

What's up in Italy?
**Market liberalisation, tariff regulation and
incentives to promote energy efficiency in end-use
sectors**

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ABSTRACT

Increased energy efficiency is one key tool to reduce carbon dioxide content and therefore GHG emissions from the energy system.

In a liberalized electricity and gas market new types of incentives should be defined and introduced to promote the market development of new energy technologies and demand-side management programs. The shared understanding is that these incentives should base upon market mechanisms in order to avoid undue subsidization, market opacity and discrimination.

This paper explores recent developments in the promotion of energy efficiency in end-use sectors in Italy, with particular reference to the introduction of an "energy efficiency certificates" trading scheme combined with an "energy efficiency obligation" raised upon electricity and gas distributors, and a costs recovery mechanism via electricity and gas rates.

The implementation of such an innovative policy tool-kit poses a number of technical questions and challenges spanning from the choice of the more appropriate impact valuation approaches for energy savings projects, to the setting up of the trading mechanism itself, to the design of effective monitoring and non-compliance schemes, to the sharing of benefits and costs among the different players (users, energy retailers and suppliers, component and services providers, etc).

Background

Until recently the promotion of energy efficiency in end-use sectors has not been at the top of the Italian energy and environmental policy agenda. Policy efforts have mainly focused on the supply side of the market, aiming at enhancing the conversion efficiency of the existing capital stock, promoting a shift away from carbon intensive

fuels to lower or zero emissions fuels (i.e. renewable sources) and, although to a lesser extent, promoting investments in new capacity and infrastructure.

One reason for this policy choice is possibly linked to the fact that Italy has been traditionally characterised by a relatively low per-capita energy consumption compared to other industrialised countries and this has longly (and wrongly) been interpreted as an indicator of good efficiency in energy use. On the contrary, it is primarily the result of an economic structure characterized by a relatively low share of high energy intensive industries and a significant share of the agriculture and tertiary sector, favorable climatic conditions and a relatively high fiscal pressure on energy-related activities.

In the last few years, driven by the raising environmental concern and the increasing attention being paid to issues related to security of energy supply, a number of studies have explored the technical and economic energy savings potential in the country. These analyses point out that a significant potential exists, although at different levels, in every sector of the economy. These results have fuelled the debate over appropriate ways to promote improvements in the efficiency of energy use.

Kyoto and beyond

Under the Kyoto Protocol and the subsequent burden sharing agreement among EU member states, Italy has committed to reducing its emissions by 6,5% between 1990 and 2008-2012. According to 1997 official national estimates this commitment drives Italy to curb national GHG emissions from a forecasted value of about 622 MtCO₂e in 2012, to 555 MtCO₂e by the first commitment period, resulting in a total reduction of 102 MtCO₂e, corresponding to an actual reduction target of -18,5% with respect to

1990's emissions level¹.

In November 1998 the Government adopted the second *National Programme to reduce GHG emissions* (National Climate Programme or NCP hereafter) which singles out six 'key actions' that will deliver this emissions reduction target (cf. Table 1). A long term reduction goal (2008-2012) is assigned to each 'action' which will have to be achieved gradually. Short (2002) and medium term (2006) objectives are also defined. It is important to underline that the overall reduction target, the sectoral targets and the general policy framework set out in the NCP have been put at the heart of the national energy policy independently from the Kyoto commitment. This means that they have to be integrated into the national energy strategy for the next decade even in the event that the Kyoto Protocol will not enter into force.

According to the NCP, policies and measures to promote energy savings in end-use sectors (industrial, residential and tertiary sector) will play a key role in the reduction of GHG emissions nation-wide (cf. Table 1): about 26% of the whole emissions reduction goal, corresponding to a cut of 24 to 29 MtCO₂., will have to be achieved through energy efficiency improvements on the demand side of the energy market. On the supply side, over 20% of the total long term reduction target, corresponding to a cut of 20-23 MtCO₂e, will have to be achieved through efficiency improvements of power plants; a further 18% (18-20 MtCO₂e) will have to be delivered via an increase of energy generation from renewable sources.

