

MARKET-BASED INSTRUMENTS FOR ENERGY EFFICIENCY POLICY

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Autorità per l'energia elettrica e il gas

Background (1)

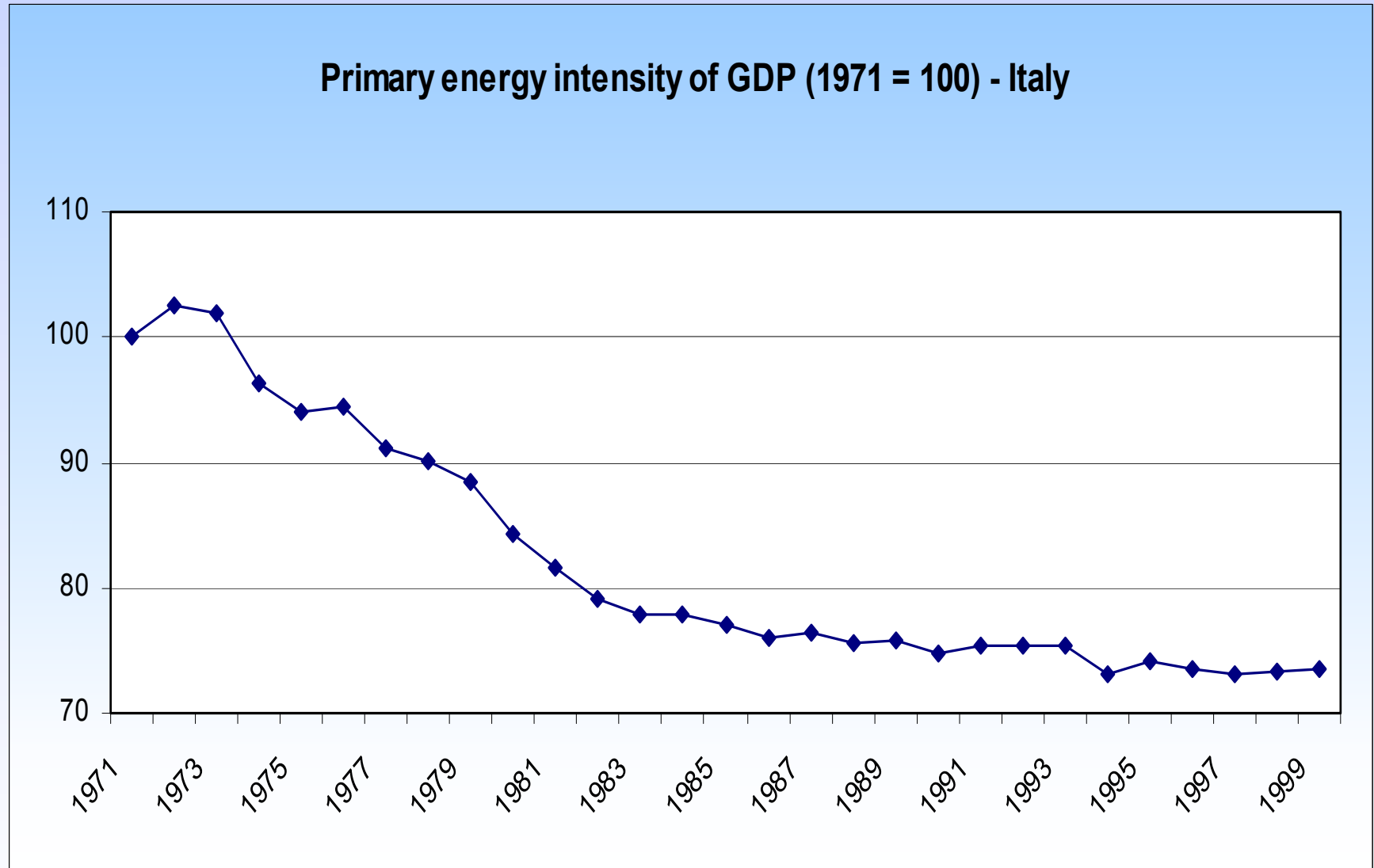
The past

- ◆ **Relatively low political attention for energy efficiency**
- ◆ **In-use policy tools:**
 - efficiency standards for building
 - energy labelling
 - selected fiscal measures
 - voluntary agreements
 - specialized agencies promotion/advice



