1) How much does your EEO scheme costs - 1

- **Costs to final consumers:**

ELECTRICITY SECTOR

year	IMPACT ON TARIFFS c€/kWh	IMPACT ON TARIFFS €/household/year	average price c€/kWh	allowance / price
2005	**0,00**	0,1	12,92	**0,0%**
2006	**0,01**	0,2	14,80	**0,0%**
2007	**0,01**	0,3	15,64	**0,1%**
2008	**0,04**	1,0	17,42	**0,2%**
2009	**0,05**	1,4	16,80	**0,3%**

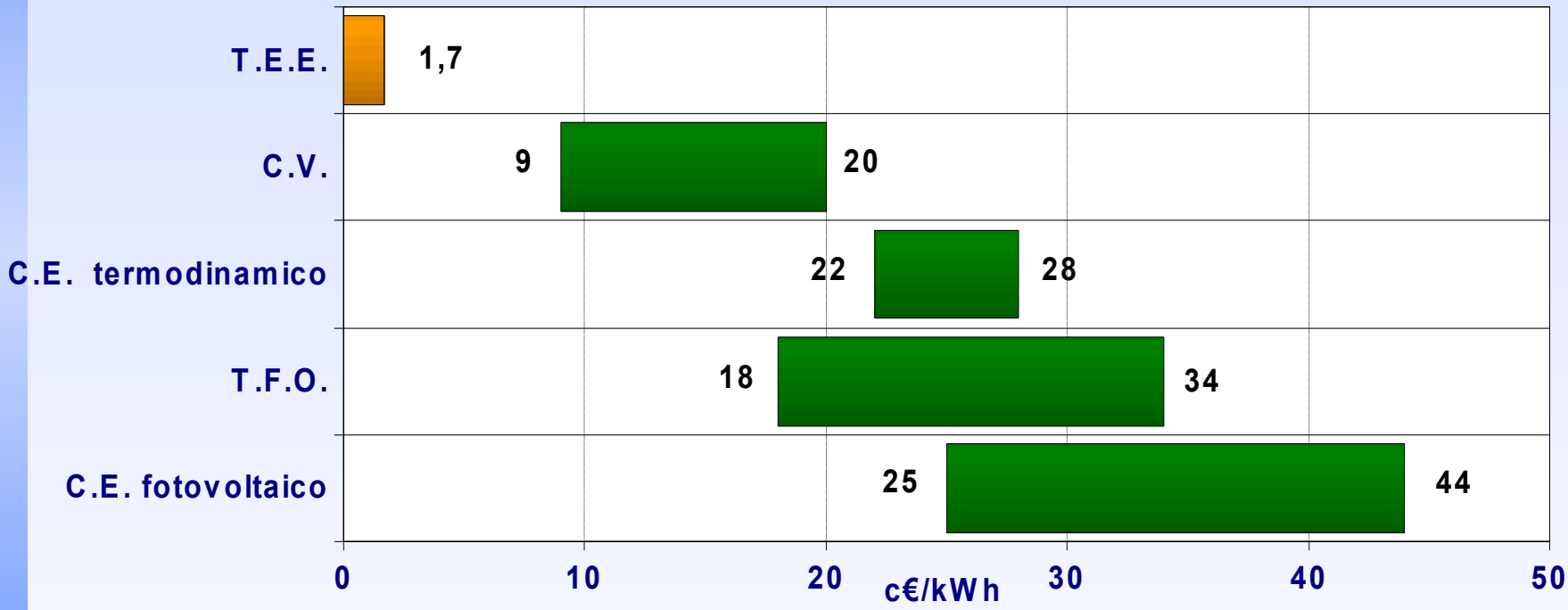
NATURAL GAS SECTOR

year	IMPACT ON TARIFFS c€/m3	IMPACT ON TARIFFS €/household/year	average price c€/m3	allowance / price
2005	**0,01**	0,2	61,76	**0,0%**
2006	**0,02**	0,3	67,63	**0,0%**
2007	**0,05**	0,7	67,29	**0,1%**
2008	**0,12**	1,6	74,38	**0,2%**
2009	**0,16**	2,2	72,14	**0,2%**

- **Average maximum annual cost per household: 3,6 €/household/year.**
- **Average annual cost per kWh saved < 1,7 c€ (much lower should lifetime savings be taken into account)**