¹ As a consequence of the increasing trend of GHG emissions in the period 1997-1999 these numbers are now being revised.

Table 1. Key actions in the NCP and emissions impact (MtCO₂e)

Key action	2002	2006	2008-2012
1 Efficiency improvements in power generation	-4 to -5	-10 to -12	-20 to -23
2 Energy saving in transport	-4 to -6	-9 to -11	-18 to -21
3 Promotion of renewables	-4 to -5	-7 to -9	-18 to -20
4 Energy savings in end-use sectors	-6 to -7	-12 to -14	-24 to -29
5 Emission reductions in non-energy sectors	-2	-7 to -9	-15 to -19
6 Sinks	--	-	-0.7
Total	-20 to -25	-45 to -55	-95 to -112

Source: CIPE's Deliberation 19 November 1998, N. 137/98.

The NCP does not lay down specific policy tools to be used in order to pursue the above-mentioned emissions reduction goals; however it does specify that these emissions cuts will have to be achieved via policies and measures that:

- enhance the emission reduction potential of policy measures that have to be introduced in order to comply with EU directives and regulations;
- pursue the modernisation of the industrial and energy system and infrastructure and the improvement of energy efficiency in a cost-effective way;
- promote the development of innovative low-emission technologies.

In other words, the great part of the package of measures implemented within the NCP will have to be of a "non-regret" type: together with emissions cuts, they will deliver a number of secondary benefits in terms of efficiency improvements, enhancement of the competitiveness of the Italian electricity supply industry, air quality improvements in towns and cities.

Energy efficiency and the opening-up of energy markets to competition

A further important criteria for the definition of the policy tool-kit to promote the reduction of GHG emissions nation-wide has emerged contemporaneously to the need to

implement the two European Directives on the liberalisation of the electricity and gas market²: the search for policy tools consistent with the new emerging market framework.

The common understanding is that, in order to avoid undue subsidization, market opacity and discrimination, 'traditional' policy instruments such as standards and fiscal incentives have to be gradually substituted by (or, at least, used jointly with) incentives based upon market mechanisms.

The process of implementation of the two European liberalisation Directives has also given rise to a growing concern over the possible negative environmental impacts of the liberalisation process. Many are concerned that as markets become more competitive and prices gradually decline, consumption (and related emissions) increases while utilities adopt myopic behaviours and seek to shed costs, starting from activities which are characterised by high initial investment costs and long pay-back periods: renewable sources, R&D initiatives, programs to promote energy efficiency in end-use sectors, etc.

With regard to the latter, these concerns have been integrated into the legislative acts which implement the EU Directives in the national electricity and gas market³: both acts (Legislative Decrees) determine that concessions for distributors shall contain provisions to increase the energy efficiency of end uses, according to quantitative targets to be set by Decree of the Minister of Industry jointly with the Minister of the Environment.

² Directive 96/92/CE of the European Parliament and of the Council of December 19, 1996 and Directive 98/30/CE of the European Parliament and of the Council of June 22, 1998 respectively.

³ Legislative Decree no. 79 of 16 March 1999 and Legislative Decree n. 164 of 23 May 2000.

New mechanisms for the promotion of energy efficiency in end-use sectors

The need to set these targets gave the Government a great opportunity to rethink the structure of the policy instruments used until that date to promote energy efficiency in end-use sectors.

In April 2001 two Legislative Decrees were issued (one for the electricity distribution sector and one for the natural gas distribution sector) which set these quantitative targets together with a new and quite innovative policy tool-kit to promote their achievement. The policy package combines command and control type of measures (mandatory quantitative targets) with market based instruments (certificate trading) and elements of tariff regulation (costs recovery mechanisms via electricity and gas rates).

The implementation of the whole mechanism is under the responsibility of the Regulatory Authority for Electricity and Gas (AEEG), including the definition of a number of elements which are essential to kick-start its operation.