Background (2)

The past



New policy drivers

◆ **Kyoto**

- GHG emissions reduction
- more than 25% via enhancement of end-use energy efficiency (Italian compliance plan)

◆ **Security of supply**

- California
- EU Green Book
- shortage of supply at national level

◆ **Potential demand increase following liberalisation**

- to be confirmed

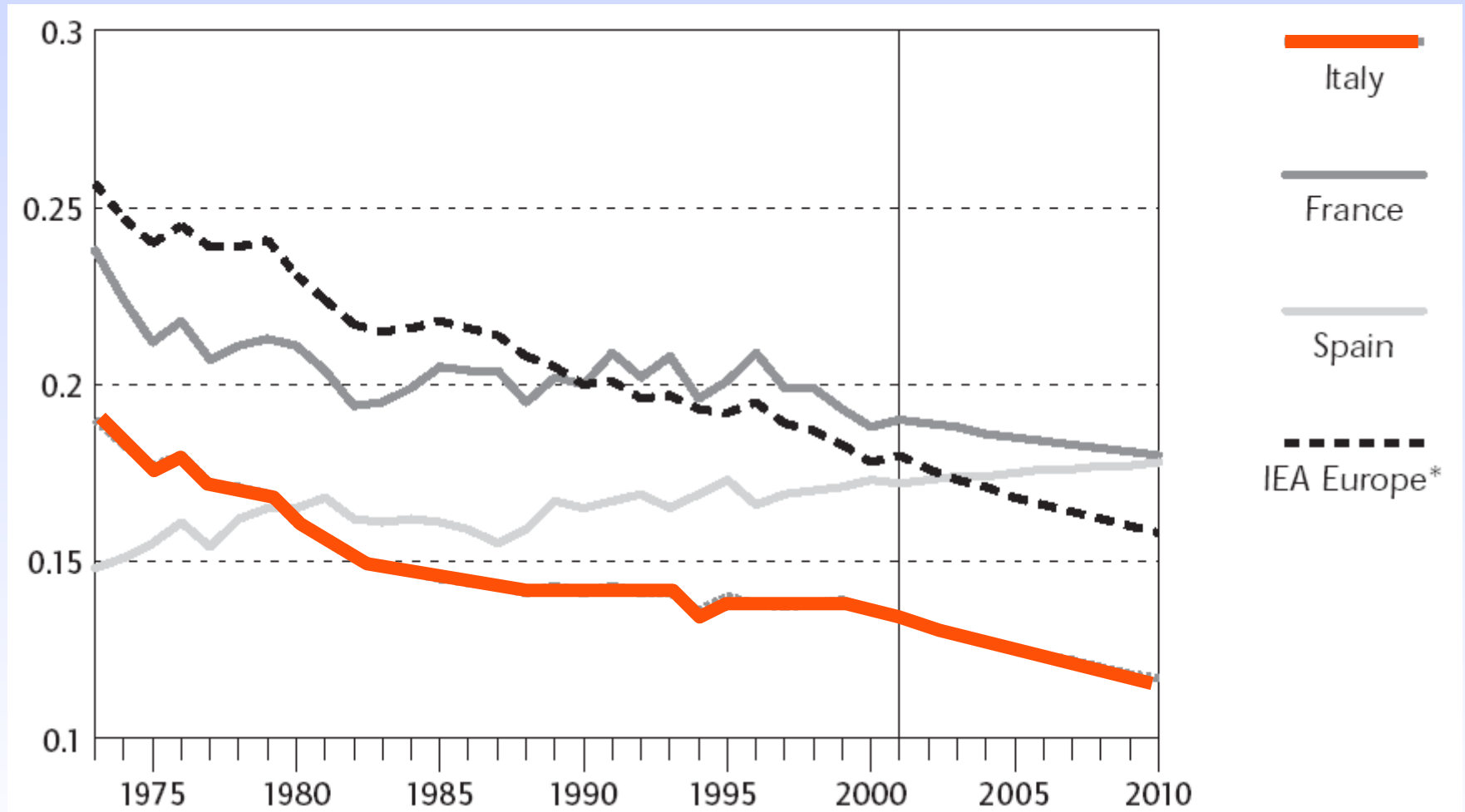
◆ **Economic benefits**

- development of energy services companies (ESCO)
- trade balance, cost-efficiency, ...



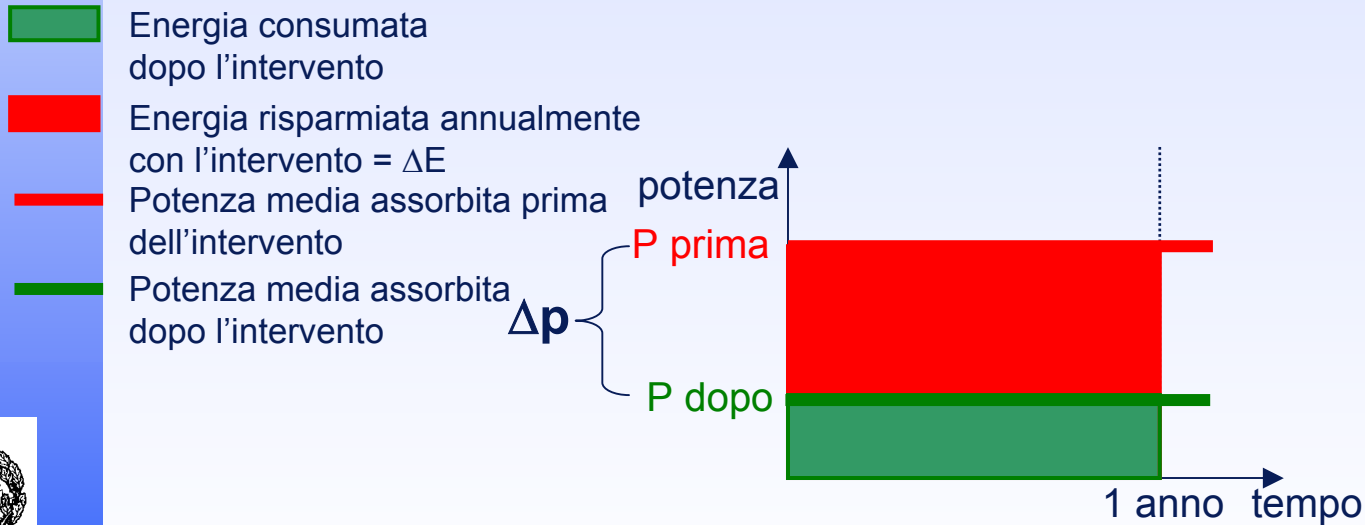
The future: Energy intensity till 2010 (?)

