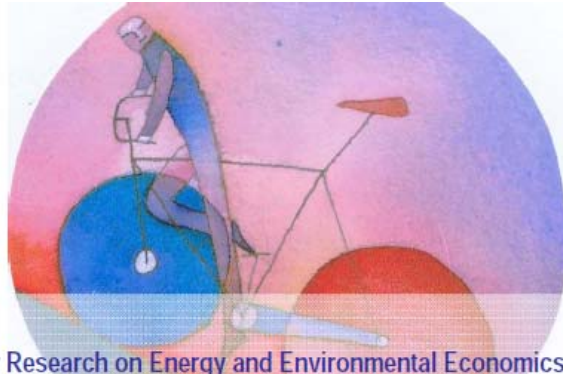


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**Landscape of Energy Efficiency Policy Packages in a
Multi-Level Government System -
National Report for Italy**

Edoardo Croci, Denis Grasso, Tania Molteni, Alessandro Palma

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LANDSCAPE OF ENERGY EFFICIENCY POLICY PACKAGES IN A MULTI-LEVEL GOVERNMENT SYSTEM

D.1.1

**PART OF WORK PACKAGE 1: MAPPING OF ENERGY EFFICIENCY POLICY INSTRUMENTS AND
AVAILABLE TECHNOLOGIES IN BUILDINGS AND TRANSPORT**

NATIONAL REPORT FOR ITALY

DATE

Partner: “*Università Commerciale Luigi Bocconi*”



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ACRONYMS

ABI: Associazione Bancaria Italiana (National Banks Association).

ACEEE: American Council for an Energy Efficient Economy.

AEEG: Italian Regulatory Authority for Electricity Gas and Water.

CIPE: Comitato Interministeriale per la Programmazione Economica (Committee for the Economic Planning)

CNR: Consiglio Nazionale delle Ricerche (National Research Council).

D.I.: Decreto Interministeriale (Inter-ministerial Decree).

D.L.: Decreto Legge (Law Decree).

Dlgs: Decreto Legislativo (Legislative Decree).

D.M.: Decreto Ministeriale (Ministerial Decree).

D.P.R.: Decreto del Presidente della Repubblica (Decree of the President of the Republic).

EE: Energy Efficiency.

ENEA: Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile (Italian National Agency for New Technologies, Energy and Sustainable Economic Development)

EPBD: Energy Performance of Buildings Directive.

ESCO: Energy Service Company.

EU: European Union.

GME: Gestore dei Mercati Energetici (Energy Market operator).

GSE: Gestore dei Servizi Energetici (Energy Service Operator).

L.: National Law.

MATTM: Italian Ministry for the Environment and the Protection of Land and Sea.

MISE: Italian Ministry of Economic Development.

MIT: Italian Ministry of Infrastructures and Transport.

NAP: National Allocation Plan

NEEAP: National Energy Efficiency Action Plan.

NLP: National Logistic Plan

PNIRE: Piano Nazionale Infrastrutturale per la ricarica dei veicoli alimentati ad energia elettrica (National infrastructural plan to set up electric vehicle charging points).

RAEE: Rapporto Annuale sull'Efficienza Energetica (Annual Report on Energy Efficiency).

RENAEL: Rete Nazionale delle Agenzie Energetiche Locali (Italian Network of Local Energy Agency).

SEN: Strategia Energetica Nazionale (National Energy Strategy).

Please note that throughout the report, "SEN, 2013" is used to refer to the following reference: Ministry of Economic Development. (2013). National Energy Strategy 2013. Available at:

http://www.encharter.org/fileadmin/user_upload/Energy_policies_and_legislation/Italy_2013_National_Energy_Strategy_ENG.pdf

Please note that throughout the report, “NEEAP, 2014” is used to refer to the following reference: Ministry of Economic Development. (2014a). Italian Energy Efficiency Action Plan 2014. Available at:

https://ec.europa.eu/energy/sites/ener/files/documents/2014_neeap_en_italy.pdf

EXECUTIVE SUMMARY

Italy has defined challenging energy efficiency objectives to 2020 both in the buildings and transport sectors. Many important energy efficiency targets are already reached. As evidenced in the ACEEE 2014 International Energy Efficiency Scorecard, Italy ranked second at World level in terms of national efforts to improve its energy efficiency levels.

These Italian challenging energy efficiency targets are supported by a wide and comprehensive set of policy packages. These policies, both in the buildings and transport sectors, are subject to a complex governance scheme. In fact Italian energy issues are governed under a system of “concurrent legislative powers”. This means that the Regions have legislative powers over energy matters, except for the fundamental principles, which are determined by the central Government. The application of this constitutional provision has caused considerable difficulty in terms of harmonizing energy efficiency legislation.

Also the local level is very important for energy efficiency promotion both in the buildings and transport sectors. Municipal authorities in particular are responsible of important urban planning instruments deeply affecting the energy efficiency choices:

- Municipal buildings regulations (Regolamenti Edilizi). These planning instruments define compulsory energy efficiency rules for new and existing buildings;
- Traffic Plans and regulation of urban traffic (prohibition to access city centre for the most polluting vehicles, etc.).

However, in the last years there were fruitful legislative interventions aimed at improving the Italian energy efficiency governance. One of the most interesting experiences in energy efficiency governance improvements is related to the creation, among the Ministry of Economic Development, of the National Energy Efficiency Control Room (Cabina di Regia per l’Efficienza Energetica). Established in January 2015, it aims to coordinate all the different stakeholders (both in the public and private sectors) and administration levels (national and regional levels) operating in the Italian energy efficiency market.

At national level, in relation to the buildings sector, the main energy efficiency policy packages could be grouped into 4 main families:

- Minimum energy performance standards for buildings (Regulatory Standards);
- Energy efficiency market instruments (energy savings tradable certificates);
- Tax deductions for improving energy efficiency in buildings;
- Economic incentives for the promotion of energy efficiency technology in private and public buildings.

In relation to the buildings sector, Italy has two international excellences:

- White Certificates. Italy, in 2005, was the first country in the World to adopt such an energy efficiency support scheme. To date, this tool is replicated also in other countries and the White Certificate Italian experience remains a landmark;
- Smart Meters. With more than 90% of total national population with a Smart Meter in their houses, Italy is one of the countries with the widest smart grid in the World.

Also in the transport sector comprehensive and wide policy packages are in place at national level. However, these transport energy efficiency policy packages are less homogeneous compared to buildings policies, and they are strictly related to the adoption in Italy of EU Directives.

1. THE ROLE OF GOVERNANCE AND ENERGY EFFICIENCY POLICY PACKAGES ON THE NATIONAL LEVEL

1.1 POLICY PACKAGES AND POLICY GOVERNANCE IN ITALY

The Italian Energy Efficiency overall strategy is defined in two main national official documents:

- **Italian Energy Efficiency Action Plan (NEEAP)**, first published in 2007 and reviewed in 2011 and 2014;
- **National Energy Strategy (Strategia Energetica Nazionale - SEN)**, launched in 2013 by the Italian Ministry of Economic Development.

The two documents are quite different one from another. In fact, while in the NEEAP the reduction target has been set on the basis of a minimum percentage of savings compared with the reference consumption value, in the SEN the target is calculated as the difference between two possible evolution scenarios of the national energy system:

- The first, known as “No-measure scenario”, maps the evolution of the system in the event that all the energy efficiency support measures are suspended (this evolution includes none of the savings expected under the NEEAP after 2011);
- The second or “SEN Scenario”, instead, charts the system’s evolution under a package of energy efficiency measures (part of which are already included in the NEEAP) (NEEAP, 2014).

The NEEAP, whose first version dates back to 2007 and reviewed in 2011 and 2014, was elaborated by the “Italian National Agency for New Technologies, Energy and Sustainable Economic Development” (ENEA) and includes a series of energy efficiency targets (those related to the 20-20-20 strategy) and policy instruments aimed at achieving such targets¹. Particular attention is dedicated to the new policy measures introduced with the legislative decree 102/2014 (Dlgs. 4 July 2014, n. 102)², which acknowledges the EU Directive 2012/27. In the last NEEAP (2014 version), two main energy efficiency targets are identified (NEEAP, 2014):

- A medium-term target (2020);
- A long-term target up (2050).

The Italian NEEAP is developed in accordance with the guidelines defined in the EU Energy Efficiency Directive and in the “Guidance for National Energy Efficiency Action Plans” (European Commission, 2013). The Italian NEEAP has specific focuses both on buildings and transports, even if these objectives are not defined as compulsory.

The SEN³ instead, launched in 2013 by the Italian Ministry of Economic Development, is a voluntary document aimed to define a common strategy for the future of the Italian energy sector (both tradi-

¹ Available on line at: <http://www.ufficienzaenergetica.enea.it/doc/paee/PAEE-2014-definitivo.pdf>

² <http://www.normattiva.it/do/atto/vediPermalink?atto.dataPubblicazioneGazzetta=2014-07-18&atto.codiceRedazionale=14G00113>

³ Available on line at: http://www.sviluppoeconomico.gov.it/images/stories/normativa/20130314_Strategia_Energetica_Nazionale.pdf

tional and renewable energy sources). Energy efficiency is one of the seven SEN energy priorities (SEN, 2013).

In relation to the medium-term target, Italy aims to reduce **20 Mtoe** of primary energy by 2020 and **15 Mtoe** of final energy by 2020 under the EU Directive 2012/27/EU. The long-term target instead is not defined in the Italian NEEAP. However, an energy efficiency 2050 target is defined in the Italian SEN. Italy's National Energy Strategy (SEN) declares "primary consumption will have to fall in the range of **17-26%** by 2050 compared to 2010, by decoupling economic growth from energy consumption. In particular, efforts in building and transport will be critical" (SEN, 2013).

At national level, a further important document is constituted by the Italian National Logistics Plan (Piano Nazionale della Logistica – NLP) for the period 2011/2020, elaborated in 2010 within the Ministry of Infrastructures and Transportation⁴. This plan represents a synthesis of the policy interventions, which are defined by 10 strategic guidelines and 51 actions articulated in norms and regulations, to be implemented across all the different transport and logistic sectors. The document also includes the evaluation for each intervention considered by the plan (NLP, 2010).

In addition, the 6th National Communication of Italy (6NC)⁵ submitted to the United Nations Framework Convention on Climate Change (UNFCCC) by the Italian Ministry of the Environment, Land and Sea⁶ (MATTM) and reporting the status of Convention on Climate Change, also reports energy efficiency targets and strategies at national level both in the transport and building sector.

It is also worth mentioning the national Annual Report (Notification of methodology) under Article 7 of Directive 2012/27/EU on energy efficiency obligation schemes. This national report⁷ concerned the progress towards meeting the national 2020 targets for improving energy efficiency. Last version of this report was elaborated in June 2014 by Italian Ministry of Economic Development, Directorate-General for electricity, market, renewable energy, energy efficiency and nuclear energy.