The following paragraph briefly examines the main provisions set up in the Government decrees (also referred to as 'efficiency decrees' hereafter) and the role of the different markets actors. We will then turn to the analysis of the key issues for their successful implementation and discuss alternative solutions actually been considered by AEEG and put forward to the consultation of interested parties.

The new legislative framework

The two Legislative Decrees set mandatory national energy savings targets for the period 2002-2006 (see Table 2). The targets are set in terms of savings in primary energy consumption (measured in ton of oil equivalent - toe). An overall saving target of 2.9 Mtoe will have to be achieved by the end of 2006. Quantitative targets for the following

years will be set with a joint decree by the Minister of Productive Activities and the Minister of the Environment.

Table 2 Mandatory national energy saving targets (2002-2006)

Year	Target (Mtoe)	
	<i>Electricity distribution sector</i>	<i>Natural gas distribution sector</i>
2002	0.10	0.10
2003	0.50	0.40
2004	0.90	0.70
2005	1.20	1.00
2006	1.60	1.30

Source: Legislative Decrees, 24 April 1999

National targets are apportioned among distributors that serve more than 100.000 customers. Rules for distributors under this threshold are to be issued jointly by the Minister of Productive Activities (former Minister of Industry) and the Minister of the Environment. The apportionment is made each year on the basis of the quantity of electricity and gas distributed to final customers compared to the national total, both measured in the previous year (specific obligation hereafter).

Electricity distributors will have to achieve at least half of their specific obligation via a reduction of electricity end-uses; gas distributors will have to achieve at least half of their specific obligation via a reduction of gas end-uses (referred to as the "50% constraint" hereafter, cf. figure 1). The remaining share of the annual target can be achieved via primary energy savings in other sectors (i.e. fuel switching, etc;)⁴.

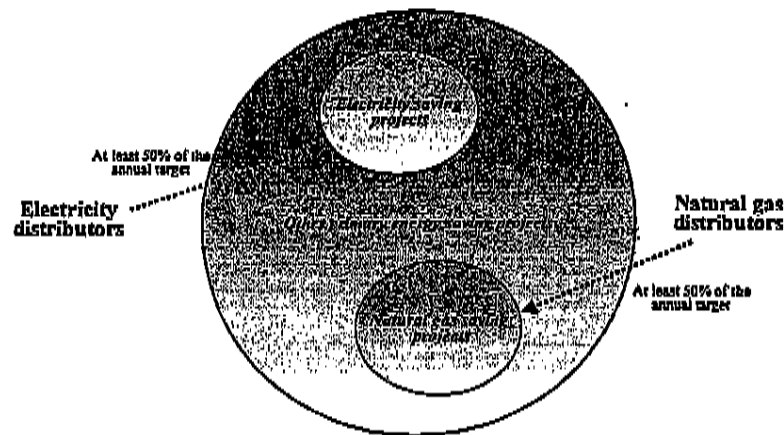
In order to favour a certain degree of graduality in the implementation of the obligation, the decrees allow savings realised in 2001 to count against the 2002 target, subject to specific eligibility criteria⁵. In addition, a grace period is foreseen according to

⁴ The 50% constraint translate in an electricity consumption target equal to at least 1,5% of the total electricity distributed to final costumers in 1999 (net of auto-consumption). In the case of natural gas, it translate in a reduction of at least 3% of the total natural gas distributed in the same year.

⁵ I.e. They have to be part of a voluntary agreement concluded with the Public Administration and are subject to approval by the Authority.

which distributors will be able to compensate for under-compliance with the 2002 target in the following two years.

Figure 1: the 50% constraint



The targets do not refer to specific end-use sectors and/or type of projects. An illustrative list of eligible projects is attached to both decrees, but this has to be regarded simply as *illustrative* and therefore 'open'. Supply-side projects are considered not to be eligible to meet the obligation⁶.

In order to count against the obligation energy savings projects will have to be implemented:

- a) by distributors, directly or via controlled companies;
- b) by "independent companies operating in the energy services sector" (i.e. ESCOs).

Criteria and guidelines for the design, implementation and valuation of projects will have to be defined by AEEG at the end of a consultation process which includes also local administrations (regions and autonomous provinces).