*Energy Consumption/GDP
(toe/US\$-constant prices)*







Energy Efficiency

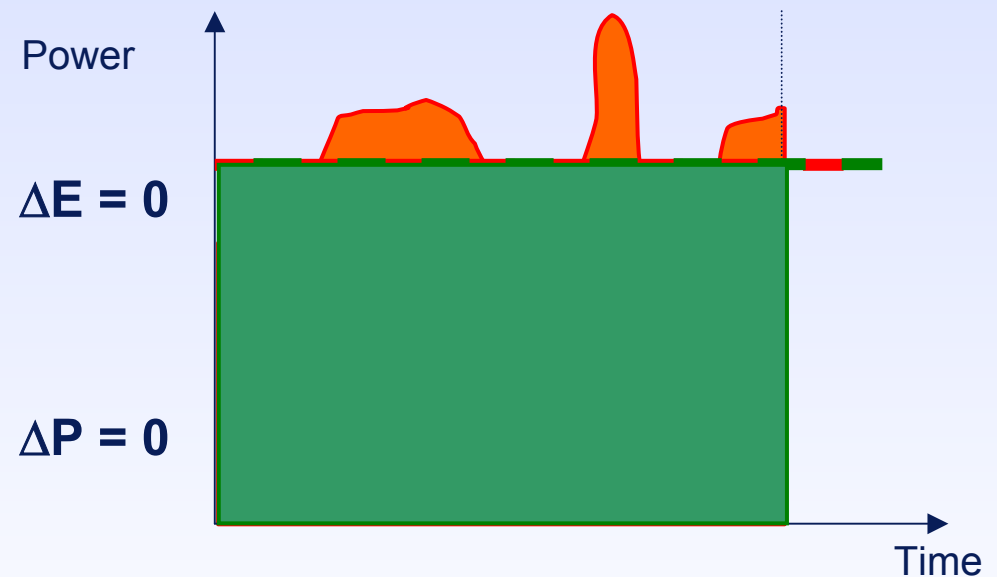
Less energy / Same service



Demand Control

Demand shift / Same energy consumption

-  Energia consumata dopo l'intervento
-  Energia consumata prima dell'intervento
-  Potenza media assorbita prima dell'intervento
-  Potenza media assorbita dopo l'intervento



The policy framework

- ◆ **The new policy framework, as established by two Ministerial Decrees issued on July 2004, is based on:**
 - “command-and-control” type of regulation
combined with ...
 - market-based mechanisms, including a certificates trading scheme
- ◆ **The definition of technical rules, the implementation, monitoring and enforcement of the whole mechanism are under the Energy Regulator’s (AEEG) responsibility**