1) How much does your EEO scheme costs - 2

- **Costs to final consumers:**

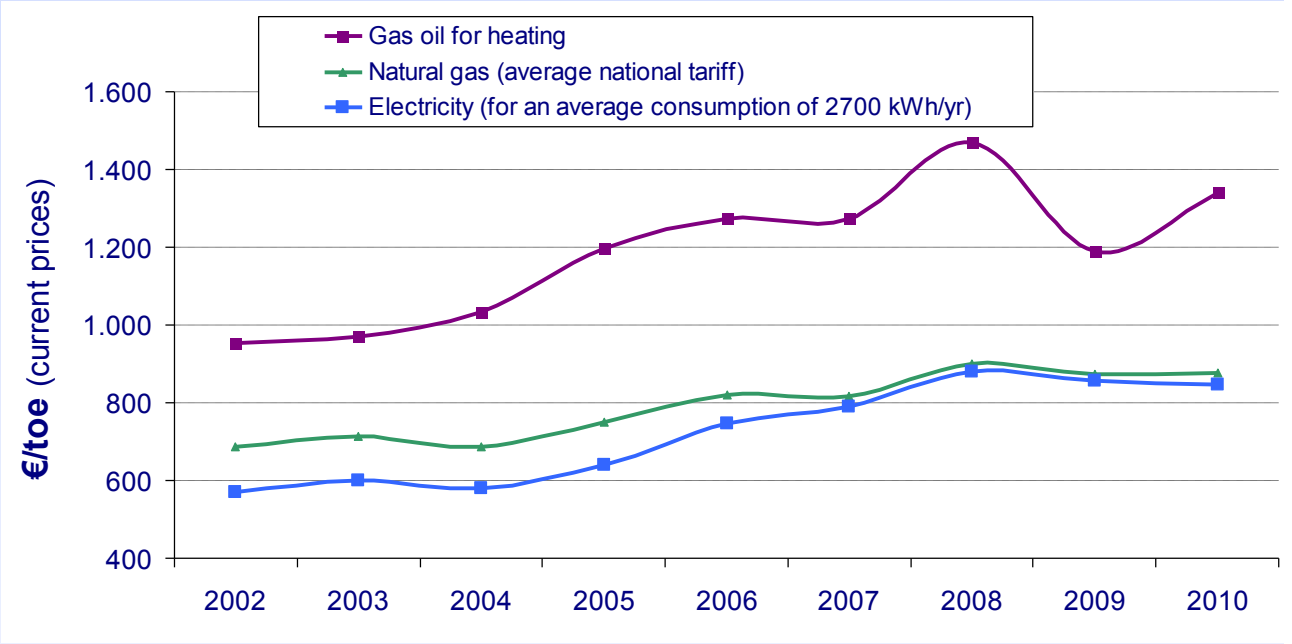


- **Average annual cost per kWh saved < 1,7 c€to be compared with other incentive mechanisms aiming at delivering similar environmental benefits (e.g. green certificates and alternative feed-in tariffs for renewable electricity generation)**

Costs and benefits

- **Private benefits**:
  - ✓ Value of saved energy for domestic users (taxes included)

    = 5 → 15 times the allowance



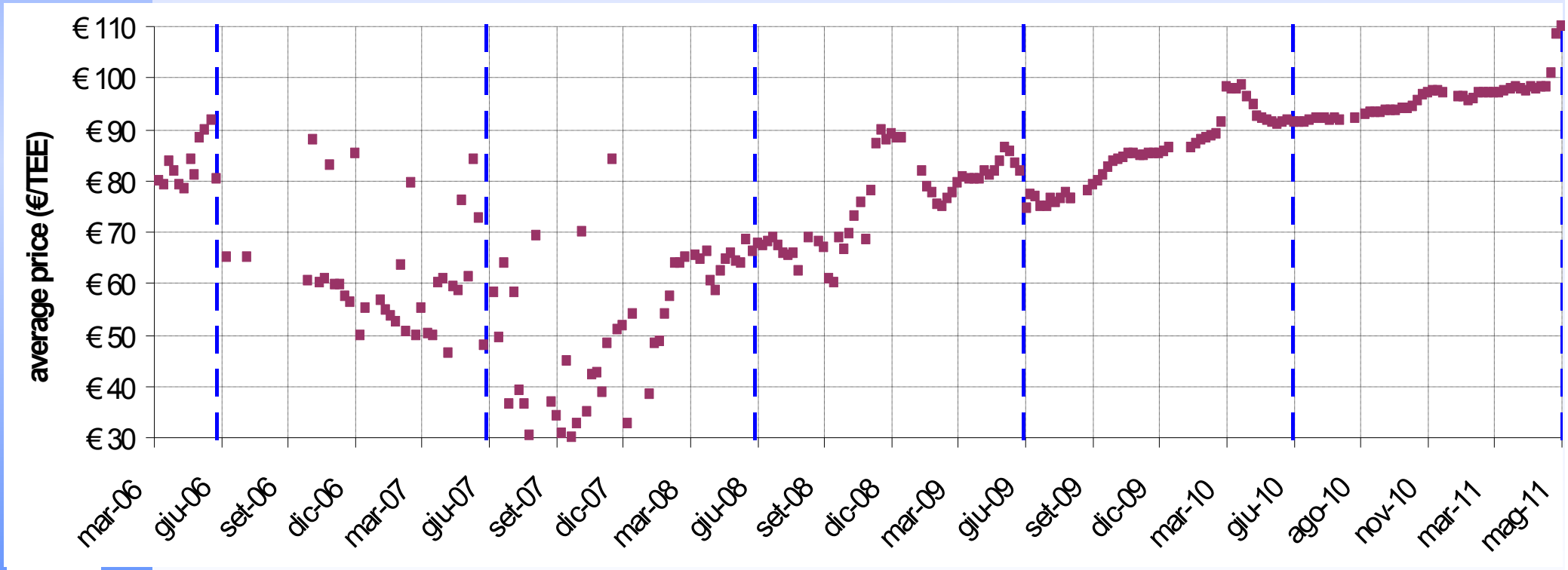
- **Public benefits**
  - ✓ Avoided CO2 emissions: 2.3 – 3.5 tCO2 / toe
  - ✓ Decrease in the national target for RES production (17%): 0,91 – 1,98 MWh / toe