⁶ This exclusion is specifically mentioned in the decrees. However, a bit contradictorily, the illustrative list of eligible projects attached to the two decrees include small photovoltaic plants.

Regions and autonomous provinces may want to set local quantitative targets as well as criteria for their implementation "*in the framework of the targets and criteria defined in the decrees*" and "*taking into account additional financial needs*". In other words: what the national Government has decided not to do at the national level, i.e. identify specific target sectors and/or target technologies, has been allowed to be done at the local level.

In general, projects are not subject to approval *before* their implementation. Each year AEEG will have to make an *ex-post* evaluation and certification of the savings achieved by each project presented by allowed actors (i.e. distributors and ESCOs) and will issue "energy efficiency certificates" corresponding to the (certified) volume of primary energy saved. The value of one energy efficiency certificate is therefore expressed in terms of ton of oil equivalent energy saved.

In order to certify savings and to issue energy efficiency certificates AEEG will have to verify that projects have been designed and developed according to the criteria set in the decrees and in the AEEG's *Guidelines on the preparation, implementation and valuation of energy efficiency projects*.

The purpose of the energy efficiency certificates ("EECs" hereafter) is twofold:

1. they serve as an accounting tool to prove that the corresponding amount of primary energy has been saved; to this aim at the end of each compliance period distributors will have to surrender to the AEEG a number of EECs corresponding, in energy value (ton of oil equivalent), to the obligation they were asked to meet in that period;
2. they are allowed to be traded either bilaterally or in a EECs market specifically set up to that purpose by the Market Operator.

The enforcement of the whole policy mechanism is under the responsibility of AEEG. Sanctions for non-compliance with the obligation will have to be defined by

AEEG. Sanction proceedings will be put in a specific government-administered Fund to be used to back information and training programs on energy efficiency in end-use sectors.

Costs incurred by distributors for the development of projects in the framework of the two Decrees *may* be recovered via electricity and natural gas distribution tariffs, net of any contributions from other sources. Criteria and mechanisms for this recovery will have to be defined by AEEG. Every year AEEG will have to publish a Report on activities implemented in the framework of the two efficiency decrees. The Report could include proposals concerning possible modifications of the system as defined by the Government.

Key issues, challenges and opportunities

The implementation of the policy framework designed by the Government poses a number of technical questions and challenges, spanning from the choice of the more appropriate impact valuation approaches for energy savings projects, to the setting up of the trading mechanism itself, to the design of effective monitoring and non-compliance schemes, to the sharing of benefits and costs among the different players (users, energy retailers and suppliers, component and services providers, etc). These key technical issues will have to be tackled by AEEG, which is presently working at the drafting of a proposal document to be put forward for consultation of interested parties.

The market for energy efficiency certificates

The introduction of tradable energy efficiency certificates (EECs) is the transposition to end-uses energy efficiency of a principle that has been applied so far to a number of other topics in a number of countries (e.g. emissions reductions, development of renewable energy sources, water rights, etc.). Its major aim is to combine the 'guaranteed results' of regulation (i.e. mandatory energy savings targets) with the

economic efficiency of market-based trading mechanisms. At least in theory and under strict assumptions, it will allow to achieve the pre-defined and compulsory targets at the minimum total cost. But this does not at all need to be the case in practice. The success of the EEC-based promotion system depends largely on the way it is designed.

Valuation approaches

A first issue to be solved is how to ensure that EEC represent 'actual savings', i.e. savings that have been actually realised over and above the spontaneous market trends. This, in turn, calls for the definition of approaches to evaluate the impacts of the vast array of projects eligible within the framework set by the efficiency Decrees. Tackling this issue would require an whole paper. In the following we give a synthetic description of the main criteria and proposals which AEEG is going to put forward for consultation.

The proposals look for a balance between rigorosity and reliability of savings on the one hand, and simplicity on the other. Where the two above mentioned goals are likely to diverge, AEEG is proposing to go for simplicity in order to kick start the operation of the whole system.