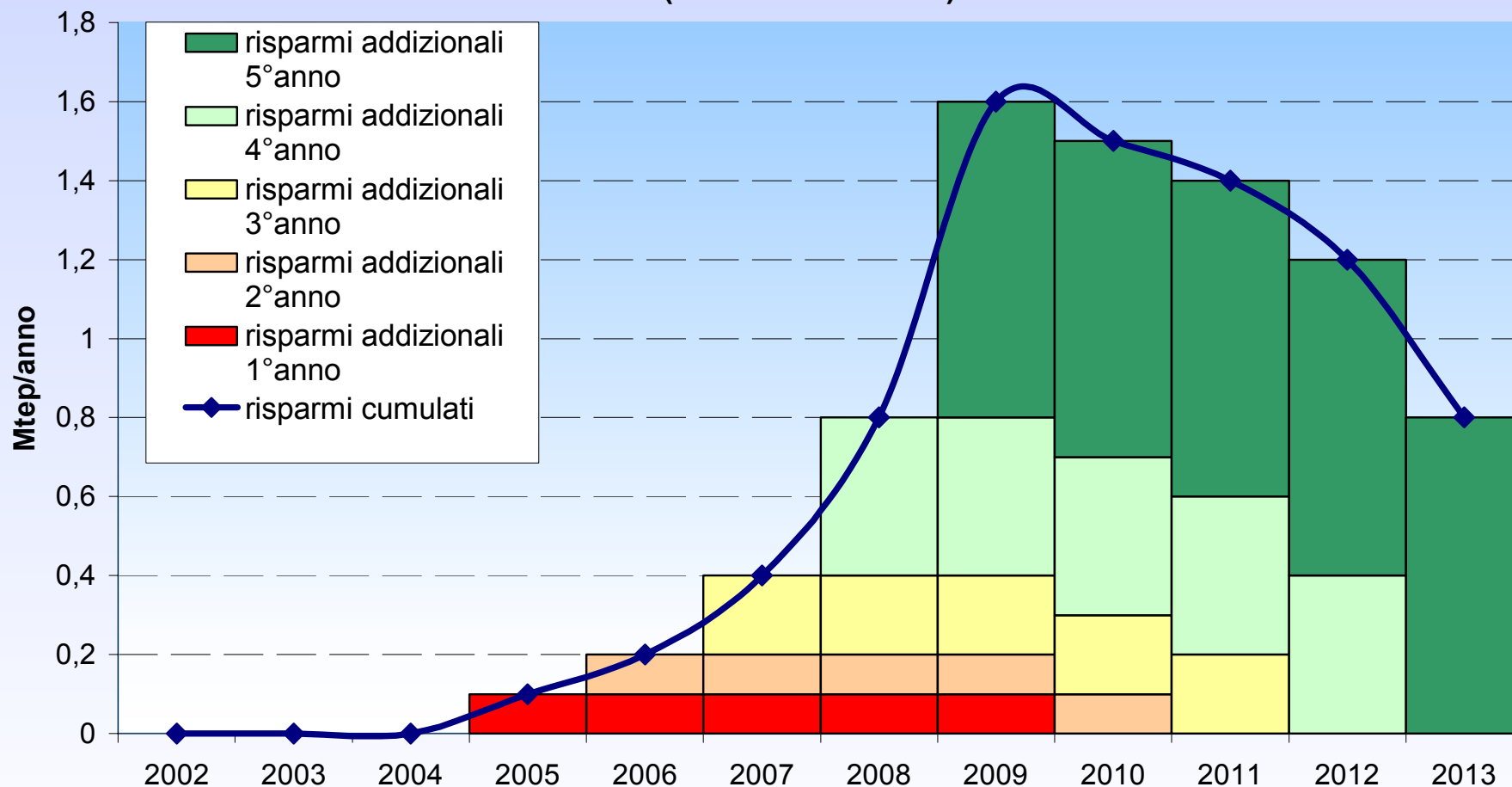
National targets

- ◆ **National energy saving targets (expressed as TOEs)**
- ◆ **All energy sources and end-use sectors are considered**
- ◆ **At the moment targets have been decided for the period 2005-2009**
- ◆ **Targets are lower at the beginning of the period**



The Energy Efficiency Targets

Risparmi annui addizionali e cumulativi
(DM elettrico 2004)



Distributors' targets

- ◆ **Individual energy saving targets for large distributors of gas and electricity**
- ◆ **Threshold: > 100.000 customers served**
- ◆ **Distributors' targets are related to market share**
- ◆ **50% gas/gas or electricity/electricity constraint**



Eligible projects

◆ Eligible projects:

- all types of energy saving projects (final use only; electricity generation excluded)
- projects implemented from 2001 to 2004, subject to AEEG's approval

◆ Conventional project lifetime: from 5 to 8 years, depending on the type of measure



Eligible projects/2

- ◆ Projects can be implemented:
 - by distributors
 - by energy service companies
 - by companies controlled by distributors