Finally, the document 17/2013 of the Italian Inter-ministerial Committee for the Economic Planning (CIPE, 2013), updates the national GHG reduction plan for the period 2003-2010 elaborated by the MATTM in collaboration with the Ministry of Economics and Finance (CIPE, 2002), which constitutes the guidelines of the Italian strategy for the Kyoto protocol.

1) Building Sector

Objectives

The Italian NEEAP, since its first edition in 2007, identifies the residential sector as the key contributor to the national energy efficiency targets. In the 2007 and 2011 NEEAPs in fact, two-thirds of the total Italian energy savings were entrusted to the residential and services sectors (De Paoli, 2013).

In the 2014 NEEAP, residential and services sectors are still key contributors to the national energy efficiency target, even if transport and industrial sectors are more deeply committed compared to the 2007 and 2011 NEEAP editions. Based on the expected energy savings defined in the 2014 NEEAP, two main targets are defined for the Italian residential sector for 2020 (NEEAP, 2014):

⁴ <http://www.mit.gov.it/mit/site.php>

⁵ http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/ita_nc6_resubmission.pdf

⁶ <http://www.minambiente.it/>

⁷ Available on line at: https://ec.europa.eu/energy/sites/ener/files/documents/article7_en_italy.pdf

- Residential **final energy consumption** target to 2020: **3,67 Mtoe/year** expected saving;
- Residential **primary energy consumption** target to 2020: **5,14 Mtoe/year** expected saving.

With reference to the primary energy savings target of the residential sector, the 2014 NEEAP highlights as “for the residential, services and industry sectors, the overall savings were estimated to be electricity for more than one fifth, and heat for the rest (assumption supported by the monitoring performed on the incentive instruments)” (NEEAP, 2014).

The same energy efficiency targets for the residential sector were defined in the National Energy Strategy (SEN). The SEN defines energy efficiency targets only in terms of final energy consumption. For the residential sector, the SEN defines a final energy consumption target to 2020 of **3-4 Mtoe/year** expected savings.

The Italian NEEAPs underline the key role of energy efficiency measures in the residential sector as a contributor for a better and stronger Italian economic development. As highlighted in the 2014 NEEAP document, “in these years of crisis, the building sector has managed to remain afloat thanks to the positive contribution of building maintenance (ordinary and, especially, extraordinary), which has partly offset the sector’s steep drop which started in 2008. Nowadays, two thirds of investments in the building sector relate to renovations of existing buildings, showing a by now well-settled trend towards the recovery of the building stock”. As the building sector is one of the most important Italian economic sectors (ANCE, 2012), the energy efficiency policy packages contribute to strengthen general national economic growth.

In its introduction, the 2014 NEEAP highlights also that “Italy’s energy prices are on an average higher than those of its European competitors”. By underlining this aspect in a national energy efficiency plan, it is possible to see the national legislator’s purpose to reduce energy consumption in the building sector not only as an energy efficiency measure, but also as a measure to reduce families’ energy bills and national energy poverty. This is particularly important for Italy, as between 5 and 20 per cent of households was in Energy Poverty in 2012 (Banca d’Italia, 2014).

Also the Italian National Energy Strategy (SEN) underlines the strong link existing between energy efficiency policies in the residential sector and more general objectives. In particular, the SEN underlines the important role of energy efficiency policies in:

- Reducing energy costs;
- Reducing emissions;
- Reducing environmental impact;
- Improving the safety and independence of energy supply;
- Supporting economic growth.

Synthesis of policy packages

In Italy, comprehensive policy packages targeting the buildings sector are in place. Italian energy efficiency policies focus more on the energy supply side than the demand side. This “supply side focus” is strictly related to political reasons. National authorities have often preferred supply side energy efficiency policies, as their results are generally more evident and faster to be obtained compared with energy demand side policies (De Paoli, 2014).

However, the main national energy efficiency policy packages have also tackled the energy demand side. One of the sectors in which energy demand is most targeted is the buildings sector. In fact several policies and instruments were adopted in Italy over the past three years to encourage final customers to change their habits in energy use. These policies are: incentives, grants or subsidies, the

provision of information, flagship/exemplary projects, workplace activities and education on energy saving.

Moreover, Italy is the leading country in the World for energy demand-side management in the building sector (NEEAP, 2014). In fact “Italy is the world’s leading country in the spread of smart-metering systems which are an essential component for the management/reduction of energy demand (demand-side management)” (NEEAP, 2014). Smart metering is a remote metering system based on a network of sensors for real-time monitoring of electricity, gas and water consumption. More than 90% of Italian families have a smart meter in their houses (NEEAP, 2014).

The Italian NEEAPs set out a number of measures and incentive schemes designed to achieve energy savings in all energy-using sectors. Energy efficiency measures concerning the building sector, in accordance with the 2014 NEEAP classification, can be grouped in four main policy components:

- **Minimum energy performance standards for buildings** (Regulatory Standards);
- **The energy efficiency certificates scheme** (White Certificates);
- **Tax deductions** for improving energy efficiency in buildings;
- **Economic incentives** for the promotion of energy efficiency technologies in private and public buildings (Thermal Account and National Energy Efficiency Fund for the public authorities).

As evidenced in the SEN energy efficiency policies summary (Fig.1), the buildings sector (both residential and services) is targeted by all the four main Italian energy efficiency instrument categories (SEN, 2013).

Fig. 1 Energy-efficiency instruments available in the different sectors of intervention.

Sector	Main instruments				Relevance
	Normative/ Standards	White Certificates (TEE)	Incentives (Heating Account)	Tax relief	
Residential	New ¹	✓	✓	✓	✓
Services	New ¹	✓	✓	✓	✓
Public Sector	New ¹	✓	✓	-	✓
Industry	-	✓	-	-	-
Transport	✓	✓	-	-	-

Source: SEN 2013

Target groups

According to the Italian main buildings national energy efficiency policies, the main target groups are:

- Residential buildings (new and existing);
- Public buildings (new and existing);
- Services buildings (new and existing);
- Industrial buildings (new and existing).

The energy efficiency policies and measures are designed to take into account the potential of all final energy consumption sectors in energy saving and energy efficiency. In particular, increasing ener-

gy efficiency in the buildings sector is one the main target of both the NEEAP and the SEN. In fact, as highlighted in the 2014 NEEAP, the buildings sector (residential and service) is expected to achieve a final energy saving of about **4,9 Mtoe/year** by 2020 (5,10 Mtoe/year for the industry sector and 5,50 Mtoe/year for the transport sector). This is a very relevant energy efficiency contribution required from the building sector at national level.

The Regional and local levels are not directly targeted by energy efficiency specific targets. In fact a compulsory **regional burden sharing system** was foreseen only for renewable energies targets (Energy Strategy Group, 2014).

Moreover, the Italian 2014 NEEAP emphasizes the importance of the promotion of energy efficiency in public buildings of national, regional and local authorities. In fact, as evidenced in the NEEAP energy efficiency forecast to 2020, the energy upgrading of public buildings at all levels will contribute to an energy saving of **458 GWh/year** from 2014 to 2020.

Fig. 2 Total energy savings expected by the energy efficiency improvements of existing public buildings by 2020.

Year	Floor area subject to the obligation to improve energy efficiency (m ²)	Total Consumption (GWh/y)	Savings (GWh/y)							Total savings by 2020 (GWh/y)
			2014	2015	2016	2017	2018	2019	2020	
2014	412,919	62.8	17.0	17.0	17.0	17.0	17.0	17.0	17.0	119.1
2015	407,090	61.9		16.8	16.8	16.8	16.8	16.8	16.8	100.7
2016	401,633	61.1			16.6	16.6	16.6	16.6	16.6	82.8
2017	389,977	59.3				16.1	16.1	16.1	16.1	64.3
2018	378,671	57.6					15.6	15.6	15.6	46.8
2019	367,705	55.9						15.2	15.2	30.3
2020	357,067	54.3							14.7	14.7
Total	2,715,061	413.0	17.0	33.8	50.4	66.4	82.0	97.2	111.9	458.7

Source: ENEA using data from the Public Domain Agency

In relation to end-users, the Italian NEEAP 2014 foresees a series of information and training campaigns directed to public sector employees (in particular in schools), banks and financial institutes, SMEs and the general public.

Governance framework

The general role of energy efficiency policies in Italy is related to the achievement of the European "20-20-20 targets" by 2020.

Italy has a long-standing experience with energy efficiency policies. In the first Italian "National Energy Programme" (Programma Energetico Nazionale) dated 1975, although the main focus was on the energy-supply side and nuclear power promotion, there was an attachment dedicated to energy savings, with a specific focus on buildings sector. This document constituted the base for the first Italian

law on energy efficiency in buildings dated 1976⁸. The importance of energy efficiency was strengthened in the following National Energy Programmes, in particular in the third edition (1981) with a specific law on energy savings and in the 1988 edition where energy saving was identified as one of the first Italian energy objectives. Thus Italy, since the first '80s, has shown a relevant policy activity aimed at promoting energy efficiency for the buildings sector.

Italy's first-moving on energy efficiency policies allowed to define some successful measures and policies earlier than the European legislation framework was established. It is the case of the White Certificates mechanism, adopted in Italy during 2004-2005, first country in the World to adopt such a scheme (NEEAP, 2007). Today, the Italian energy efficiency regulations are totally compliant with European legislation, despite some difficulties in the adoption of some Directives into the national legislative context (ENEA, 2015).

The Italian energy efficiency governance model in the buildings sector is very complex (De Paoli, 2013), as several national and regional actors are involved both in defining general strategies and setting technical and regulatory schemes. In fact, national laws entrust the management of different energy efficiency sectorial aspects to different political bodies at different scales, on the basis of the European subsidiarity principle.

In Italy, the energy efficiency policy in the building sector involves 4 of the 16 Italian ministries:

- **Ministry of the Environment and Protection of Land and Sea (MATTM).** MATTM⁹ (Ministero dell'Ambiente e della Tutela del Territorio e del Mare) is responsible for sustainable development, protection of territory, pollution and industrial risks, international protection of the environment, appraisal of environmental impact, nature conservation, waste and cleanup, and protection of seas and inland waters. Its main roles in the buildings sector are related to the definition of the overall national buildings energy efficiency strategies/objectives and to the setting of the general buildings energy efficiency legislative frameworks. Moreover MATTM has an important role in defining and promoting national energy efficiency in buildings awareness campaigns;
- **Ministry of Economy and Finance (MEF).** MEF¹⁰ (Ministero dell'Economia e delle Finanze) is responsible "for national economic, financial and budget policy, planning of public investment, coordinating public expenditure and verifying its trends, revenue policies and tax system. It operates the State's public land and heritage, land register and customs; it plans, coordinates and verifies operations to foster economic, local and sectoral development, and is responsible for setting out cohesion policies. The Ministry performs a supervisory role over entities and activities as well as performing such functions as concern its relations with supervisory and regulatory authorities"¹¹. Its main role in building sector is to define, develop and manage economic and financial supporting schemes aimed to promote and strengthen energy efficiency measures in the buildings sector. Moreover it collaborates with others Ministries to the definition of the overall national building energy efficiency strategies and objectives;

⁸ L. 30 April 1976, n. 373

⁹ <http://www.minambiente.it/>

¹⁰ <http://www.tesoro.it/english-corner/index.html>

¹¹ <http://www.tesoro.it/english-corner/index.html>

- **Ministry of Economic Development (MISE).** MISE¹² (Ministero dello Sviluppo Economico) is responsible for a wide range of policies, including economic development and cohesion, energy and mineral resources, telecommunications, internationalization, tourism and business incentives. Its main roles in the building sector are related to the definition of buildings energy efficiency technical regulation schemes and to monitoring the performances of implemented policies. Moreover it collaborates with other Ministries to the definition of the overall national buildings energy efficiency strategies and objectives;
- **Ministry for regional affairs** (ministry without a dedicated budget)¹³. This Ministry (Ministro per gli affari regionali) is under the direct control of the National Government. Its main role in the building sector is related to the coordination of the energy efficiency policies across the national and regional levels.

