Italy

Building Code Implementation - Country Summary


Section I: Code Development

History

Starting year

After the energy crisis in the 70s Italy has established the first law on energy saving in buildings (Law 373/1976). This was followed by the Law 10/1991 implementing the National Energy Plan and dealing with energy saving and renewable energy in buildings. The Law also introduced Energy Performance Certification in buildings for the first time.

In Italy, the national government is responsible for implementation and monitoring of broader energy policy, such as implementing the Energy Performance in Buildings Directive (EPBD) and other European directives. Italy has 20 regions subdivided into provinces and 2 autonomous provinces. Regions have jurisdiction over in environmental, planning and building control matters. Therefore, while several building provisions set by national law aim at guiding and harmonizing the regulatory framework, regional governments are still responsible for building energy codes.

The national government has issued decrees implementing EPBD (2005) primarily focusing on minimum energy requirement for buildings, methodologies for calculating energy performance of buildings and national guidelines for Energy Performance Certification (2009). However, later acts implementing Directive 2010/31/EU through Law 90/2013, will include stricter requirements to limit energy consumption in buildings. In a few cases, some regional building codes had already required energy saving measures prior to the national laws. The most recent national legislation also requires regions that have not adopted their own building regulations to comply with the national guidelines.

Upcoming acts to implement EPBD by Law 90/2013 (energy performance calculation method, new energy performance limits and Energy Performance Certification) will be published in 2015, stressing the need for harmonization of regional/local codes and monitoring and control. The new law will issue a building code using the EPBD cost optimal requirements (meaning that measures are required based on their net lifecycle costs and benefits); the new law will enter into force in October 2015.
**Timeline/ road map**

1973  First Law on energy saving in buildings
1991  Revision of 1976 Law and implementation of National Energy Plan on energy saving and renewable in buildings
2005, 2006 EPBD implementation: mandatory EPC, minimum energy performance requirements, U-value targets, etc.
2009 EPC national guidelines (however, some regions adopted their own EPC system earlier)
2008 Energy Efficiency Directive (ESD) implementation: volumetric deductions for buildings with thicker walls and floors
2011 Renewable Energy Directive (RED) implementation including mandatory integration of renewable energy in Buildings (e.g. Solar Thermal)
2013 EPBD2 implementation (will be fully integrated into Italian legislation in 2015): introduction of energy efficiency checks, verifications and inspections on heating/cooling systems, of a ‘Net-Zero Building’ concept, stricter requirement for minimum energy performance; new definition of EPC (layout, indicators, harmonisation of regional EPC and establishment of a national information system),
2014 EED implementation: including a national strategy for energy renovation of the building stock and policies for public buildings

**Existing codes**

**Structural coverage**

<table>
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<tr>
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<th>Scale (National, regional, local, etc.)</th>
<th>Building size threshold</th>
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<tbody>
<tr>
<td>Residential buildings</td>
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<tr>
<td>New buildings</td>
<td>National and regional</td>
<td>None</td>
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<tr>
<td>Existing buildings</td>
<td>National and regional</td>
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<tr>
<td>Commercial buildings*</td>
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<tr>
<td>New buildings</td>
<td>National and regional</td>
<td>None</td>
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<td>Existing buildings</td>
<td>National and regional</td>
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National laws limit energy consumption in buildings according to EPBD. Regional and local governments issued technical guidance for codes implementation and are responsible for design reviews and on-site visits during construction and before occupancy. Some regional and municipalities adopted building energy codes prior to the national laws. In July 2015, the national government issued three new decrees to update and harmonize existing regional or local codes by making one single national set of standards. These new decrees will apply to virtually all regions in the same way, based on the EPBD. The decrees will go into effect in October 2015. Compliance with the old set of rules varies between regions and jurisdictions.

**Measures covered**
- Envelope
- HVAC
- Service water heating
- Lighting
- Electric power
- Renewable energy

**Updates/new codes**

**Motivation/policies for improving existing building energy codes**
European targets; requirements under EPBD, EED, RED. The 2015 update was partially motivated by EPBD cost-optimal methodologies regarding energy efficiency requirements.

**Involvement of stakeholders in the development of codes**
A Conference of Regions and Autonomous Provinces (Conferenza Stato-Regioni) is in charge of coordination between the national and regional governments through committees and working groups made up of various stakeholders. Moreover, the relevant ministries regularly hold stakeholder consultations with support from national agencies. The National Agency for New Technology, Energy and Sustainable Economic Development (ENEA) also supported the development of current financial instruments and upcoming new energy certification guidelines through a voluntary consultation mechanism (Tavoli di Lavoro 4E).