To this aim, AEEG is considering three valuation approaches:

1. a deemed savings approach;
2. an engineering approach;
3. a third approach based on monitoring plans which must be submitted for pre-approval to AEEG and must conform with pre-determined criteria (e.g. sample size, criteria to choose the measurement technology, etc.). Energy savings are inferred through the measurement of energy use.

1. The deemed savings approach will be used for projects for which expected savings are reasonably well understood and direct measurement would therefore be not

cost-effective. For every type of project a simple equation is provided together with standard values for each of the parameters included in the equation itself.

2. The engineering approach will be applied for those projects whose energy saving impact is quite well understood but varies depending on a limited number of identifiable parameters of usage (i.e. number of hours of usage, etc.). For this type of project AEEG will identify an algorithm, fix the value of some parameters while asking for the direct measurement of the parameters of usage which are likely to vary significantly case by case.

3. The third approach (i.e. based on monitoring plans) will be open only for projects whose performance crucially depend on variables and parameters that change from case to case and is therefore less predictable.

In the deemed savings approach gross savings will have to be converted into net savings through simple multiplication by a default factor which takes into account for free-riding effects and, depending on the type of project been considered, by a second default factor which takes into account the impacts of different delivery mechanisms (e.g. direct installation, sale without installation, discount bonus, etc.). Subsequent year savings (i.e. savings achievable in the years $t+1$) will have to be estimated using a default persistence factor specified by AEEG.

For projects that have to be evaluated using one of the other two approaches, the conversion of gross savings into net savings have to be made by documenting an actual net-to-gross ratio⁷, while the persistence of savings have to be measured directly. The reference case has also to be specified case by case.

⁷ E.g. comparing the gross savings of customers participating in the program to the change in energy use of a similar group not participating in the program; estimated indirectly through market research, surveys, etc.

Framing the EECs market

A second issue to be solved is related to the rules governing the market for EECs, e.g.: who has to buy certificates? Who can buy? Who can sell? How many types of EECs will be issued? Which degree of fungibility, if any, may exist among different types? Which is the size and the lifetime of one EEC (for the different types of certificates issued by AEEG)? Which its information content? How trading will work in practice (i.e. periodicity/frequency of trading, procedures for trading, etc.).

1. *Who can participate in the market.* AEEG believes that the wider participation in the EECs market should be promoted in order to exploit the potential cost-effectiveness of the instrument. To this aim AEEG is proposing to allow the participation in the EECs market also to those distributors who are currently not subject to the efficiency obligation (i.e. distributors below the threshold of 100.000 customers served). Energy services companies will have to meet pre-defined selection criteria in order to be entitled to EECs and be able to exchange those EECs with other market actors. AEEG is proposing to use as selection criteria the legal *status* of the company and the type of contracts that it makes with third parties. Only those companies which are proposing energy savings at zero additional costs to their clients (i.e. contracts whereby the investment required is financed through part of the economic value of the savings achieved⁸) will be admitted to the market.

2. *Types of certificates to be issues and degree of fungibility.* Coherently with the framework designed by the efficiency Decrees, AEEG is proposing to issue three types of certificates, characterized by different degrees of fungibility between each other (see table 3):

⁸ Shared saving contracts.

- a) type 1 certificate: they attest the achievement of primary energy savings through reductions of electricity consumption and are therefore valid to verify that the electricity '50% constraint' and/or the overall primary energy target has/have been met;
- b) type 2 certificates: they attest the achievement of primary energy savings through reductions of natural gas consumption and are therefore valid to verify that the natural gas '50% constraint' and/or the overall primary energy target has/have been met;
- c) type 3 certificates: they attest the achievement of primary energy savings through reductions in the consumption of other fossil fuels and are therefore valid only to verify the achievement of the primary energy saving target.