Italian Ministries, in their activities related to the promotion of energy efficiency in the building sector, are supported by two national technical authorities:

- **Energy Service Operator (GSE)¹⁴.** GSE (Gestore Servizi Energetici) is the state-owned company which promotes and supports the diffusion of renewable energy sources in Italy. In particular, GSE fosters sustainable development by providing support for renewable electricity generation and by taking actions to build awareness of environmentally-efficient energy uses. GSE plays a crucial role in Italian building energy efficiency promotion, since it represents the managing authority of two of the most important financial supporting schemes: White Certificates¹⁵ and Thermal Account¹⁶;
- **Italian Regulatory Authority for Electricity Gas and Water (AEEG)¹⁷.** AEEG (Autorità per l'energia elettrica, il gas e il sistema idrico) is "an independent body established under Law 481 of 14 November 1995 to regulate and control the electricity and gas sectors"¹⁸. Its regulatory powers include the setting of tariffs, as well as the definition the standard of service quality and the technical and economic conditions governing access and interconnections to the networks for those services where technical, legal or other constraints would interfere with normal competitive market conditions. It also controls the ability of the market for protecting the interests of users and consumers.

Beside the national level, Regional and municipal authorities also play a central role in defining and implementing Italian buildings energy efficiency policies. The main local actors in buildings energy efficiency policies definition and management are:

¹² <http://www.sviluppoeconomico.gov.it/index.php/en/>

¹³ <http://www.affariregionali.it/>

¹⁴ <http://www.gse.it/en/company/Pages/default.aspx>

¹⁵ The Decree of 28 Dec. 2012 provides that the activities of management, evaluation and certification of the savings associated with energy efficiency projects under the white certificates schemes shall be transferred from AEEG to GSE as of 3 Feb. 2013. See: <http://www.gse.it/en/White%20Certificates/Pages/default.aspx>

¹⁶ http://www.gse.it/en/Heating_Cooling/Pages/default.aspx

¹⁷ <http://www.autorita.energia.it/it/inglese/about/presentazione.htm>

¹⁸ <http://www.autorita.energia.it/it/inglese/about/presentazione.htm>

- **Regional authorities**¹⁹. Italy has 20 different regional authorities²⁰. Regional authorities play a crucial role on the implementation of Italian building energy efficiency policies. In fact, Regions have specific competencies on building energy efficiency planning and technical regulation. In particular each Region has its own “Regional Energy Plan” with a specific section dedicated to energy efficiency in the building sector. Moreover Regional authorities have specific competencies in defining and controlling the building energy certifications. In particular, the main competencies of regional authorities are related to technical definition and monitoring of regional energy efficiency certification schemes, training and accreditation of operators realizing energy efficiency certifications, monitoring and control (through inspections) of buildings energy efficiency certifications and qualified energy efficiency operators and collection of policy implementation data;
- **Provincial authorities/Metropolitan cities**. Italy had more than 100 provincial authorities but they were abolished in 2014²¹ and replaced by 10 “Metropolitan cities” authorities. These provincial/metropolitan authorities do not assume a specific role in defining energy efficiency policy in buildings. Some provincial authorities have adopted provincial energy efficiency plans with a specific focus on buildings. Other provincial authorities, like in the Milan Provincial case study analyzed in HERON report 1.2, played a crucial role in defining innovative energy efficiency financial mechanisms;
- **Municipal authorities**. The role of Italian municipalities in implementing buildings energy efficiency policies and measures is also important. Municipal authorities are responsible of the definition of the buildings regulation in more than 8.000 Italian municipalities. Moreover, Italian municipalities are the most active at European level in the Covenant of Mayors. According to the data provided by the Covenant of Mayors at 30 July 2015, 2.598 Italian municipalities result with an approved Sustainable Energy Action Plan (SEAP).

Italian Regions can define their buildings energy efficiency regulation mechanisms and schemes, therefore each of them has its energy efficiency laws in the buildings sector. As this proliferation of buildings regulatory schemes represented an important barrier to energy efficiency in the sector (Energy Strategy Group, 2013), in June 2015 the Italian Parliament approved 3 norms to create a common national buildings regulatory framework²².

In order to create a strong and clear dialogue among the different levels of responsibilities, several coordination mechanisms within, between and across different levels of government were defined. These coordination mechanisms can be grouped in the following 4 categories:

¹⁹ <http://www.fficienzaenergetica.enea.it/l-fficienza-energetica-nelle-regioni/>

²⁰ Among these regions, there are five autonomous regions with special statute (namely Sardinia, Sicily, Trentino-Alto Adige/Südtirol, Aosta Valley and Friuli-Venezia Giulia) with specific legislative competencies also in the buildings energy efficiency regulation.

²¹ On April, 3rd 2014 the Italian Chamber of Deputies approved Law n.56/2014, which transformed Italian provinces into institutional bodies of second level with no dedicated budgets and specific roles.

²² <http://www.regionieambiente.it/energia/fficienza/2121-pubblicati-i-decreti-di-completamento-del-quadro-normativo-sullefficienza-energetica-degli-edifici.html>

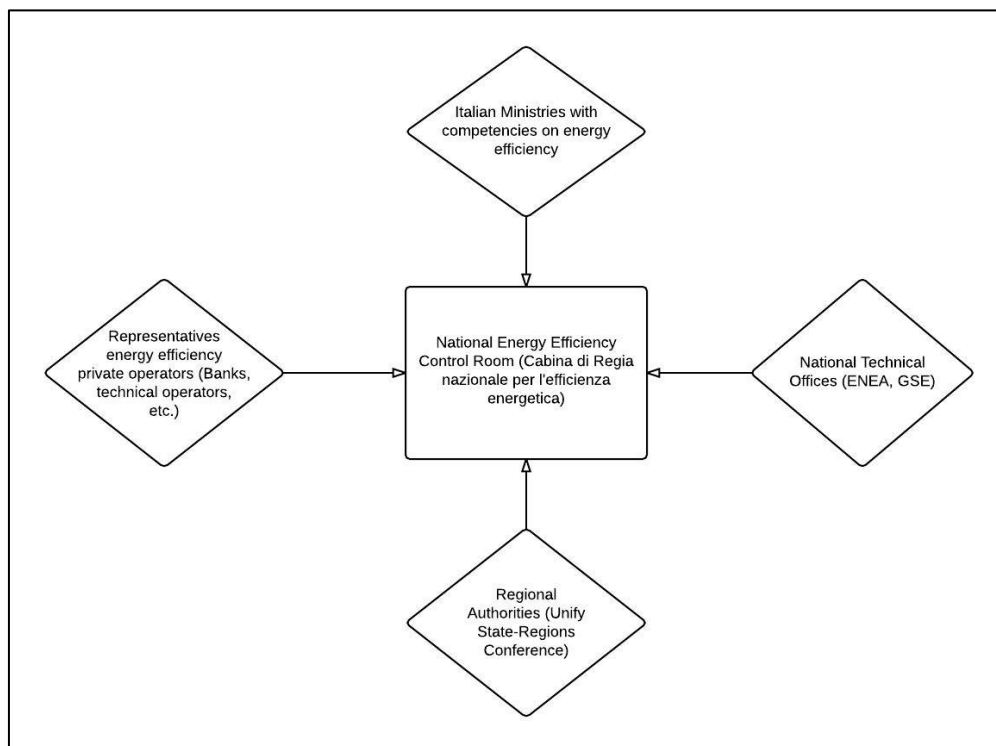
- Horizontal coordination mechanisms at national level among different ministries and among political and technical offices (“National Energy Efficiency Control Room” “Cabina di Regia per l’efficienza energetica”);
- Vertical coordination mechanisms among national and regional levels (“Unified State-Regions Conference” “Conferenza Stato Regioni”);
- Vertical coordination among regional and local levels (for example in the consultation processes set by Regional authorities during the preparation of their Regional Energy and Environmental Plans);
- Coordination among public authorities and private sector (Thematic tables at all levels).

Two main energy efficiency coordination mechanisms have been defined at national level:

- **National Energy Efficiency Control Room** (Cabina di Regia per l’efficienza energetica);
- **Unified State-Regions Conference** (Conferenza Unificata Stato Regioni).

Launched in January 2015 by the Ministry of Economic Development (D.I. 9 January 2015), the “National Energy Efficiency Control Room” aims to coordinate all the different stakeholders operating on energy efficiency in Italy. The most innovative aspect of this new national coordination office is the involvement of all the national ministries with competencies on energy efficiency, the national energy efficiency technical offices, the representatives of the Regions and representatives of the private sector as banks, energy efficiency operators and other interested subjects with competences on energy efficiency themes. Two of the main missions of the “National Energy Efficiency Control Room” are to manage the National Energy Efficiency Fund and to define a general plan for an energy efficiency renewal of public buildings at national and regional levels.

Fig. 3 Scheme summarizing the general functioning of the “National Energy Efficiency Control Room” (Cabina di Regia per l’efficienza energetica).



Source: IEFE-Bocconi University elaboration.

The Unified State-Regions Conference (Conferenza Unificata Stato-Regioni) instead is a permanent institution set in 1997²³ in order to improve the dialogue among national, regional and local levels. This institutional body is not dedicated to energy efficiency, as it has competences on several normative aspects. However, since Regions have several exclusive competences on energy efficiency, the Unified State-Regions Conference has often been used to define and set energy efficiency policies and measures.

