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The Italian bottom up approach for measuring & monitoring

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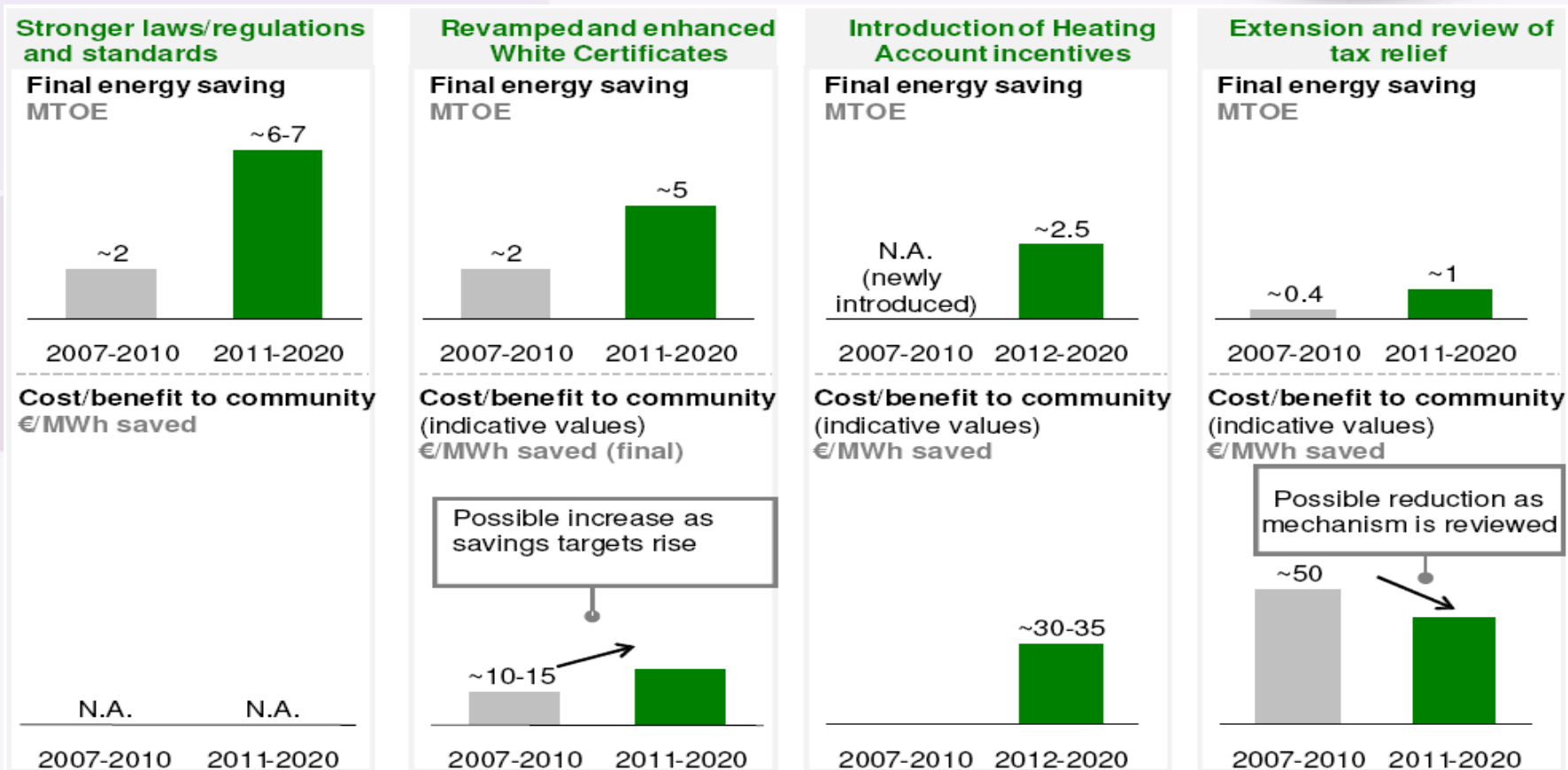
ENEA - National Agency for Energy Efficiency

Riga, 25th March 2015

Italian National Energy Strategy



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Source: Ministry of Economic Development