Estimated avoided cost = 114 → 750 €/toe

1) How much does your EEO scheme costs - 3

- **Costs for obliged DSOs:**

  85% of targets met with purchased certificates



2) Key features of a cost effective scheme - 1

- **All, with some trade-offs**
- **Large scope in terms of eligible sectors and measures**
  - ➔ even target setting may have an impact (e.g. banded versus unbanded EEO, primary energy vs final energy)
- **Choice of obligated actors and other eligible parties (market structure, possible market power; ESPOs vs ESCOs)**
- **Measurement and Verification rules and tools (general accounting principles, deemed savings availability, information systems governing the various pieces of the scheme)**
- **In general trading allows competition in the delivery of energy services towards the targets and should guarantee that savings will occur where it is more economic ➔ rules to encourage market liquidity and trasparency (although many potential sources of market distorsions e.g. sanctions, cost-recovery mechanism); banking aims at reducing price volatility but may result in certificates hoarding thus reducing cost-effectiveness**
- **Governance (numbers of actors involved, synergies with regulation and administration of other incentive systems**

3) Key features of a cost-recovery mechanism - 1

- **Key issue when the EEO is on DSO (regulated market)**
- **Generally speaking regulation should:**
  - eliminate potential disincentives to invest in end-energy efficiency measures: cover costs directly linked to measures + any indirect costs such as 'lost revenues' (to the extent that regulated revenues depend on the volume of energy delivered)
  - introduce "positive incentives" to compensate the 'opportunity cost' of a missed investment in the DSO's core business (i.e. networks) (not just a break-even activity but a new business opportunity); e.g. performance-based incentives (performance = energy savings delivered)

3) Key features of a cost-recovery mechanism - 2

- **Passthrough versus standard cost: the former approach does not promote economic efficiency**
- **Unique (average) versus differentiated e.g. technology-based**
  - risk of windfall profits with a unique tariff allowance (€/KWh, toe saved)
  - technology-differentiated: data needs (isn't it why we rely on the market, by allowing trading?); need tagged certificates (one type for every technology that has its own tariff allowance), but a fragmented market is less efficient;
- **If trading is allowed, than purchased certificates should be eligible as certificates delivered by direct measures**
- **Fix or regularly updated; if updated, on which basis?**
- Possible use of sanctions revenues to **finance the mechanism** => reduces the impact on final consumers (and reduces possible distorsions from a pre-fixed unitary penalty)

3) Key features of a cost-recovery mechanism - 3

- **In the Italian white certificates mechanism:**
  - **cost born by obliged DSOs**
  - **up to the target**
  - **including purchasing of TEE from third parties**
  - **no pass-through but standard allowed cost**
  - **€/unit of primary energy saved ➔ flat and technology-neutral**
  - **only measures in the transport sector are not eligible**
  - **updated on an annual basis:**

$$C_{t+1} = C_t \cdot (1 - e)$$

where:
C_i is the unitary allowance applied to year i [€/toe]
e is the average % increase in the prices of energy for residential customers
(electricity, natural gas and gas oil for heating)

increases when energy prices (i.e. the avoided energy cost) fall and viceversa, so as to stabilise the overall incentive to invest in EE