At national level, there are two main technical organizations with a key role in the definition of Italian buildings energy efficiency policies and measures. These key national technical organizations are:

- **Organization for New Technologies, Energy and the Environment (ENEA).** ENEA²⁴ (Agenzia Nazionale per le Nuove Tecnologie, l’Energia e lo Sviluppo Economico Sostenibile) is the national energy agency. ENEA performs research activities and provides agency services in support to public administrations, public and private enterprises, and citizens. Specifically, ENEA is concerned with energy efficiency, renewable energy sources and nuclear energy;
- **National Research Council (CNR).** CNR²⁵ (Consiglio Nazionale delle Ricerche) is the largest public research institution in Italy, the only one under the Research Ministry which performs

²³ http://www.statoregioni.it/home_UNI.asp?CONF=UNI

²⁴ <http://www.enea.it/en>

²⁵ http://www.cnr.it/sitocnr/Englishversion/brochureCNR_ENG.pdf

multidisciplinary activities. Its role is to promote innovation and competitiveness of the national industrial system, to promote the internationalization of the national research system as well as to provide technologies and solutions to emerging public and private needs.

These two technical organizations are steadily consulted by national public authorities in order to define energy efficiency policies and measures. At regional and local level, this technical support to public authorities is provided by several regional and/or provincial/local energy agencies. Regional, provincial and local energy agencies are grouped into the national RENAEL association²⁶ (Italian network of Local Energy Agencies). Based on ManagEnergy²⁷ project data, in Italy there are several regional, provincial and local Energy Agencies.

There are also non-governmental and market actors with relevant roles in promoting energy efficiency in the building sector. Main non-governmental and market actors are:

- ESCOs. Italy already has a number of certification schemes for operators and services in the field of energy efficiency and one specifically for ESCOs. As highlighted in the 2014 NEEAP, “the ESCO sector in Italy is somewhat diverse, with 1.900 units registered by the Italian Regulatory Authority for Electricity Gas and Water (AEEG) in 2011. In actual fact, the companies operating routinely in the sector (in particular within the White Certificates scheme) are just 15% of the total (about 390 operators)”(NEEAP, 2014);
- Financial institutions. Italian financial institutions are also involved in the energy efficiency governance framework. Financial institutions, through their national association ABI (Associazione Bancaria Italiana)²⁸, have a supporting and consulting role in the “National Energy Efficiency Control Room”;
- Expert/industrial associations. Italian energy consultants are involved in energy efficiency national governance models. In particular national energy managers, through FIRE association²⁹, the federation which looks after and represents the professional interests of Italian Energy Managers, play an relevant role in encouraging the rational use of energy in Italy;
- Consumer and environmental associations. Environmental associations (Legambiente³⁰, etc.) and some consumers associations conduct over years several public awareness campaigns aimed at promoting energy efficiency among final energy consumers. Specific campaigns³¹ were dedicated to energy efficiency in the building sector.
- National electricity and gas distributors. Several national electricity and gas distributors (ENEL, ENI and several Multi-utilities) have launched several awareness campaigns aimed at promoting energy efficiency in the building sector.

²⁶ <http://www.renael.net/ITA/chisiamo.aspx>

²⁷ http://www.managenergy.net/countries/26#name_regional

²⁸ <https://www.abi.it/Pagine/default.aspx>

²⁹ <http://www.fire-italia.org/fire-in-english/>

³⁰ <http://www.legambiente.it/>

³¹ See for example the campaign “Tutti in Classe A”. More information available on: <http://www.legambiente.it/contenuti/dossier/tutti-classe-A>

These non-governmental and market actors, as well as sub-national authorities, were largely involved in the designing and setting of the Italian Energy Efficiency Action Plan and National Energy Strategy. The National Energy Strategy, for instance, was the outcome of “an extensive public consultation, through a wide involvement of all the stakeholders. During the two months of public consultation, meetings have been organized at the Ministry of Economic Development with more than 100 stakeholders among institutions, industry associations, social partners and trade unions, research and study centers” (SEN, 2013).

2) Transport Sector

Objectives

Since the first NEEAP in 2007, the energy efficiency effort required from the transport sector has steadily grown. This growing effort is deeply related to the high level of energy inefficiency of the Italian transport sector (NEEAP, 2014). Based on the 2014 NEEAP energy efficiency expected savings to 2020, the biggest national effort in terms of national final energy savings has been requested to the transport sector. Also in terms of primary energy savings the contribution required from the transport sector is high.

The 2014 NEEAP national long-term energy efficiency targets for the transport sector are:

- Transport final energy consumption target to 2020: **5.50 Mtoe/year** expected saving;
- Transport primary energy consumption target to 2020: **6.05 Mtoe/year** expecting saving.

Another long-term general target regarding energy efficiency in the transport sector is defined in the 2013 National Energy Strategy (SEN). The SEN sets that “primary energy consumption will have to fall in the range of **17-26%** by **2050** compared to 2010, by decoupling economic growth from energy consumption. In particular, efforts in building and transport will be critical”.

It is important to mention, as highlighted in the 2014 NEEAP, that “in the transport sector, the entire savings were assumed to have been made in the form of oil products”.

Many transport sectorial objectives have been launched in Italy in order to be compliant with European legal provisions on the theme (ENEA, 2015). For example, all the Italian legislation related to CO₂ cars’ emissions is compliant with the European Regulation 333/2014.

There are several other transport energy efficiency objectives defined in some sectorial national planning instruments:

- **Electrification of the transport sector (2050 target).** The “National infrastructures plan to set up electric vehicle charging points”³² (PNIRE) defines some medium and long-term objectives. The PNIRE foresees “a substantial increase in the degree of electrification, which will almost double by 2050, reaching at least **38%**, particularly in electricity and transport”. This will contribute achieving the decarbonisation goals in the Italian transport sector;
- **Renewable energy targets in the transport sector (2020 target).** The Italian legislative decree 28/2011 (Dlgs. 3 March 2011, n.28) on renewable energy promotion defines that “the share of energy from renewable sources in all forms of transport has to be in 2020 at least **10%** of final energy consumption of the transport sector in the same year”;
- **More efficient logistic sector.** Italy’s National Plan for Logistics 2011-2020 defines several qualitative 2020 targets for the national logistic sector. In particular, it defines sectorial and specific targets regarding the strengthening of national transport infrastructures, the reduction of travels with empty lorries, etc.;
- **Economic development.** As the people and freights transport sector represents a significant quota of Italian GDP³³, the relaunch of the transport sector through a more efficient organization of the infrastructures and institutional frameworks is seen at national level as a fun-

³² http://www.mit.gov.it/mit/mop_all.php?p_id=14588

³³ http://www.mit.gov.it/mit/mop_all.php?p_id=23271

damental way to improve Italian economic development. See for example the 2015 National Strategic Plan for ports and logistics and the strong focus on economic development of the country (Ministry of Transport, 2015).

Synthesis of policy packages

In Italy there are comprehensive policy packages targeting supply as well as demand in the transport sector. Transport supply targets are often set in terms of improvements of transport infrastructures (Energy Efficiency Watch, 2013) and/or in terms of local transport services activated.

Transport demand targets instead are often defined in terms of reduction of private travels and freights transferred in a defined time period (ENEA, 2011). The reduction of person and freights demand is perceived as a priority in the Italian legislative framework but at the moment no specific targets are in place.

The components of Italian policies concerning the three main transport dimensions are:

- **Vehicle efficiency dimension.** This dimension is fully considered by the Italian policy framework. In Italy, CO₂ vehicles' emissions standards are in place (compliant with European prescriptions), municipalities have set several limits to polluting vehicles acceding to city centers (Euromobility, 2014) and there are strategic plans (at national and regional levels) and funds aimed to renew public transport fleets;
- **Travel efficiency dimension.** This dimension is often analyzed in the Italian transport policy framework. The increase of efficiency of travels in the logistic sector for example, is perceived as one of the first objectives in the National Logistic Strategic Plan, as several lorries travel with no or few freights. Also in local public transport services the improvement of the quality and efficiency of single travels is seen as a priority in order to attract more people on public transport services and to improve the economics of services (ISFORT, 2014);
- **System efficiency dimension.** Despite the significant national transport infrastructures delays compared to other European countries (Ministry of Transport, 2013), Italy has set several thematic Plans and funds to improve the transport infrastructures and the general system efficiency dimension.

Target groups

Italian transport policies have two main target groups:

- Passengers (both private and public transports);
- Freight transport (at different scale, from urban to national dimension).

In particular the main target groups of Italian energy efficiency policies in the transport sector are the owners of most pollutant vehicles, the public transport services with low rate of efficiency, managing authorities of main Italian transport infrastructures and public authorities.

In relation to end-users, the Italian NEEAP 2014 foresees a series of information and training campaigns directed to public sector employees (in particular in schools), banks and financial institutes, SMEs and the general public.

Moreover, as highlighted in the 2013 publication "Energy Efficiency in Europe, Assessment of Energy Efficiency Action Plans and Policies in EU Member States" (Energy Efficiency Watch, 2013), the

transport sector has a marginal role in the Italian Energy Efficiency Action Plan (NEEAP), as very few measures concerning this sector are described in the NEEAP.

Governance framework

The Italian transport governance is extremely complicated as the competencies are fragmented among national, regional, provincial and local levels. Several relevant actors are involved in the formulation/delivery/evaluation of the transport energy efficiency policy instruments. A central role in transport national regulations is played by the Ministry of Transport and by the National Transport Authority settled in 2013. At sub-national level, the regional authorities have specific competencies on public transport services management. At local level municipalities have specific competencies on implementing solutions for more efficient people and freights transport (through their mobility and traffic plans).

At national level, three ministries are involved in promotion of energy efficiency policies and measures in the transport sector:

- **Ministry of Infrastructure and Transport (MIT).** MIT³⁴ (*Ministero delle Infrastrutture e dei Trasporti*) is responsible for the planning and management of all Italian transport infrastructures (motorways, roads, ports, airports, railways). The main role of MIT in the transport sector is related to the definition of overall public transport and logistics national strategies and planning instruments, especially for urban transport schemes. In particular MIT main duties in the transport sector are:
 - Planning the infrastructural networks and the works for the modal integration between different transportation systems;
 - Navigation and maritime transport, supervision on ports, maritime government property, safety navigation and inland water transport;
 - Land transport, traffic and land transports safety;
 - Air transport, discipline and rules, address, supervision of the sector institutions.
- **Ministry of Economic Development (MISE).** MISE³⁵ (*Ministero dello Sviluppo Economico*) is responsible for a wide range of policies, including economic development and cohesion, energy and natural resources, telecommunications, internationalization, tourism and business incentives. Its main role in the transport sector is in defining economic and financial supporting schemes aimed at promoting energy efficiency in people and freights transport solutions. Moreover, it collaborates with other ministries in defining overall national transport strategies and plans.
- **Ministry of the Environment and Protection of Land and Sea (MATTM).** MATTM³⁶ (*Ministero dell'Ambiente e della Tutela del Territorio e del Mare*) is responsible for sustainable development, protection of territory, pollution and industrial risks, international protection of the environment, appraisal of environmental impact, nature conservation, waste and clean-

³⁴ <http://www.mit.gov.it/mit/site.php>

³⁵ <http://www.sviluppoeconomico.gov.it/index.php/en/>

³⁶ <http://www.minambiente.it/>

up, and protection of seas and inland waters. In the transport sector, MATTM collaborates with other in-charge ministries in defining and preparing overall transport national energy efficiency strategies and measures.