2014 NEEAP and EED Art. 7

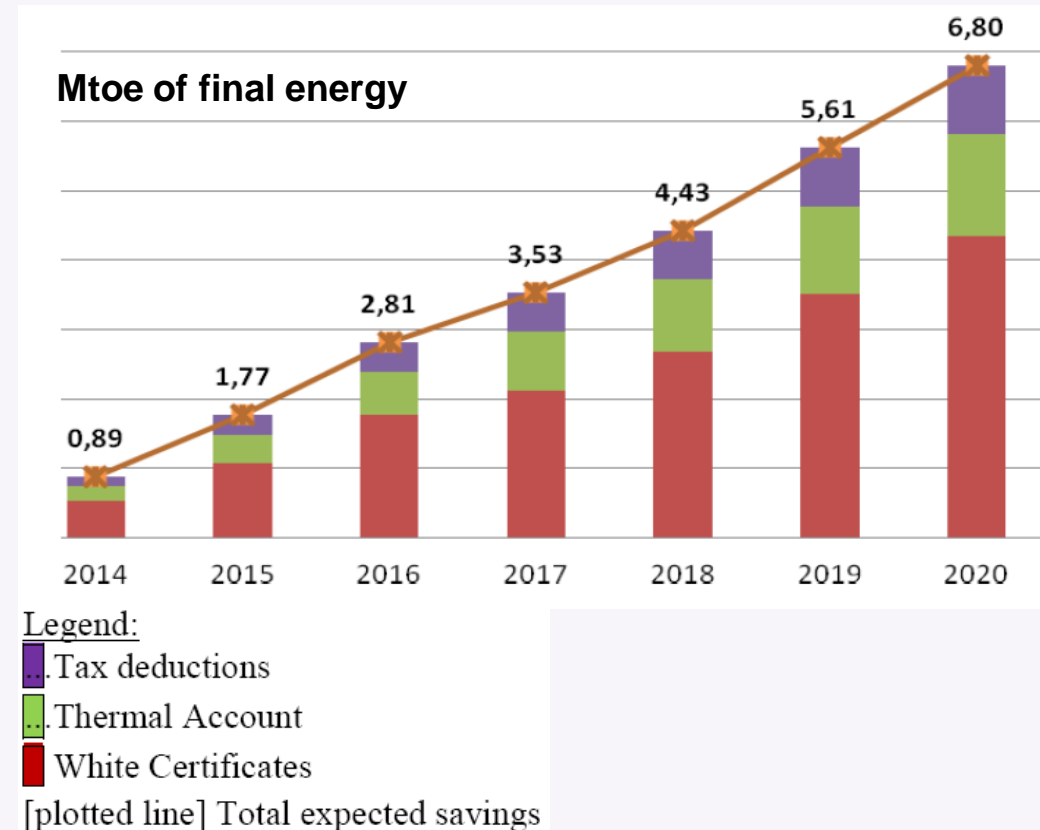


Italy intends to achieve its final energy saving targets, calculated in accordance with Article 7(1) EED, by means of three basic mechanisms, already implemented at national level:

- White certificate obligation scheme.
- Tax deductions for improving the energy efficiency of existing buildings.
- Thermal Account to promote the uptake of renewable thermal energy sources and energy efficiency actions by Public Administrations.

Incentives cannot be combined.

Summary of expected savings



Source: Ministry of Economic Development

Achieved Energy Savings

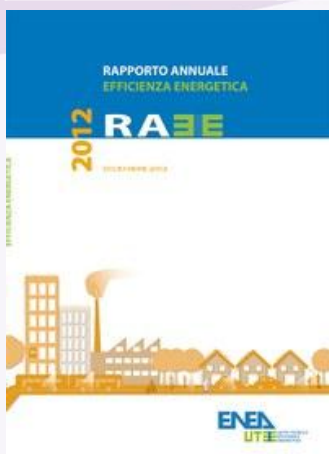


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2011-2013 Energy Savings (GWh/year) (preliminary assessment):

Sector	White Certificates	Tax Deduction	Legislative Decree 102/05 (EPBD)	Car incentives & EC Rules	Other measures	Energy savings		Achieved target (%)
						Achieved at 2013	Expected at 2020	
Residential	3.379	4.034	8.677	-	94	15.202	42.682	35,6%
Non Residential	416	105	290	-		811	14.305	5,7%
Industry	14.942	215	654	-		15.811	59.313	26,7%
Transport	-	-	-	5.262	240	5.502	63.965	8,6%
Total	18.737	4.353	9.621	5.262	334	37.325	180.265	20,7%

Source: elaboration by ENEA



Download at:

www.enea.it/it/produzione-scientifica/edizioni-enea/2014/rapporto-annuale-efficienza-energetica-2012

Technical assessment of more than 14 000 projects was completed in 2013

Almost 40 000 GWh/year of energy savings at 2013 (preliminary assessment)

Projects	Total 2005-2009 (toe/y)	Year 2010 (toe/y)	Year 2011 (toe/y)	Year 2012 (toe/y)	Year 2013 (toe/y)	Total 2005-2013 (toe/y)	Total 2005-2013 (GWh/y)
Standard	2.046.252	89.957	79.937	87.811	266.952	2.570.909	18.097
Ex-post calculation	270.650	384.779	396.442	924.108	303.180	2.279.159	21.433
Total	2.316.902	474.736	476.379	1.011.919	570.132	4.850.068	39.530

Source: elaboration by ENEA on GSE and AEEG data

White Certificates



Beneficiaries

The system rests on the obligation, imposed on electricity and gas distributors having more than 50 000 end users, to generate each year a certain amount of savings or, alternatively, to purchase an equivalent amount of certificates. These parties are required to deliver, each year, a number of certificates proportionate to the energy they distribute.