Projects evaluation

◆ **Two main challenges:**

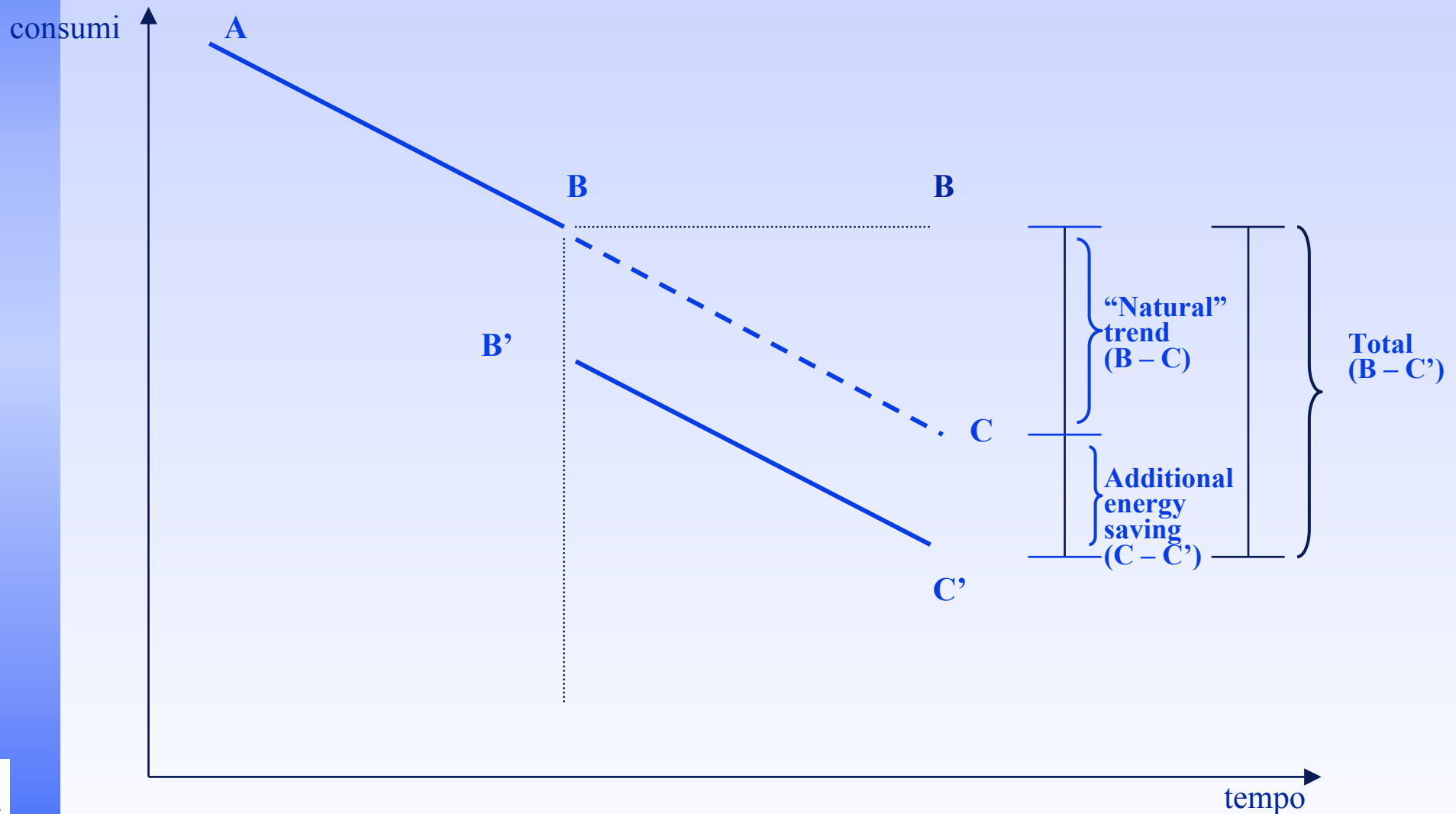
- quantitative measurement of energy savings for each single project
- distinguish “additional savings” from “state of the art”

◆ **AEEG has developed three evaluation approaches:**

1. default approach (no measurement; installed units are considered according to their average energy saving)
2. engineering approach (some measurement of technical features)
3. energy monitoring plan (direct measurement of consumption before and after the project)



The problem of additionality



Projects verification and validation

- ◆ Verification will be carried out annually via:
 - control of projects documentation
 - on-site audits
- ◆ Validation of verified projects' results is done via the issuing of tradable Energy Efficiency Certificates (EECs)
- ◆ EEC represent the amount of energy saved