At present, no coordination mechanisms purposely regarding the transport sector are in place. The Italian Ministry of Transport, in the 2015 “Strategic plan for the development of ports and logistics”³⁷, expresses the need to simplify the national transport governance model (Ministry of Transport, 2015) and to define new and more efficient coordination mechanisms among the different bodies with specific competences on transports.

At national level, there are other relevant actors with important legislative and advisory roles. The main actors participating to the national transport governance system are:

- **National Transport Authority.** The main role of the National Transport Authority³⁸ (Autorità di regolazione dei trasporti) is to promote and protect high competition levels in the following sectors: Railways, ports, airports, toll motorways, passenger and freights transport. Even though the National Transport Authority does not have specific competencies for improving the energy efficiency of Italian transport, its measures could indirectly contribute to increase the efficiency level of people and freights transport services;
 - **Port Authorities.** Italy has 23 Port Authorities, controlled by the Port Authorities General Command under the competence of the Ministry of Transport. They are fully responsible of the management activities of the port. Even though Port Authorities do not have specific competencies on improving the energy efficiency of Italian ship transport, their measures could indirectly contribute to the improvement of the efficiency levels of ships transport services;
 - **Airport managing authorities.** Italian airports are public properties whose management is given in concession to private operators. Many of these private dealers of Italian airports adopt energy efficiency measures in their structures;
 - **Organization for New Technologies, Energy and the Environment (ENEA).** ENEA performs research activities and provides agency services in support to public administrations, public and private enterprises, and citizens. Specifically, ENEA is concerned with energy efficiency, renewable energy sources, nuclear energy.
- National Research Council (CNR).** CNR³⁹ is the largest public research institution in Italy, the only one under the Research Ministry performing multidisciplinary activities . Its role is to promote innovation and competitiveness of the national industrial system, to promote the internationalization of the national research system, to provide technologies and solutions to emerging public and private needs.

In Italy regional and local authorities play a crucial role in promoting more sustainable and energy efficient transport. In particular:

³⁷ <http://www.mit.gov.it/mit/site.php?p=cm&o=vd&id=4027>

³⁸ <http://www.autorita-trasporti.it/>

³⁹ <http://www.cnr.it/sitocnr/Englishversion/Englishversion.html>

- **Regional authorities.** Italian Regions have exclusive competencies on local public transports. Funds for local public transport services are established at national level. These national funds are used for the functioning of the local transport services which in Italy are commonly managed through concessions mechanisms;
- **Provincial/Metropolitan City authorities.** Provincial authorities have specific competencies on planning and management of extra-urban transport services. These activities include also the management of public tenders for the entrustment of these services to private operators. Moreover some provincial authorities have a Provincial transport plan aimed to improve the provision of public transport services at provincial level;
- **Municipal authorities.** In Italy municipalities play a crucial role in promoting energy efficiency in people and freights transport sector. In particular municipal authorities could act on improving the energy efficiency of transport through:
 - **Urban Traffic Plan (PUT).** The PUT is a mandatory plan for any municipality with more than 30.000 inhabitants. These plans set several measures for energy efficiency gains of public and freights transports. Moreover, as evidenced in OECD report⁴⁰, “most local Italian administrators have not addressed the problem of urban goods transport. The current Guidelines for Urban Traffic Plans, the planning instrument for urban transport in Italy which was introduced in 1986, does not propose strategies for urban goods transport, although the relevance of freight transport is recognized”;
 - **Sustainable Urban Mobility Plans (SUMPS).** Many Italian municipalities have adopted a Sustainable Urban Mobility Plan;
 - **Urban traffic regulation measures.** Municipal authorities have the power to introduce congestion charge (as for example in Milan), introduce restricted access areas to the city center, fix vehicle’s pollutant emissions limits, etc.

⁴⁰ OECD (2003), Delivering the Goods. 21st Century Challenges to Urban Goods Transport. <http://www.internationaltransportforum.org/pub/pdf/03DeliveringGoods.pdf>

1.2 NATIONAL PROGRAMMES AND INITIATIVES

The main national programmes and initiatives targeting energy efficiency in the buildings sector are summarized in the following table.

Table 1 Policy instruments for energy efficiency in the building sector in Italy

Policy instruments for energy efficiency in the building sector in Italy	
Regulatory policy instruments	<ul style="list-style-type: none"> · Energy performance in buildings. Transposition of EPBD and EPBD recast EU directives (Dlgs. 19 August 2005, n. 192⁴¹, modified with Dlgs. 30 May 2008, n. 115⁴²; L. 3 August 2013, n. 90)⁴³; · Transposition of the Energy Efficiency Directive 2012/27/EU (Dlgs. 4 July 2014, n. 102)⁴⁴; · Rules for implementing the national energy plan in the field of rational use of energy, energy saving and development of renewable energy sources (L. 9 January 1991, n. 10)⁴⁵; · Regulation on Accreditation of Italian Energy Certifiers (D.P.R. 16 April 2013, n. 75)⁴⁶; · Green Public Procurement. Minimum Environmental Criteria for several appliances related to buildings, in particular public lighting and energy services for buildings (D.M.10 April 2013, n. 102)⁴⁷; · Energy labeling of households appliances (Dlgs. 28 June 2012, n. 104)⁴⁸; · Simplification/exemption of authorization procedures for some energy efficiency measures (municipal level);

⁴¹ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2005-08-19;192!vig=

⁴² www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2008-05-30;115!vig=

⁴³ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2013-08-03;90!vig=

⁴⁴ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2014-07-04;102!vig=

⁴⁵ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:1991-01-09;10!vig=

⁴⁶ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.del.presidente.della.repubblica:2013-04-16;75!vig=

⁴⁷ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legge:2013-08-31;102!vig=

⁴⁸ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2012-06-28;104!vig=

	<ul style="list-style-type: none"> · Regional Regulatory Schemes on energy efficiency in buildings (regional level); · Municipal buildings regulations (municipal level).
Dissemination and awareness	<ul style="list-style-type: none"> · Pilot Projects on multi service smart metering (Deliberation 19 September 2013, 393/2013/R/gas of the AEEG)⁴⁹; · Transparent billing methods (Deliberation 18 November 2008 – ARG/com 164/08 of the AEEG)⁵⁰; · National Green Procurement Plan (“Piano d’Azione Nazionale per il GPP”) (D.M.10 April 2013, n. 102)⁵¹; · ENEA website “Obiettivo efficienza energetica” (Target: energy efficiency)⁵²; · Several dissemination/awareness campaigns on specific energy efficiency themes (all experiences are mapped in the NEEAP – National Energy Efficiency Action Plan 2014)⁵³; · Buildings energy efficiency voluntary certification schemes and environmental voluntary certification schemes (Casa Clima⁵⁴, Protocollo Itaca⁵⁵, LEED⁵⁶, etc.); · Sustainable Energy Action Plans (SEAPs) (municipal level).

⁴⁹ <http://www.autorita.energia.it/allegati/docs/13/393-13.pdf>

⁵⁰ <http://www.autorita.energia.it/allegati/docs/08/164-08arg.pdf>

⁵¹ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legge:2013-08-31;102!vig=

⁵² <http://www.energiaenergetica.enea.it/>

⁵³ <http://www.energiaenergetica.enea.it/politiche-e-strategie-1/politiche-e-strategie-in-italia/paee/paee-2014.aspx>

⁵⁴ <http://www.klimahaus.it/en/climatehouse/1-0.html>

⁵⁵ <http://www.itaca.org/index.asp>

⁵⁶ <http://www.gbcitalia.org/page/show/sistemi-di-verifica-nuova-pagina>

Economic policy instruments	<ul style="list-style-type: none"> · Thermal Account⁵⁷ (D.M. 28 December 2012)⁵⁸; · Tax deductions (introduced with L. 27 December 2006, n. 296⁵⁹, namely the Budget Law 2007 – “Legge finanziaria 2007”, and renewed several times with modifications); · White Certificates (or Energy Efficiency Certificates) scheme and Obligation for national energy distributors (D.M. 20 July 2004)⁶⁰; · Kyoto Fund (introduced with L. 27 December 2006, n. 296⁶¹, namely the Budget Law 2007 – “Legge finanziaria 2007”, and implemented through following acts); · National Fund for Energy Efficiency (“Fondo Nazionale per l’Efficienza Energetica”) (Dlgs. 4 July 2014, n. 102)⁶²; · Measures for the energy efficiency in schools (“Misure per l’efficientamento energetico degli edifici scolastici”) (D.I. 14 April 2015, n. 66)⁶³; · Fund for home purchase and/or renovation (“Plafond Casa”) (Cassa Depositi e Prestiti) (D.L. 31 August 2013, n. 102⁶⁴, converted into L. 28 October 2013, n. 124⁶⁵).
Capacity building	<ul style="list-style-type: none"> · Integrated plan for the uptake of energy efficiency (“Piano integrato di diffusione dell’efficienza energetica”, PIDEE) (Dlgs. 4 July 2014, n. 102)⁶⁶; · General conference on Energy Efficiency (“Stati Generali Efficienza Energetica”⁶⁷ (ENEA);

⁵⁷ Incentive mechanism for small projects designed to increase energy efficiency and generate thermal energy from renewable sources.

⁵⁸ http://www.gse.it/it/Conto%20Termico/GSE_Documenti/DM_28_DICEMBRE_2012_CONTO_TERMICO.PDF

⁵⁹ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2006-12-27;296!vig=

⁶⁰ http://www.sviluppoeconomico.gov.it/images/stories/normativa/DM_Certificati_bianchi_28_dicembre_2012.pdf

⁶¹ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2006-12-27;296!vig=

⁶² www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2014-07-04;102!vig=

⁶³ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2015-05-07;66!vig=

⁶⁴ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legge:2013-08-31;102!vig=

⁶⁵ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2013-10-28;124!vig=

⁶⁶ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2014-07-04;102!vig=

	<ul style="list-style-type: none"> · ENEA training platform and e-learning courses for experts on energy efficiency in buildings⁶⁸.
Policy instruments for the promotion of energy services	<ul style="list-style-type: none"> · Definition of ESCOs and set-up of a voluntary national certification scheme for certified ESCOs (Dlgs. 30 May 2008, n. 115)⁶⁹.
Research and Development and BAT promotion	<ul style="list-style-type: none"> · National Electric System Research (ENEA, CNR and RSE carry out R&D activities on urgent and strategic issues which have results for the benefit of the national electric system users as a whole); · National “Smart Cities and Communities and Social Innovation” funds (2012 and 2013) (Director Decree 5 July 2012, N.391/Ric)⁷⁰; · National prize for energy efficiency measures (GSE’s “Premio Efficienza Energetica”)⁷¹; · ENEA reports on energy efficiency best available technologies⁷².

The main national programmes and initiatives targeting energy efficiency in the transport sector are summarized in the following table.

Table 2 Policy instruments for energy efficiency in the transport sector in Italy

Policy instruments for energy efficiency in the transport sector in Italy	
Planning Instruments	<ul style="list-style-type: none"> · Italy's National Plan for Logistics 2011/2020 (Piano Nazionale della Logistica 2011-2020) (Ministry of Transport note prot. 567/CGA 30 may 2012)⁷³; · National Strategic Plan for Ports and Logistic (Piano

⁶⁷ <http://www.statigeneralefficienzaenergetica.it/>

⁶⁸ <http://www.formazione.enea.it/>

⁶⁹ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2008-05-30;115!vig=

⁷⁰ <http://attiministeriali.miur.it/anno-2012/luglio/dd-05072012.aspx>

⁷¹ <http://www.gse.it/it/Conto%20Energia/Fotovoltaico/Premio%20efficienza%20energetica/Pages/default.aspx>

⁷² <http://www.enea.it/en>

⁷³ http://www.mit.gov.it/mit/mop_all.php?p_id=12956

	<p>Strategico Nazionale della Portualità e della Logistica) (Ministry of Transport 2015)⁷⁴;</p> <ul style="list-style-type: none"> · National infrastructure plan to set up electric vehicle charging points (Piano Nazionale Infrastrutturale per la ricarica dei veicoli alimentati ad energia elettrica, PNIRE) (L. 7 August 2012, n.134)⁷⁵; · National Action Plan for Intelligent Transport System (Piano di Azione Nazionale sui Sistemi Intelligenti di Trasporto) (DL 12 February 2014, n.44)⁷⁶; · Promotion of use of biomethane in transports. (Dlgs. 3 March 2011, N.28, Article 8)⁷⁷; · Five years bus fleet renewal plan (Piano quinquennale per il rinnovo del parco mezzi del trasporto passeggeri su gomma) (L 27 December 2014, N.147)⁷⁸; · Contract for the development of the national rail infrastructures (Contratto di Programma 2012-2016. Parte Investimenti) (Report to Italian Senate 3 February 2015 n.21)⁷⁹; · Sustainable Urban Mobility Plans, SUMP (Piani Urbani per la Mobilità Sostenibile); · National Green Procurement Plan (Piano d’Azione Nazionale per il GPP) (D.M. 11 April 2008, updated with D.M. 10 April 2013)⁸⁰; · Sustainable Energy Action Plan, SEAPs (Piani d’Azione per l’Energia Sostenibile).
Regulatory instruments	<ul style="list-style-type: none"> · Vehicle Certification. Vehicle CO₂ emissions standards (several national laws compliant with European policies on theme); · Renewable energy in transport sector. (Dlgs. 3 March 2011, N.28)⁸¹;

⁷⁴ http://www.mit.gov.it/mit/mop_all.php?p_id=23923

⁷⁵ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2012-08-07;134!vig=

⁷⁶ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2014-03-04;44!vig=

⁷⁷ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2011-03-03;28!vig=

⁷⁸ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2014-10-10;147!vig=

⁷⁹ <http://documenti.camera.it/leg17/dossier/Pdf/TR0255.pdf>

⁸⁰ http://www.minambiente.it/sites/default/files/archivio/allegati/GPP/PAN_GPP.pdf

⁸¹ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2011-03-03;28!vig=

	<ul style="list-style-type: none"> · Urban Traffic Plans (Piano Urbano del Traffico) (Dlgs. 30 April 1992, N.285)⁸²; · Obligation for national fuel producers to input into consumption 1% of biofuels of total traditional fuel. (L.11 March 2006, n. 81)⁸³; · National quality standards for biofuels (AEEG Resolution 160/2012/R/GAS)⁸⁴; · Minimum Environmental Criteria for the acquisition of vehicles for road transport (Criteri Minimi Ambientali per l'acquisizione dei veicoli adibiti al trasporto su strada) (D.M 8 May 2012)⁸⁵; · Limits to polluting vehicles (Regional legislations).
Economic instruments	<ul style="list-style-type: none"> · Government subsidies for the purchase of low-emission vehicles (D.L. 10 February 2009, n. 5, converted into law by L. 9 April 2009, n.33⁸⁶; L. 7 August 2012, n.134⁸⁷); · Incentives for the promotion of biofuels in transport sector (Dlgs. 3 March 2011, N.28)⁸⁸; · Ad-hoc fund of Ministry of Infrastructure and Transport on PNIRE implementation 2013-2015 (L. 7 August 2012, n.134)⁸⁹; · Ministry call in favour of the Regions to fund a network of electric vehicle charging points (L. 7 August 2012, n.134)⁹⁰; · National electric car sharing project in cities (co-financed by the Ministry of Environment)⁹¹; · National funds for the development of underground

⁸² www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:1992-04-30;285!vig=

⁸³ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2006-03-11;81!vig=

⁸⁴ <http://www.autorita.energia.it/allegati/docs/12/160-12.pdf>

⁸⁵ <http://www.minambiente.it/pagina/il-piano-dazione-nazionale-il-gpp-pan-gpp>

⁸⁶ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legge:2009-02-10;5!vig=

⁸⁷ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2012-08-07;134!vig=

⁸⁸ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2011-03-03;28!vig=

⁸⁹ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2012-08-07;134!vig=

⁹⁰ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2012-08-07;134!vig=

⁹¹ <http://www.icscarsharing.it/main/>

	<p>railways (Defined in annual Italian Budget Laws);</p> <ul style="list-style-type: none"> · Funds related to the “Five years bus fleet renewal plan” (L. 27 December 2013, N.147⁹²); · Structural fund on thematic area “sustainable movement of people and goods” (EU 2014-2020 Structural Funds); · Road tax (tax exemption for electric vehicles and discount on car assurance) and regional schemes for tax exemption for GPL and methane vehicles. (Regional legislations); · National funds for local public transports (indirect effects for example in fleets renewal, etc.). (Defined in annual Italian Budget Laws); · Funding for energy efficiency, renewable energy and bike-sharing (L. 24 December 2007, N.244)⁹³.
Information and awareness instruments	<ul style="list-style-type: none"> · Guide to fuel saving and decreasing CO₂ emission by cars (Guida sul risparmio di carburanti e sulle emissioni di anidride carbonica delle autovetture)⁹⁴ (Published by MATTM, MIT and MISE); · National Logistics Platform UIRNET⁹⁵ (Sistema Nazionale della Logistica Integrata e Intermodalità) (D.M 20 June 2005, N.18T⁹⁶); · Events and initiatives within the European Sustainable Mobility Week; · National observatory on local public transports policies Osservatorio nazionale sulle politiche per il trasporto pubblico locale (L. 24 December 2007, N.244)⁹⁷.
Policy instruments for Research and	<ul style="list-style-type: none"> · Design and implementation of a Green Wheel bicycle

⁹² www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2013-12-27;147!vig=

⁹³ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2007-12-24;244!vig=

⁹⁴ http://www.sviluppoeconomico.gov.it/images/stories/documenti/Guida_auto_2014.pdf

⁹⁵ <https://www.uirnet.it/uirnet/>

⁹⁶ https://www.uirnet.it/uirnet/resources/cms/documents/Decreto_Ministeriale_18T_del_20.06.2005.pdf

⁹⁷ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2007-12-24;244!vig=

Development	(Initiative of Ministry of Environment); <ul style="list-style-type: none"> · National “Smart Cities and Communities and Social Innovation” funds 2012 and 2013 (Director Decree 5 July 2012, N.391/Ric)⁹⁸; · National technological maritime platform (Piattaforma Tecnologica Nazionale Marittima) (Dlgs. 21 November 2005, N.284)⁹⁹.
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Horizontal measures

There are several horizontal measures affecting both the buildings and transport sectors. Horizontal measures indirectly affecting the improvement of energy efficiency in the building sector are:

- Green Public Procurement;
- Improvement of national, regional and local public authorities budgets and/or reduction of their functioning costs (Spending Review);
- Promotion of renewable energies in new and existing buildings;
- Urban planning instruments, in particular in Italy municipal buildings regulations (Regolamenti Edilizi) often identify specific energy efficiency rules for new and existing buildings.

Horizontal measures indirectly affecting the improvement of energy efficiency in the transport sector are:

- Spending review conducted by central authorities and regarding regional and local public authorities managing public transport services;
- Promotion of renewable energies in all the sectors included in the promotion of transport sustainable fuels.

1.3 CONCLUSIONS AND LESSONS LEARNED OF OTHER PROJECTS ABOUT THE PERFORMANCE OF THE NATIONAL POLICY PACKAGES FOR ENERGY EFFICIENCY

International Energy Efficiency Scorecard

In 2011, the “American Council for an Energy-Efficient Economy” (ACEEE) ranked Italy third at World level, after the United Kingdom and Germany, in terms of national effort to improve energy efficiency levels (NEEAP, 2014). In 2014 Italy improved its ranking position in the ACEEE International Energy Efficiency Scorecard. In fact Italy ranked second among the most advanced world economies. The ranking, that involves 16 economies representing together 80% of world gross domestic product and

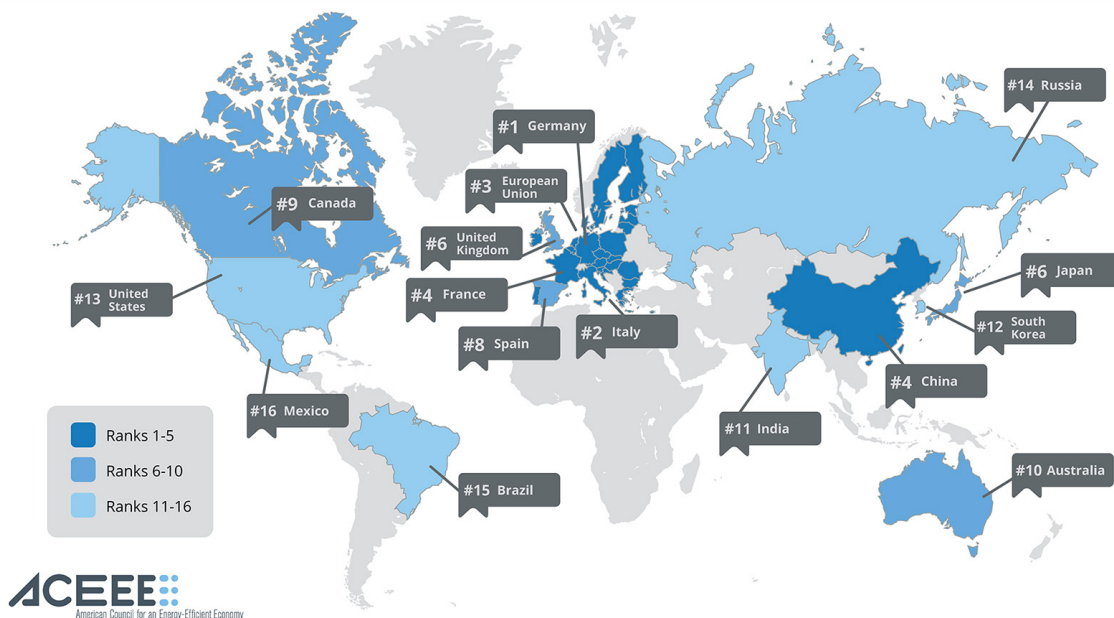
⁹⁸ <http://hubmiur.pubblica.istruzione.it/web/ricerca/smart-cities-and-communities-and-social-innovation>

⁹⁹ www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2005-11-21;284!vig=

accounting for 71% of global energy consumption, is led by Germany, whereas Italy holds the record of energy efficiency in the transportation area.

Fig. 4 ACEEE 2014 International Energy Efficiency Scorecard.

2014 International Energy Efficiency Scorecard



Source: ACEEE 2014

Germany has the highest overall score, with 65 out of 100 possible points. The top-scoring countries in each category are: China in buildings, Germany in industry, Italy in transportation, and a three-way tie between France, Italy, and the European Union in national efforts (ACEEE, 2014).

ODYSSEE-MURE

Based on the ODYSSEE-MURE high impact/high number of applicants criteria¹⁰⁰, these are the 5 most effective Italian energy efficiency policies:

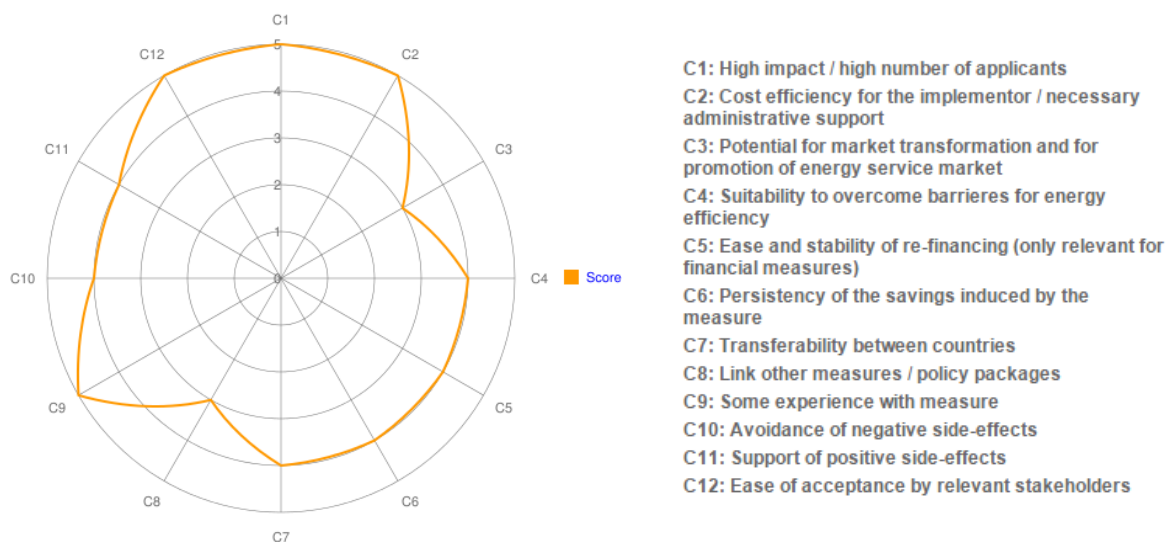
- White Certificates: market based instruments promoting energy efficiency (ODYSEE-MURE scoring: 5)
- Energy Performance of buildings: design norms for building shell and thermal equipments (ODYSEE-MURE scoring: 4)
- EU-related: Energy Performance of Buildings (Directive 2002/91/EC) - Energy Performance of Buildings (ODYSEE-MURE scoring: 3)
- Financial package for old vehicles scrapping (ODYSEE-MURE scoring: 3)

¹⁰⁰ <http://www.measures-odyssee-mure.eu/successful-detail-measures.asp>

- Fiscal incentives for energy savings in the household sector: Ecobonus 2014 and tax deduction for renovations and appliances (ODYSEE-MURE scoring: 2)

Based on the ODYSSEE-MURE overall energy efficiency evaluation, White Certificates are the most Italian successful energy efficiency policy.

Fig. 5 White Certificates score for each criterion. Radar graph



Source: ODYSSEE-MURE.

As evidenced in the ODYSSEE-MURE analysis of White Certificates, the policy performed very well both in terms of high impacts at national level and in terms of cost efficiency of the measure. Also in all the other criteria White Certificates perform very well.

Energy Efficiency Watch

According to the Italy's Report elaborated by the Energy Efficiency Watch¹⁰¹ (EEW), "some parts of the Italian NEEAP remain unsatisfactory, which has also been recognised by the assessment of interviewed domestic experts. The NEEAP assessment shows that Italian energy efficiency can be considered extensive, although the lack of a long-term target is noticeable. The involvement of non-governmental and market actors, the existence of both a national and regional energy agency and the white certificate scheme are identified as positive elements. The interviewed experts, on the contrary, are far more critical regarding the progress of Italian policy. More than 80 per cent of the interviewees see no or little progress in the last three years. Almost 90 per cent of the interviewees con-

¹⁰¹ The Energy-Efficiency-Watch project aims to portray the progress made in the implementation of energy efficiency policies across the European Union. Under the framework of this project, an expert survey on the implementation of energy efficiency policies in all 27 Member States was conducted. The project also screens the National Energy Efficiency Action Plans in order to highlight strengths and weaknesses of national energy efficiency policy packages. The Energy-Efficiency-Watch project is coordinated by EUFORES. The project partners are eceee, Energy Cities, FEDARENE, Upper Austrian Energy Agency, Wuppertal Institute and Ecofys. For further details, see: <http://www.energy-efficiency-watch.org/index.php?id=5>

sider Italian energy-efficiency to be of low ambition or only ambitious in few sectors. More than 70 per cent of the survey participants believe that Italy will fail to or barely meet its target” (EEW, 2013). Sectoral evaluation shows that policies in the building sector performed much better than those targeting the transport sector, this latter showing a poor and unbalanced mix of policy instruments (Fig. 6 and Fig. 7).

Fig. 6 Evaluation by EEW for the building sector.

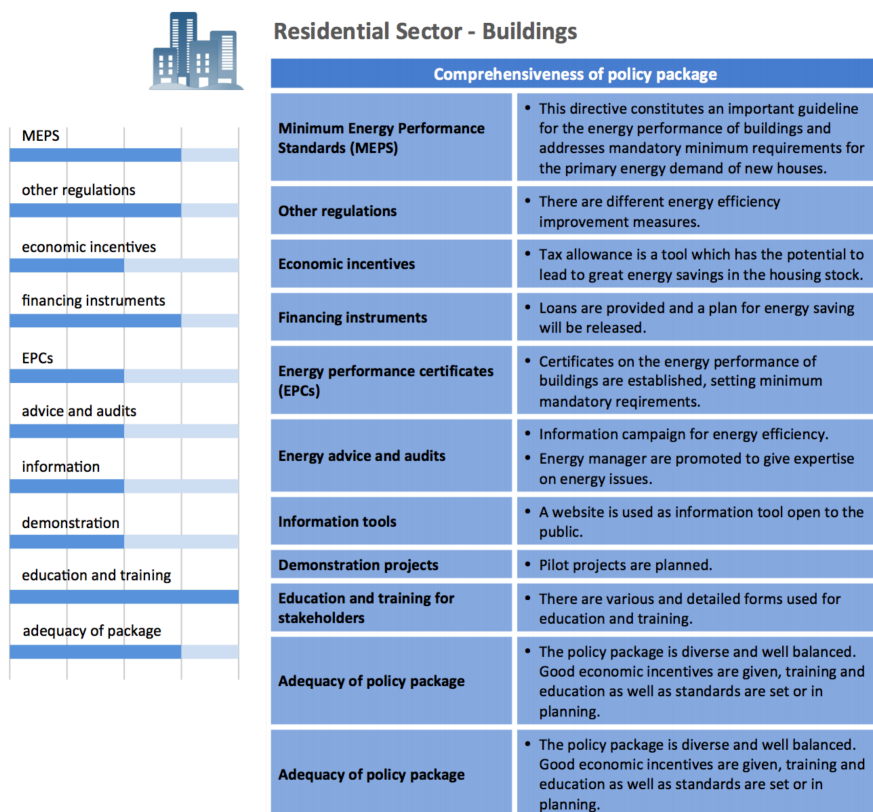
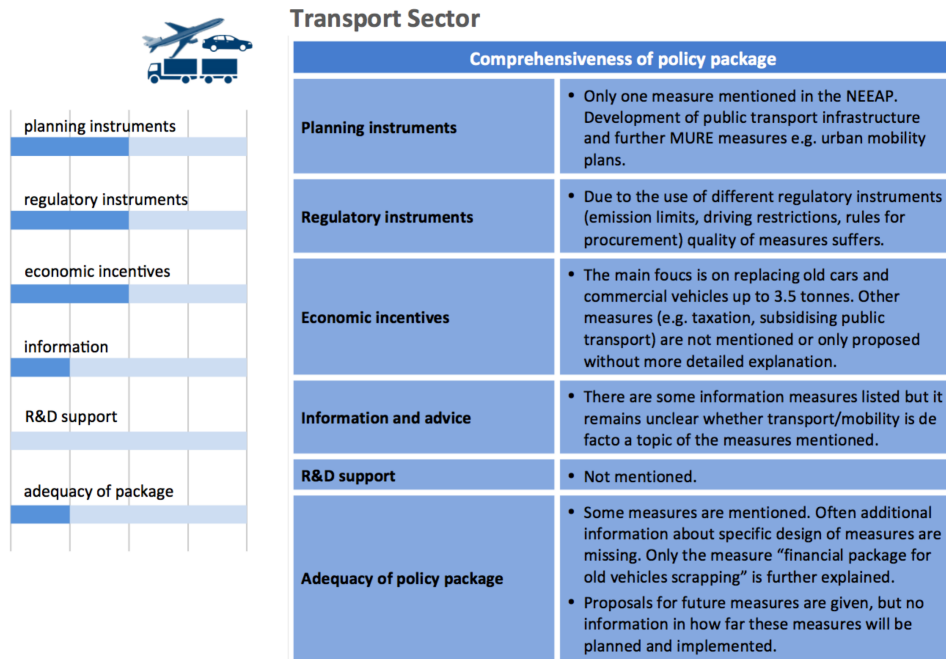


Fig. 7 Evaluation by EEW for the transport sector.



OECD. Environmental Performance Review. Country report. Italy 2013. Assessment and Recommendations¹⁰²

OECD, in its Italian country report 2013, highlights the relevant results reached by the Italian energy efficiency policy, mainly in the building sector. OECD shows a mature energy efficiency policy framework, important energy savings results reached and the cost-effectiveness.

“Italy has introduced a number of regulatory measures and economic instruments to promote energy efficiency, including tax incentives and a trading mechanism. These measures have contributed to energy savings above the intermediate target set by the national Energy Efficiency Action Plan, mainly in regard to electricity used by the residential sector. Progress in the service and transport sectors has been more modest and below expectations, underlining the need for additional efforts. Analysis suggests that energy efficiency measures have been cost-effective, with benefits (in terms of avoided energy costs) well above the costs borne by energy users and tax payers. The market for energy efficiency certificates (white certificates, or WCs) has been the most cost-effective measure. It could be further expanded and reinforced. The effectiveness of the current incentive mechanisms would also benefit from more complete and consistent implementation of the certification of building energy performance, which is currently uneven across regions”.

The main Italian energy efficiency problem is related to the governance model. This is too complex and instable and it will require significant adjustments.

¹⁰² <http://www.oecd.org/env/country-reviews/EPR%20Assessment%20and%20recs%20ITALY%202013.pdf>

“Despite progress, Italy’s renewables and energy efficiency policies have lacked a general long-term vision. Management of the incentive systems for energy efficiency and renewables involves a number of different agencies and institutions, which results in co-ordination difficulties and increasing transaction costs. There has been a multitude of overlapping measures, which have also changed several times within a few years. This has created unnecessary complexity and regulatory uncertainty, although recent measures have addressed some of these problems”.

2. INTERACTION BETWEEN THE NATIONAL AND THE SUB-NATIONAL LEVELS

In Italy, energy issues are governed under a system of “concurrent legislative powers”, as defined in the Constitution - Title V. This means that the Regions have legislative powers over energy matters, except for the fundamental principles, which are determined by the central Government. The application of this constitutional provision causes a considerable difficulty in terms of harmonizing legislation (SEN, 2013), with growing numbers of disputes being heard by the Constitutional Court (SEN, 2013). Moreover, a corollary of this law is the more extensive role entrusted to the Regions in administrative matters. As a result, the authorization for any given energy project requires the agreement of the Region concerned, even for works of national interest and not just for those of regional and local interest (SEN, 2013).

For all these reasons, as highlighted in the SEN, “the achievement of the energy efficiency targets - as well as for renewable energy – needs, as a prerequisite, the organic collaboration and coordinated action between the State and the local governments, as for the widespread nature of interventions as for the allocation of functions”. In fact, “potential savings are very broad and only a careful action of local government can give rise to them, such as in the fields of local transport and mobility, public lighting, buildings, district heating”.

The main functions of the national level in the definition of buildings and transport energy efficiency policies and measures are:

- Defining the overall energy efficiency objectives and strategies;
- Defining energy efficiency technical regulation;
- Monitoring the results of policies and measures;
- Implementing national dissemination campaigns;
- Defining economic and supporting schemes to promote and strengthen energy efficiency (only Ministry of Economy and Finance).

In Italy, also the regional level has a central role in energy efficiency policies in the buildings and transport sector. The main roles of Italian Regions in the buildings energy efficiency legislative framework are:

- Technical definition and monitoring of regional energy efficiency certification schemes;
- Training and accreditation of operators realizing energy efficiency certifications;
- Monitoring and control (through inspections) of buildings energy efficiency certifications and qualified energy efficiency operators;
- Cadastre of heating plants;
- Collection of data.

Regarding the buildings sectors, Italian Regions can define their buildings energy efficiency regulation mechanisms and schemes, therefore each of them has its energy efficiency laws in the buildings sector. As this proliferation of buildings regulatory schemes could constitute an important barrier to

achieve energy efficiency in the sector, in June 2015 the Italian Parliament approved some norms to create a common national framework¹⁰³.

Also the local level is particularly active and important in the definition and implementation of energy efficiency policies. First of all, municipal authorities are responsible for the definition of the buildings regulation, one of the most important tools for the improvement of energy efficiency in the buildings sector. Moreover Italian municipalities are the most active at European level in the Covenant of Mayors. In fact, based on Covenant of Mayors data on 30 July 2015, there are 2.598 Italian municipalities with an approved Sustainable Energy Action Plan (SEAP).

In conclusion it is possible to affirm that in Italy all the policy levels are deeply involved and particularly active in energy efficiency. All the policy levels are important in the definition and implementation of energy efficiency policies and measures. Regions in particular, as evidenced in the previous analysis, are strongly supporting the national level in the definition of energy efficiency policies and measures through the Unified State-Region conference and the National Energy Efficiency Control Room.

Also non-governmental and market actors, as well as sub-national authorities, were largely involved in the designing and setting of the Italian Energy Efficiency Action Plan (NEEAP) and the National Energy Strategy (SEN). In fact, these documents were the outcome of “an extensive public consultation, through a wide involvement of all the stakeholders. During the two months of public consultation, meetings have been organized at the Ministry of Economic Development with more than 100 stakeholders among Institutions, industry associations, social partners and trade unions, research and study centers”. In this case the involvement of non-governmental and market actors occurred through specific public consultation processes.

It is worth noting that ENEA provides detailed information on the status and nature of policy instruments in force across all the Italian regions¹⁰⁴. In addition, within the ENEA’s website regional administrations can access the “Regional Energy Information System” through which it is possible to collect energy-economy data at regional and sub-regional level useful for urban planning.

¹⁰³ <http://www.regionieambiente.it/energia/efficienza/2121-pubblicati-i-decreti-di-completamento-del-quadro-normativo-sullefficienza-energetica-degli-edifici.html>

¹⁰⁴ Detailed information on each region are available on line at: <http://www.energiaenergetica.enea.it/l-efficienza-energetica-nelle-regioni/>

REFERENCES

ACEEE (2014), Executive summary. The 2014 international energy efficiency Scorecard. URL: <http://aceee.org/files/pdf/summary/e1402-summary.pdf>

ANCE (Associazione Nazionale Costruttori Edili) (2012), Osservatorio congiunturale sull'industria delle costruzioni. URL: <http://www.ance.it/docs/docDownload.aspx?id=6739>

Banca d'Italia (2014), Energy Poverty in Italy. URL: <https://www.bancaditalia.it/pubblicazioni/qef/20140240/index.html?com.dotmarketing.htmlpage.language=1>

CIPE (2002), Piano nazionale per la riduzione delle emissioni di gas responsabili dell'effetto serra - 2003-2010. URL: http://www.cipecomitato.it/it/documenti/bozza_Piano_finale.pdf

CIPE (2013), Aggiornamento del piano di azione nazionale per la riduzione dei livelli di emissione di gas a effetto serra. (Delibera n. 17/2013). URL: http://www.cipecomitato.it/it/il_cipe/delibere/download?f=E130017.pdf

De Paoli (edited by) (2014), Efficienza energetica: governance, strumenti e mercato. Fondazione Energy Lab. Ediplan Editrice, Milano

ENEA (2011), Quaderno. Efficienza Energetica nei Trasporti. URL: <http://www.enea.it/it/comunicare-la-ricerca/documenti/quaderni-energia/trasporti.pdf>

ENEA (2015), Rapporto Annuale Efficienza Energetica 2015 (RAEE 2015). URL: <http://www.enea.it/it/produzione-scientifica/pdf-volumi/raee-2015.pdf>

Energy Efficiency Watch (2013), Energy Efficiency in Europe, Assessment of Energy Efficiency Action Plans and Policies in EU Member States.

Energy Strategy Group (2013), Energy Efficiency Report. L'efficienza energetica in Italia: soluzioni tecnologiche ed opportunità di business nell'industria, terziario e la Pubblica Amministrazione.

Energy Strategy Group (2014), Energy efficiency report. Energy intelligence, gestione del rischio e modelli di finanziamento per i progetti di efficienza energetica

Euromobility (2014), Osservatorio Mobilità Sostenibile in Italia. Indagine sulle principali 50 città italiane. Edizione 2014. URL: <http://www.euromobility.org/osservatorio-2014/>

European Commission (2013), Guidance for National Energy Efficiency Action Plans. establishing a template for National Energy Efficiency Action Plans under Directive 2012/27/EU of the European Parliament and the Council. URL: https://ec.europa.eu/energy/sites/ener/files/documents/20131106_swd_guidance_neeaps.pdf

International Energy Agency (IEA) (2009), Innovations in multi-level governance for energy efficiency. URL: https://www.iea.org/publications/freepublications/publication/mlg_final_web.pdf

ISFORT (2014), Il trasporto pubblico locale. La ricerca dell'efficienza attraverso le riforme. URL: http://www.isfort.it/sito/ricerca/TrasportoPubblico/Documenti/Oss-Tpl_03-2014.pdf

Ministry of Economic Development (2013), Italy's National Energy Strategy: For a more competitive and sustainable energy. URL: http://www.encharter.org/fileadmin/user_upload/Energy_policies_and_legislation/Italy_2013_National_Energy_Strategy_ENG.pdf

Ministry of Economic Development. (2014). Italian Energy Efficiency Action Plan 2014. URL: https://ec.europa.eu/energy/sites/ener/files/documents/2014_neeap_en_italy.pdf

Ministry of Transport (2013), Piano Nazionale della Logistica 2011/2020. URL: http://www.mit.gov.it/mit/mop_all.php?p_id=12956

Ministry of Transport (2015), Piano Strategico Nazionale della portualità e della logistica. URL: http://www.mit.gov.it/mit/mop_all.php?p_id=21913

OECD (2003), Delivering the Goods. 21st Century Challenges to Urban Goods Transport. URL: <http://www.internationaltransportforum.org/pub/pdf/03DeliveringGoods.pdf>

OECD (2013), Environmental Performance Review. Country report. Italy 2013. Assessment and Recommendations. URL: <http://www.oecd.org/env/country-reviews/EPR%20Assessment%20and%20recs%20ITALY%202013.pdf>

Website (last visit: July 2015)

<http://www.autorita.energia.it/it/inglese/about/presentazione.htm>

<http://www.regioneambiente.it/energia/efficienza/2121-pubblicati-i-decreti-di-completamento-del-quadro-normativo-sullefficienza-energetica-degli-edifici.html>

http://www.sviluppoeconomico.gov.it/images/stories/normativa/Decreto_interministeriale_9_gennaio_2015_Cabina_efficienza_energetica.pdf

http://www.statoregioni.it/home_UNI.asp?CONF=UNI

<http://www.enea.it/en>

http://www.cnr.it/sitocnr/Englishversion/brochureCNR_ENG.pdf

<http://www.renael.net/ITA/chisiamo.aspx>

http://www.managenergy.net/countries/26#name_regional

<http://www.fire-italia.org/fire-in-english/>

http://www.mit.gov.it/mit/mop_all.php?p_id=14588

http://www.mit.gov.it/mit/mop_all.php?p_id=23270

<http://www.energiaenergetica.enea.it/>

<https://www.uirnet.it/uirnet/>

<http://www.measures-odyssee-mure.eu/successful-detail-measures.asp>

<http://www.regionieambiente.it/energia/efficienza/2121-pubblicati-i-decreti-di-completamento-del-quadro-normativo-sullefficienza-energetica-degli-edifici.html>