The certificates are issued after energy efficiency measures are put in place and they are given not only to obligated parties, but also to ESCOs and to all those companies that have appointed an energy manager.

Types of parties	Number as at 31 May 2012
Obligated electricity distributors	8
Obligated gas distributors	23
Non-obligated distributors	14
Energy service companies (ESCOs)	329
Companies with an energy manager (CEMs)	22
Total	396

Implementing authorities:

- The Ministry of Economic Development, in agreement with the Ministry of the Environment and Protection of Land and Sea, sets the annual energy saving obligations and the general rules of the scheme.
- Gestore Servizi Energetici S.p.A. (GSE) is the entity which authorises the issue of the certificates and which performs technical assessment, checks and verifications on the energy efficiency projects submitted by market players and which monitors the energy saving achieved, with support from ENEA and RSE (Ricerca sul Sistema Energetico).
- GME (Energy Market Operator) operates a market platform dedicated to certificate trading.
- AEEGSI (Regulatory Authority for Electricity, Gas and Water) measures the economic impact of the scheme, which is funded indirectly from the electricity and gas tariffs, and sets the penalties for infringement of the rules governing the scheme or for failure to meet saving obligations.



Monitoring & verification (1/2)

Since 2013, GSE has been tasked with overseeing the management, evaluation and certification of the savings achieved by energy efficiency projects carried out under the white certificate scheme. GSE performs this duty with the assistance of ENEA and RSE. In the past, management of the system was handled by the Regulatory Authority for Electricity and Gas (AEEG).

By 31 January of each year, GSE must provide a report on activities and on projects implemented, including their geographical location, complete with data on the savings achieved in the year (in Mtoe), the volume of certificates issued and forecasts for the subsequent year.



Monitoring & verification (2/2)

Each year GSE checks that each obligated party holds a number of certificates corresponding to its assigned annual obligation. GSE, assisted by ENEA, also performs the necessary checks to verify the proper technical and administrative execution of the projects that have generated savings and obtained white certificates. Site visits and inspections may be carried out at the installation site both during project implementation and throughout its life.

To this aim, GSE must submit for approval an annual programme of checks, as well as an annual report on checks conducted and their outcome. This programme must include on-the-spot checks for projects that generate energy savings in excess of 3 000 Toe/year. GSE will annul the certificates associated with any irregularity found and apply to the non-compliant party the penalties provided by law.

Tax Deductions



Number of projects

Project	2007	2008	2009	2010	2011	2012	2013	Total
Overall renovation	3.180	5.700	5.600	1.917	1.450	3.579	3.566	24.992
Insulation of opaque envelope and replacement of windows	39.220	112.600	127.800	226.720	170.400	135.283	244.421	1.056.444
Replacement of electric boilers with solar panels	20.140	37.100	35.300	47.106	29.350	33.801	26.851	229.648
Efficient heating systems	27.560	57.700	68.000	129.883	79.500	72.571	81.123	516.337
Multiple selection	15.900	34.700	-	-	-	-	-	50.600
Total	106.000	247.800	236.700	405.626	280.700	245.234	355.961	1.522.060

Energy savings (preliminary assessment)

Project	2007	2008	2009	2010	2011	2012	2013	Total
Overall renovation	68	163	121	46	35	30	64	527
Insulation of opaque envelope and replacement of windows	186	495	495	771	600	545	802	3.894
Replacement of electric boilers with solar panels	93	288	245	254	160	133	134	1.307
Efficient heating systems	268	614	626	961	640	552	658	4.319
Multiple selection	173	401						574
Total	788	1.961	1.487	2.032	1.435	1.260	1.658	10.621

Source: ENEA

Beneficiaries and implementing authorities

The tax deductions can be claimed by:

- individuals, including persons pursuing trades or professions:
 - the holders of a right in rem on the property;
 - co-owners, for actions on common parts of the buildings;
 - tenants;
 - those holding the property in loan for use.
- taxpayers having income from business activities (individuals, partnerships, limited liability companies);
- professional associations;
- public and private entities not pursuing business activities.