Table 3. Types of energy efficiency certificates issued by AEEG and degree of fungibility among each others

Certificate type	Usability/Tradability/Fungibility			
	<i>Electricity Decree</i>		<i>Natural gas Decree</i>	
	<i>Achievement of the target related to the reduction of electricity consumption</i>	<i>Achievement of the target related to the reduction of primary energy consumption</i>	<i>Achievement of the target related to the reduction of gas consumption</i>	<i>Achievement of the target related to the reduction of primary energy consumption</i>
Type 1 certificate	YES	YES	NO	YES
Type 2 certificate	NO	YES	YES	YES
Type 3 certificate	NO	YES	NO	YES

3. *Unit value.* Each certificate will have a pre-defined unit value, to be set by AEEG at the end of the consultation process.
4. *Flexibility mechanisms.* The lifetime of each certificate is set at 5 years. Therefore banking of certificates is allowed while borrowing is not. Banking will allow distributors some additional flexibility in meeting the obligation. In order to contrast possible anti-competitive behaviours AEEG will set a maximum limit to the total

number of banked certificates that can be presented for redemption as a percentage of the target that each distributor has to meet.

At the time of writing criteria and rules governing the trade of EECs (both in the market and via bilateral contracts) have yet to be defined. This will include decision concerning the periodicity/frequency of trading, safety rules for buyers and sellers, etc.

Non-compliance regime

The efficiency Decrees establish that sanctions for non-compliance with the energy efficiency obligation will have to be "*proportional and in any case greater than investments needed to compensate the non-compliance*". To this respect AEEG is proposing to fix two different type of sanctions:

- the first type will be raised against distributors which turn out to be non compliant with the '50% constraint';
- the second type will be raised against distributors which did not comply with their *overall* obligation.

The unit value of each of the two penalties (expressed in terms of €/toe not saved) will be equal to the maximum value between a level to be defined at the end of the consultation process and the average market price of the corresponding energy efficiency certificate in the previous year, multiplied by a factor of greater than one.

The value of the sanction(s) will act as a ceiling to the price of the energy efficiency certificates exchanged in the marketplace or thorough bilateral contracts, thus preventing possible price spikes in case of lack of certificates supply.

Two ways of imposing the total penalty for non compliance with the obligation (overall target and/or '50% constraint') are being proposed by AEEG: direct payment

versus indirect payment, i.e. via a reduction of the total allowed cost (that is to say the total cost recoverable via electricity and gas rate; cf. the following paragraph).

Non compliance with the general criteria and rules set out in the two efficiency Decrees and in the *Guidelines* to be issued by AEEG (e.g. discriminatory or anti-competitive behaviour, false information, etc.) could result in the imposition of a further sanction.

Costs recovery mechanism via electricity and gas rates

As already mentioned, the two efficiency Decrees allow for the possibility to recover via electricity and gas rates the part of the costs borne by distributors for the development of projects which has not been financed via other sources. The definition of criteria and rules for costs recovery is left to AEEG. The only criteria mentioned by the legislator is that AEEG will "*have to take into account, inter alia, any net revenue variations (plus or minus) resulting from the need to comply with the obligation*".

Although recent analyses show that a significant energy saving potential could be exploited via the development of projects which are already economically self-sustained or that need a little 'help' to be so, AEEG reckons that this potential has not been exploited so far because of a number of barriers of technical, financial, cultural and institutional nature. AEEG believes that allowing the partial recovery of costs incurred by distributors for the design and development of energy savings projects will contribute to lower these barriers, thus promoting the diffusion of energy efficiency technologies, products and consumption patterns.

To this aim in the new tariff system introduced by AEEG previously to the Efficiency Decrees⁹, a specific parameter has been included in the *price-cap* formula for

⁹ Cf AEEG's Deliberation 29 December 1999, n. 204 and Deliberation 28 December 2000, n. 237.

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annual tariffs adjustment, through which distributors will be able to recover the costs incurred for demand side management initiatives. It is these two parameters that will be used to allow for the (partial) recovery of costs incurred by electricity and gas distributors respectively for the development of projects in the framework of the two efficiency Decrees.

