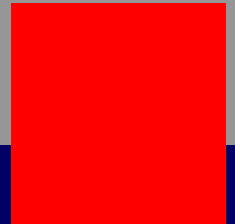


ENERGY EFFICIENCY OBLIGATIONS THE ITALIAN SCHEME

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Drivers

- ❑ Compliance with the EU Directive on liberalization of the electricity and gas markets
- ❑ Affinity with the Proposal for a Directive on energy end-use efficiency and energy services COM (2003) 739
- ❑ Compliance with social objectives for environmental protection and efficient use of resources (Law 481/1995)
- ❑ Efficiency obligations concur to greenhouse gas reductions (Law 120/2002)

Background

- ❑ Legislative Decree n. 79/1999 (liberalization of the electricity sector)

“... electricity distributors prosecute the increase of end-use energy efficiency ...”

- ❑ Legislative Decree n. 164/2000 (liberalization of the natural gas sector)

“... gas distributors prosecute the increase of end-use energy efficiency and the development of renewable sources ...”

Legislation

- ❑ Two Ministerial Decrees enforced in July 2004
(new measures, previous law provisions in April 2001):
 - One Decree for the electricity sector and one for the natural gas sector
 - jointly issued by the Ministry of the Productive Activities (holds energy responsibilities) and the Ministry of the Environment
 - set mandatory primary energy savings from 2005 to 2009 with annual schedule

Obligated parties

- ❑ Distributors of electricity and gas with more than 100,000 customers as of Dec 31st 2001:
 - 10 Electricity Distributors
 - 24 Natural Gas Distributors

- ❑ Distributor's quota of national savings determined according to the ratio of own electricity/gas distributed to the total in the previous year

Targets

- Savings are set in Mtoe/year

Year	Electricity	Gas
2005	0,1	0,1
2006	0,2	0,2
2007	0,4	0,4
2008	0,8	0,7
2009	1,6	1,3

- At least 50% of savings by means of electricity and gas consumption reductions for electricity and gas distributors respectively

Compliance

- ❑ Compliance with targets through the surrender of Energy Efficiency (White) Certificates by May 31st of every year, starting with 2006

- ❑ Distributors can obtain White Certificates in three ways:
 - directly implement energy efficiency projects
 - jointly implement energy efficiency projects with third parties (customers, manufactures, ...)
 - buy the Certificates

Certification

- ❑ White Certificates are awarded after completion of an energy efficiency project, designed implemented and evaluated according to the Guidelines issued by the Authority for Electric Energy and Gas (AEEG) , the “Administrator”

- ❑ As a general rule a project “produces” White Certificates for a period of 5 years
(8 years for specific projects: buildings thermal envelope, bioclimatic design, reduction of cooling needs, etc.)

- ❑ The evaluation and certification process is under AEEG’s responsibility

Projects Evaluation

Energy Efficiency Certificates are issued according to the evaluation made by means of an approved procedure

Three types of procedures are foreseen for the evaluation of the energy savings:

- Default method (no on-field measurement)
- Analytic method (some on-field measurement)
- Metered baseline method

Default method

- ❑ Gives “ex-ante” the energy savings per physical unit of equipment
- ❑ Typically available for “mass” projects where reliable averages can be determined

Analytic method

- ❑ An “open” default method
- ❑ Savings are assessed after on-site metering of relevant parameters
- ❑ Justified for peculiar projects having relatively large unit size (cogeneration, VSD pumping systems, etc.)

Metered baseline method

- ❑ Used when energy savings are the results of measures involving complex interactions among several equipments
- ❑ Savings are based on the difference of measured energy consumption ‘before’ and ‘after’ the implementation. Baselines may be normalized to other process variables
- ❑ Recommended for very large projects

Typical projects (1)

PROJECT TYPE:

- 1 *End-Use Power Factor compensation*
- 2 *Electric motors and their applications*
- 3 *Lighting Systems*
- 4 *Electricity leaking (stand-by losses reduction)*
- 5 *Substitution of electricity with other more efficient energy sources*
- 6 *Reduction of electricity consumption in thermal uses*
- 7 *Reduction of electricity consumption for air conditioning*
- 8 *Promotion of high efficiency electric appliances in offices and homes*

Typical projects (2)

PROJECT TYPE:

- 9 *Devices for combustion of non renewable fuels*
- 10 *Substitution of electricity to other energy sources with reduction of primary energy consumption*
- 11 *Heating/cooling and heat recovery in buildings supplied with non renewable fuels*
- 12 *Development of renewable energy sources at users' premises*
- 13 *Promotion of electric and natural gas vehicles*
- 14 *Campaigns for education, information and promotion of energy efficiency*

Approved Evaluation Procedures as of October 2005 (1)

- 1 *Substitution of incandescent lamps with CFLs*
- 2 *Substitution of electric water heaters with electronic ignition gas heaters*
- 3 *Installation of gas fired boilers rated “4 star efficiency”*
- 4 *Substitution of pilot-flame gas water heaters with electronic ignition gas heaters*
- 5 *Substitution of single-pane with dual-pane windows*
- 6 *Wall and roofing insulation (heating savings)*
- 7 *Use of photovoltaic generators below 20 kW*
- 8 *Use of solar water heaters*

Evaluation Procedures (2)

- 9 *Installation of variable speed drives for pumping systems below 22 kW (default procedure)*
- 10 *Energy recovery from natural gas expansion*
- 11 *Installation of high efficiency electric motors*
- 12 *Installation of high efficiency refrigerators, freezers, washing machines, dish washers*
- 13 *Installation of low flow showerheads in homes, hotels and recreational facilities*
- 14 *Installation of faucet aerators in homes*
- 15 *Installation of air source heat pumps in new or renovated residential buildings*
- 16 *Installation of variable speed drives for pumping systems over 22 kW (analytic procedure)*

Evaluation Procedures (3)

- 17** *Installation of power regulators in public lighting systems*
- 18** *Replacement of mercury vapor lamps with high pressure sodium lamps*
- 19** *Installation of air conditioners with cooling capacity below 12 kW*
- 20** *Wall and roofing insulation (cooling savings)*
- 21** *Small co-generation for heating, cooling, and hot water in buildings*
- 22** *District heating systems for heating, cooling, and hot water in buildings*

White Certificates (1)

- ❑ 1 White Certificate = 1 toe of primary energy saved
- ❑ Issued by the Electricity Market Operator (GME) upon request of AEEG
- ❑ Credited to accounts opened for registered Market participants (electronic recordings, no paper)
- ❑ Can be awarded to:
 - Distributors (obliged and non obliged)
 - Companies controlled by Distributors
 - ESCOs

White Certificates (2)

- ❑ Can be bought and sold also by other operators:
 - Brokers
 - Green consumers

- ❑ Tradable through:
 - bilateral contracts
 - on the public market according to rules established jointly by AEEG and GME

- ❑ Three types of Certificates:
 - I for electricity savings
 - II for gas savings
 - III for other fuels savings

- ❑ Banking allowed

Cost Recovery

Complying Distributors are entitled to cost recovery for the quota of the obligation obtained with type I and type II Certificates

Present cost recovery: 100 Euro/toe

Funds raised through electricity and gas tariffs

Non Compliance

- ❑ “missing” savings in one year to be recovered in the following 2 years
- ❑ money penalties to be defined