RO), BRE (UK), UCD (IE)

Link: www.asiepi.eu

Original text language: English

qualification are foreseen. An auto-declaration of not being in position of conflict of interests is enough for proving the independence of the professional.

The certification market did not really start in Italy yet: the decree that regulates the matter has been delivered few weeks ago. The lack of procedures for experts has been another point that slowed down the process.

4 > Incentives

In this framework energy consultancy is a privilege for few large projects where, moreover, the attention towards the energy efficiency is moved by a general increased interest for the low-carbon strategies, more than by the national certification scheme.

Some incentive policies related to EBPD were applied during the last couple of year. It's foreseen a 55% reduction in tax for some energy measures, related to the improvement of insulation of the building envelope, the heating system and the installation of solar thermal systems. The scheme is dedicated to the building renovation.

Other efficiencies measures are covered by the 36% reduced taxation scheme, which cover generic refurbishment measures, including some Other incentives can be found at regional level, they are related to different measures and the fund are assigned by dedicated tenders.

Certain techniques (mainly those involving cooling or lighting) have not yet been subsidized because the certification scheme did not cover the whole area, as designed in the EPBD. Other techniques will probably be subsidized in the future in consequence of recent enlargement to cooling and lighting loads certification procedures.

5 > References

1. Legge 373/76 "Norme per il contenimento del consumo energetico per usi termici degli edifici"
2. Legge 10/1991 "Norme in materia di uso razionale dell'energia, di risparmio energetico e di sviluppo delle fonti rinnovabili di energia".
3. DPR 412/93 "Regolamento recante norme per la progettazione, l'installazione, l'esercizio e la manutenzione degli impianti termici degli edifici ai fini del contenimento dei consumi di energia, in attuazione dell'art. 4, comma 4, della legge 9 gennaio 1991, n. 10." Updated with DPR 551/99
4. DLgs 192/2005 "Attuazione della direttiva 2002/91/CE relativa al rendimento energetico nell'edilizia"; DLgs 311/2006 "Disposizioni correttive ed integrative al decreto legislativo 19 agosto 2005, n. 192, recante attuazione della direttiva 2002/91/CE, relativa al rendimento energetico nell'edilizia"
5. DPR 59/09 "Regolamento di attuazione dell'articolo 4, comma 1, lettere a) e b), del decreto legislativo 19 agosto 2005, n. 192, concernente attuazione della direttiva 2002/91/CE sul rendimento energetico in edilizia."
6. Rapporto Energia Ambiente 2008 - ENEA

Disclaimer: ASIEPI has received funding from the Community's Intelligent Energy Europe programme under the contract EIE/07/169/SI2.466278.

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Communities. Neither the European Commission nor the authors are responsible for any use that may be made of the information contained therein.

© European Communities, 2009
Reproduction is authorised provided the source is acknowledged