**Key methods used to engage stakeholders in the code development process**
Direct consultation from the ministries and support by national agencies; however, it is unclear if and how non-government agencies are involved in the process.

**Section II: Code Implementation**

**Administration**

**Administrative/enforcement structures**
Various agencies and bodies, in charge of monitoring implementation, maintain a forum among central government ministries, regions, provinces and municipalities to assist with implementation. Presidential Decree No. 74/2013 established procedures and protocols for operating, controlling, inspecting and maintaining boilers, air conditioners and domestic hot water systems. For other elements of building, assessing enforcement structures is challenging, since local governments are responsible for issuing regional energy regulations. National legislation in July 2015 addresses new guidelines for building energy codes and EPCs, and a national information system collecting data from regions, monitoring and supporting enforcement of building energy regulations.

**Government agency**
Regions are in charge of monitoring and oversight, establishing their own heating/cooling systems registry and EPC registry. Regional bodies are typically responsible for certification of private-sector and third-party inspectors and EPC control. In practice, local governments review EPCs for compliance with the building energy codes at the design stage, but buildings are almost never inspected during construction. The most important exceptions to this are in the province of Bozen/Bolzano and Trento. In other regions, new and renovated buildings with the highest energy rating (“A” level) are selected for post-occupancy inspections of energy use and compliance with building energy regulations (covering 2-5% of buildings with an EPC). The local governments are also in charge of periodic controls of compliance and efficiency of operating building heating/cooling/district hot water technical systems.

**Private sector/third party** Certified private-sector professionals issue EPCs, which include the information needed for local officials to assess compliance with the building energy regulations (such as the specific materials proposed for the building). Developers may voluntarily hire certified private experts to inspect the building during construction under third party private certification schemes.

Decree-Law No 75/2013 (converted into Law 9/2014) and Law 90/2013 recently strengthened energy certification and qualification for certification experts: national courses for certification experts can be provided by universities, research organizations, professional associations and unions with a minimum of 80 hours of work experience. DPR 7/2013 also strengthened the professional requirements for inspectors (e.g., degree or technical diploma with a minimum of 2 years’ experience). All regions, but Lombardy, Valle d’Aosta and the Bozen province, follow the national law, which exempts certain experienced and trained professionals from taking the certification courses. In Lombardy, Trento and the Bozen province, a qualification course is mandatory regardless of the expert’s experience and skills. Qualified experts can issue EPCs for any type and size of buildings.

Management and inspection of **heating/cooling systems** includes evaluation of energy efficiency and advice on feasible improvement measures.

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_The roles of stakeholders_
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<tr>
<th></th>
<th>Design</th>
<th>Construction</th>
<th>Pre-occupancy check</th>
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<tr>
<td>The role of federal/central</td>
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<tr>
<td>government</td>
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<tr>
<td>The role of state/provincial</td>
<td>Under decree No. 74/2013, competent</td>
<td></td>
<td>Local authorities</td>
</tr>
<tr>
<td>and local government</td>
<td>regional/local authorities are responsible for performing energy efficiency checks, verifications and inspections on heating/cooling systems (internal or external personnel) and for establishing the criteria to be used for those checks.</td>
<td></td>
<td>may carry out on-site visits before occupancy; these inspections are performed on a percentage (2-5%) of certified buildings/units and apply only to the highest rated buildings. The presence of sufficient data (e.g., full project(contract documentation) is considered satisfactory to evaluate the energy performance of buildings without an on-site visit. A final report, signed by an engineer confirming compliance with the town planning rules, the construction regulations and the EP requirements, is also compulsory.</td>
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Certified third-parties prepare EPCs. Private certified independent inspectors (within the ICMQ, LEED, and CasaClima schemes) may also review all aspects of a building’s design and construction when the developer voluntarily decides to pursue certification for a building under these schemes that anyway comply with the national one.

Enforcement of energy saving measures (e.g., the building energy code) varies by locality; Bozen/Bolzano and Trento are currently the only province which require building inspections.

The person in charge of the heating/cooling system (owner, building block manager, third party) submits all necessary documents to the competent authority.

Registration of heating/cooling systems is accessible online, with all relevant parties able to upload the required documents.

Real estate agencies have to display EP class in commercial advertisements to buyers and tenants.

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**Requirements for commissioning before occupancy**

There is a commissioning requirement for public buildings.

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**Requirements for energy audits after occupancy**

No. The Italian decree implementing EED (No. 102/2014) requires central government buildings to undergo energy audits in order to identify retrofit priorities when the renovation exceeds 3% of the building area.