ENEA is the body in charge of assessing the level of energy saving achieved by the action, while the Revenue Agency handles the fiscal side.

Saving calculation methodology

The saving delivered by each action is calculated against expected savings based on the preliminary calculation of the savings afforded by similar technologies applied in equivalent contexts.

From the operational viewpoint, energy savings can be calculated independently by the engineer chosen by the beneficiary or can be derived from calculation algorithms provided by ENEA.

Monitoring & verification

ENEA processes the information contained in the documents submitted and, by 31 December of each year provides a report on the results of the actions.

Monitoring activity includes the following steps:

- preliminary selection of the parameters capturing the results of the fiscal scheme;
- checks on the reliability of the technical data supplied by beneficiaries;
- removal of files with significant technical abnormalities from the database;
- verification - on a national scale and in detail - of the statistical sample extracted;
- final interpolation of the filtered data.

The savings reported in the application for tax deductions are checked for congruity by ENEA. On its part, the Revenue Agency performs tax spot-checks to verify the correctness of the tax deductions claimed against invoiced expenses.

Incentives for renewable heating and cooling small scale plants (1 MW) and for energy renovation of public buildings

- About 10.000 applications between July 2013- December 2014
- 26 million euro of investments
- Need to simplify and to strength the scheme

Beneficiaries

The incentive scheme is addressed to two types of beneficiaries:

- Public administrations;
- Private parties i.e. individuals, buildings held in co-ownership and businesses or farms.

Beneficiaries may implement the actions via an ESCo, by means of a third-party financing contract, an energy service contract or an energy performance contract.

Implementing authorities

GSE is in charge of implementing and managing the scheme. It also awards, disburses and revokes incentives and carries out checks.

ENEA assists GSE in preparing the technical rules for implementing the decree and takes part in the verifications and checks. It also provides specialist assistance to GSE in monitoring activities and, again in cooperation with GSE, draws up the annual report.

AEEGSI prepares the model contract between GSE and the beneficiary and defines the manner whereby the funding for the incentives is to be drawn from the income from natural gas tariffs. The Authority also covers the costs incurred for GSE's and ENEA's activities.

Monitoring

GSE, in cooperation with ENEA, regularly updates on its website the data on the incentive applications received, broken down by type of action, with their key parameters, aggregated national and regional statistical data and the consequent evaluations relating to energy generation or savings and GHG emissions avoided. GSE also publishes data on the annual amount of incentive expenditure, incentive costs, both cumulative and per action, and the cumulative projections of incentive costs over the years of their duration.

By 30 April of each year GSE, with ENEA's technical assistance, must provide a report on the performance of the incentive scheme.

GSE must share the databases, organised at regional level, with the Regions concerned and the representatives of ANCI (the Association of Italian Municipalities) and UPI (the Union of Italian Provinces).

Verification

GSE carries out checks on the basis of an annual programme. This activity includes document verification and on-site inspections, to verify the proper installation and operation of the actions. The checks, which can be implemented with the assistance of ENEA or public service concessionaires and other specialised bodies, cover at least 1% of approved applications.

In order to ensure the scheme is not combined with other State incentives (and to avoid double counting of the saving produced by the actions), procedures are in place to share the relevant information with the monitoring bodies in charge of the other incentive schemes.

Cross-check



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White
Certificates

Thermal
Account

Tax
Deduction

Within the legislative framework set by the Ministry of Economic Development and the Ministry of the Environment, databases of implemented projects for each tool are handled (two by GSE; one by ENEA).

Databases with different structures: to date, cross check between White Certificates and tax deduction based on fiscal code (and address) of beneficiaries.

Economic performance of tools



Preliminary assessment:

		Cost (M€)	Life (years)	Annual Cost (M€/year)	Achieved saving (GWh/year)	Performance (€/kWh)
White Certificates		3.277	10	328	39.530	0,0083
Tax deductions	Overall renovation	438	20	22	527	0,0415
	Insulation of opaque envelope and replacement of windows	6.457	20	323	3.894	0,0829
	Replacement of electric boilers with solar panels	866	20	43	1.307	0,0331
	Efficient heating systems	3.571	12	298	4.319	0,0689
		Weighted average				
Incentives for new cars & trucks		1.589	12	132,44	1.315	0,101

Source: elaboration by ENEA

Construction sector lose about 200 000 jobs in 2012. Energy efficient refurbishment of existing building was able to save about 70.000 jobs in the same year; 60 000 in 2013; 72 000 assessed for 2014... mainly National jobs considering that it is very difficult to delocalize abroad this kind of interventions.

Thank you for your attention



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