The trading mechanism

- ◆ **Unit value of EEC: tons of oil equivalent saved**
- ◆ **EECs are issued by the Electricity Market Operator to:**
 - distributors and their controlled companies
 - energy services companies
- ◆ **EECs are tradable:**
 - via bilateral contracts
 - in a specific market organised by the Electricity Market Operator
- ◆ **Banking**



The enforcement mechanism

- ◆ **At the end of each year distributors will prove the possession of requested EECs**
 - either gained through directly managed projects
 - or bought from ESCOs on the market
- ◆ **Non compliant distributors are subject to economic penalties**



The cost recovery mechanism

◆ Costs born by distributors :

- *may be recovered via electricity and gas tariffs...*
- limited to costs related to energy savings via cuts in electricity and gas consumption
- ... according to criteria and mechanisms to be defined by AEEG
- 100 €/toe in 2005
- annual update possible



What has been done/1

	Regulator	Ministries	Market Operator
Definition of the overall policy toolkit and list of the eligible projects		✓	
Public consultation on guidelines for project development and evaluation, cost recovery, sanctions, EEC issuing	✓		
Definition of Guidelines for project development and evaluation	✓		
Development of standardized procedures for energy saving calculation	✓		
Public consultation on further standardized procedures	✓		
Development of an interactive website for requests of savings evaluation and certification	✓		



What has been done/2

	Regulator	Ministry	Market Operator
Definition of the cost recovery mechanism	✓		
Additional charge to the distribution tariffs for electricity and natural gas	✓		
Definition of sanctions for non compliance	✓		
Definition of white certificates market rules	✓		✓
Creation of the white certificates market			✓
Data collection for the definition of the energy saving targets for each distributor	✓		
Definition of energy saving targets for each distributor (2005 targets)	✓		



The Energy Efficiency Certificates Market

TRADEABILITY = ECONOMIC EFFICIENCY

- ◆ ***Demand:*** Obligation to own a fixed amount of certificates every year
 - distributors
 - traders

- ◆ ***Supply:*** Measurable energy saving emerging from implementation of eligible projects
 - distributors
 - ESCOs
 - traders



Why a market-based approach?

	Certain target	Cost efficiency	Potential for policy integration	Coherency with a liberalised market	Incentives for market transformation and ESCOs
Public benefit charge programs	?	no	high	medium	possible
Mandatory targets	yes	no	medium	low	low/low
Mandatory targets + Tradable EEC	yes	minimised	medium	high	low/high



Key success factors

◆ Will it work?

- ambitious and complex to administer (3 years needed for implementation rules)

◆ Key success factors include:

- graduality in implementation
- credibility and transparency of the policy approach
- simplicity of rules and guidelines (low compliance and transaction costs)
- sufficient degree of flexibility for market actors to meet their goals
- adequate market development



Experiences (under construction)

	UK	Italy
Target type	Quantity of energy saved (TWh of fuel weighted energy benefits)	Quantity of primary energy saved (Mtoe)
Target sectors	Domestic; focus on disable customers; few project types	All end-use sectors and projects
Responsible entities	Suppliers with over 15,000 customers	Distributors with over 100,000 customers
Who bear the costs	Suppliers + households	Distributors + consumers
Trading of certificates	Possible, upon OFGEM authorisation	Via bilateral contract or specific market



Integration with other policy instruments

- ◆ **Traditional instruments (incentives, energy labels, information) and voluntary agreements**
 - good complementarity/integration
- ◆ **Energy efficiency targets and GHGs reduction targets**
 - usually no CO2 credit is attached to EE certificates
 - can be integrated, with some measurement problems
 - this is not a specific problem of energy efficiency certificates
- ◆ **Flexible instruments (emission tradable permits, JI, green certificates)**
 - no overlapping with renewable sources promotion policy, including green certificates – can be combined
 - Equivalence schemes might be defined to avoid double counting and to trade “green” against “white” certificates