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**Tools used for compliance checking**

**Software used for compliance checking**

No software exists to check compliance with the building energy codes. Several commercial and regional software packages exist for EPC issuance, although the national decrees issued in 2015 will require a more unified national approach to these calculations. Under the new approach, all buildings will have to demonstrate compliance compared to a reference building that exactly matches the geometry and orientation of the building to be permitted. The EPC software makes it easier for local officials to check design compliance because they present key energy information about the building, such as U-value of specific components. In some regions, a unique energy performance calculation software has been used within the independent EPC system. In most of cases, the calculation of the EPCs makes use of
commercial software. Software is certified for compliance with a national algorithm and technical standards (series UNI TS 11300) by an independent certifying body (CTI). This assures minimal variations of different software results.

For existing residential buildings, until October 2014, a simplified public software program (DOCET) could be used; there are plans to upgrade and re-launch the residential EPC software based on the new national decrees that establish unified calculation rules for all of Italy.

**Capacity building and education**

*Education and capacity building programs that support code implementation*

Italy participates in several EU-level programs, such as the “BUILD UP skills” program, that aims to align workers operating in the building retrofits with the highest EU standards. The program is helping European countries harmonize their national qualification frameworks, develop a reference model for training paths, provide incentives for hiring qualified workers, as well as set up training workshops at the appropriate scale.

The new IEE Build Up Skills 2013 Project “BRICKS - Building Refurbishment with Increased Competence, Knowledge and Skills” (2014-2017) aims at developing tools and methodologies to set up training systems in order to intensify the introduction of Renewable Energy Sources (RES) and improve Energy Efficiency (EE) in the old as well as in the new buildings, to reach Nearly Zero Energy Building (NZEB) stocks by 2020.

*Target groups for programs*

Installers, various trades people, professionals

*Best-practice example of capacity building*

CasaClima (Energy Agency Bozen autonomous province). The Agency offers:

- Training and education to planners, craftsmen, maintainers, builders, blower-door test technicians and infrared heat camera experts
- Certification and regular inspection in the building site during and after construction
- Consulting, coordination, contracting
- Periodical (fairs) and continuous communication (website, magazine). Examples of certified houses are also on the web.

**Section III: Compliance & Enforcement**

*Penalties, incentives and other mechanisms for improving compliance*

*Penalties for non-compliance with energy provisions in codes*
- Fine
- Refusal of permission to construct
- Other: Communication of the name of the defaulting expert to the his/her membership professional association

In Italy, the penalty system is defined by national legislation, but the implementation process is regional. Most of regional bodies refer directly to the national approach.

*Incentives/rewards to go beyond minimum required performance level*

Italy offers a number of incentives for building retrofits that would improve energy efficiency in existing buildings:

- **National Energy Efficiency Fund:** The fund aims to support energy efficiency projects implemented by public authorities, ESCOs and businesses in order to increase energy efficiency of buildings, industrial installations and production processes and to improve efficiency of public services and infrastructure, such as street lighting.

- **Financial instruments for school buildings, social housing and hotels:** To encourage investments in public buildings, in particular in school buildings, Decree Law No 104/2013 and the Economy and Finance Document (DEF) 2014 has enabled Italian Regions take out loans with the European Investment Bank (EIB), the Council of Europe Development Bank, the Cassa Depositi e Prestiti or other banks, with amortisation costs to be paid by the State. The Istituto Nazionale per gli infortuni sul Lavoro – INAIL (National Workers’ Compensation Authority) will budget from 2014 to 2016 EUR 100 million per year for projects to improve the safety and energy efficiency of buildings.

- **Fund for home purchase and/or renovation (Plafond casa):** Article 6 (1)(a) of the Decree Law of 31 August 2013, converted into Law No 124 of 28 October 2013, allocated EUR 2 billion to support access to home-buying loans. The fund finances through mortgage-backed loans purchase of residential properties, preferably belonging to energy classes A, B or C, and/or supports renovation and energy efficiency improvement projects, giving priority to young couples, families with one or more disabled person and large families.

**Tax credits:** One of the most important incentives for the renovation of residential buildings in Italy is the “55% tax credit for energy efficiency improvements in existing buildings”. The measure allows building owners to recover 55% (up to 65% in 2014) of the investment costs (with maximum limits) in 10 years within the income declaration procedure. The programme finances measures such as: renewal or improvement of the efficiency of the heating system, and retrofitting of building envelope components and building renovations works that are able to achieve a building energy performance 20% more efficient than the values set by law. This mechanism will be renewed for the whole 2015 with a tax deduction rate confirmed at 65%.
**Piano Casa**: Piano casa’15 is an economic recovery measure, which since 2009 offers support to Italian regions for improvements of existing residential buildings. While there are no mandatory requirements for energy renovation of existing buildings, regions and municipalities set minimum sustainability requirements as criteria to qualify for receiving subsidies from the Piano Casa programme.