AEEG is proposing that only distributors that are subject to the energy efficiency obligation will be able to recover part of the costs borne for the development of energy saving projects via these tariff components. The rationale for this choice being that non-obliged actors that decide to develop energy savings projects will do so because they see in this a business opportunity linked, *inter alia*, to the tradability of the energy efficiency certificates via bilateral contracts or in the marketplace. The same is true for ESCOs (whose costs could not be recovered via rates).

The level of the tariff components that will be used to cover these costs will be set so as to reflect *standard "allowed costs"* related to these activities as opposed to a *passthrough* mechanism of *actual* costs borne by distributors. Such a system, based on standard rather than actual costs, is intended to introduce incentives for distributors to reduce the costs incurred to meet the obligation via energy saving projects, since not all the costs they incur will be pass on to final consumers via electricity and gas tariffs.

An average standard cost per unit of primary energy saved will be determined by AEEG (cent€/toe):

It is proposed that only savings achieved via cuts of electricity and gas consumption will be 'eligible' for cost recovery via electricity and gas rates respectively, and only up to the occurrence of each distributor obligation (i.e. extra-savings, that is to say savings realised over and above the obligation, will not qualify for cost recovery). 'Eligible' savings include both savings achieved directly, i.e. through the development of

energy efficiency projects, and savings achieved indirectly, i.e. by purchasing energy efficiency certificates from third parties.

The choice of the level of the average allowed cost per unit of primary energy saved will have to be made by AEEG subject to a number of practical difficulties and constraints:

- the limited national experience with and background knowledge of energy saving projects developed in the country and their related costs;
- the difficulties and the limits of using data transferred from other national (i.e. legislative, social, technological) contexts;
- the limited time at disposal to kick start the whole system put in place by the legislator (six months).

Against this background, AEEG is proposing to fix the level of the average *allowed* cost per unit of primary energy saved (CR) by looking at the average *avoided* cost of a unit of energy saved (CE) as a *reference value* indicative of the maximum cost that consumers will have to bear for the achievement of the energy efficiency targets set by the legislator. In other words, from an economic point of view, AEEG is assuming that the cost to consumers of saving one unit of energy should not be greater than the cost they would incur for buying the same unit of energy (kWh or cubic meter of natural gas). An externality adder (α) will be added to the 'private' avoided cost in order to take into account the environmental benefits associated with the savings of a unit of energy and not reflected in its market price.

The decision concerning what percentage (γ) of this maximum reference value (CE + α) will represent the allowed cost recoverable via electricity and gas rates is of course linked to the hypotheses made on which part of the average cost of a unit of

energy saved could *on average* be covered via other sources (e.g.: state, regional or local financing mechanisms, direct customers financing and energy efficiency certificates):

$$CR = \gamma * C = \gamma * [CE * (1+\alpha)]$$

will also take into account the fact that, according to recent estimates, the *actual* unit cost (i.e. cost per unit of energy saved) of a number of energy saving projects is much lower than the *avoided* unit cost, even without considering the externality benefits associated with the saving

The *allowed* (i.e. recoverable) unit cost could be either unique or differentiated for different categories of projects. AEEG is considering whether to differentiate this parameter in order to promote specific technologies or to encourage projects focusing on specific classes of customers (e.g. poor customers). In such a case a mechanism should be envisaged to avoid undesired impacts on the EECs market (e.g.. further market segmentation).

As a consequence of the reform of the electricity and gas tariff system operated by AEEG in 1999 and 2000 respectively there will be no "*revenue variations (plus or minus) resulting from the need [of distributors] to comply with the obligation*"¹⁰.

The allowed unit cost(s) will be updated regularly by AEEG in order to reflect the evidence emerged from the direct experience with energy saving projects and the associated costs¹¹, as well as to promote productivity improvements.

The recovery mechanism will be *ex-ante* and will operate through the variable part of the tariff (cent€/kWh o cent€/mc). A compensation Fund will be created in order to balance possible surpluses or deficits at the single distributor level.

¹⁰ Cf AEEG's Deliberation 29 December 1999, n. 204 and Deliberation 28 December 2000, n. 237.

¹¹ Also as reflected in the price of EECs.

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