A number of financial incentives are also available at the regional level.

**Other mechanisms to encourage compliance**

At the national level, future publication on EPC certificate information online will encourage compliance and improvement in energy efficiency. A centralized EPC information system is likely to be issued in an upcoming National Decree (complementing Law 90/2013 and to be published in the summer of 2015).

**Compliance assessment**

**Assessments on rate and effectiveness of compliance**

No national assessment, although the national random checks of the most highly rated buildings does provide some indicative information. In general, energy use in these buildings exceeds EPC estimates, which may relate to occupant behavior, plug loads or construction issues. Only a few regions are carrying out these kinds of analysis, but they focus on compliance with EPC requirements, not the building energy code requirements.

**Section IV: Building Materials & Energy Performance Certificates**

**Building materials (e.g. windows, insulation, HVAC, lighting, etc.)**

**Rating building materials**

Italy does not currently have a system for testing, rating and labelling building materials, with the exception of voluntary third party certification¹ and some local best practice², but it is considering how to implement European CE standards at the national level. Under the ICMQ system, the entire building design and construction process, including the materials used, is based on private certification. Bozen/Bolzano also has its own system of testing, rating and labelling building materials using the local KlimaHaus certification system.

**Energy Performance Certificates**

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Building codes and energy performance certificates

EPC was introduced in 2005, and implemented by some regions since 2007-2008 (Lombardy, Emilia Romagna, Piedmont) EPC guidelines were published in 2009 (Decree 59/2009) and followed by most of Italian regions. With the 2015 decrees, all Italian regions will be required to implement EPCs according to a single, unified model. Prior to 2015, only 7 regions/autonomous provinces had adopted their own EPC model and, according to the new Decree, they have a 2-year period from now to adapt to the national one.

An EPC is required when selling or renting a property (building or building unit), when undergoing major renovation and for larger public buildings. The energy performance class has to be displayed in all commercial advertisements.

The EPC must include a set of information and indicators including:
- Overall energy performance of the building in terms of total primary energy and non-renewable primary energy using the respective indices;
- Energy rating calculated by means of the building’s overall energy performance index expressed in non-renewable primary energy;
- Minimum energy efficiency requirements under the law;
- CO₂ emissions;
- Exported energy;
- Recommendations for improving the building’s energy efficiency with proposals for the most effective and cost-effective actions;
- Information such as energy audits and financial incentives.

Existence of national registry database for energy performance certificates at the national level

In Italy, there is no central registry, but regional ones do exist (Abruzzo, Campania, Emilia Romagna, Friuli Venezia Giulia, Liguria, Lombardy, Marche, Piedmont, Sicily, and Trento province). The quality control of the EPCs in Italy is currently being revised with responsibility shifting from the regional to the national level (according to the mentioned upcoming decree that will introduce a National EPC Information System).
Appendix 1. Additional Information

Provided are some sources for the information above as well as links to additional information:

1) A list of entities authorized to provide courses for national energy certification experts:
   http://www.sviluppoeconomico.gov.it/index.php/it/energia/efficienza-energetica/certificatori-energetici?viewType=1&id=2030331&idarea1=1982&idarea2=0&idarea3=0&idarea4=0&andor=AND&sectionid=4,7&andorcat=AND&partebassaType=0&idareaCalendario1=0&MvediT=1&showMenu=1&showCat=1&showArchiveNewsBotton=0&idmenu=3706&directionidUser=0

2) Report by the Thermal-technical Committee (2014), Energy Certification in Italy:


4) Report for European Commission by member states (2013), National EED Implementation:
   http://www.esd-ca.eu%2Freports%2Fnational-implementation-reports%2Fnational-implementation-report-full-document&ei=O5xaVeqlM8ylsQT3n4GoBg&usg=AFQjCNGSUMwCPBrL9cpPvBursBbAldAYsg&bvm=bv.93564037,d.cWc

5) For the 55% tax credit see: http://www.agenziaefficienzaenergetica.it/pubblica-amministrazione/incentivi-e-risorse/detrazioni-fiscali-del-55-65

6) ENEA National Observatory of EE BUILDING Codes in Italian Regions
   http://enerweb.casaccia.enea.it/enearegioni/UserFiles/Efficienza/Edifici/Normativa/normativa.htm

7) Update on the 2015 decrees: