

# White Certificate Systems – Interaction with other policy instruments

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# Itinerary

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- What are white certificates?
- Why an increasing interest for white certificates in Europe?
- Key challenges for **effective** white certificate systems
- Price formation and cost interaction
- Wrap-up & conclusions

*The certificate price represents all **other** attributed values than its 'energy content' e.g. security of supply, urban air quality, fuel poverty (reduction), etc.*

# 1.1 What are white certificates ?

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- A white certificate represents a *validated amount* of energy saving, which will be realised during a *pre-specified time span*
- A white certificate is (intended to be) *tradable*
- So-called *obligated parties* are to achieve multi-year energy saving targets; target achievement is evidenced by a corresponding volume of white certificates acquired
- Obligated parties can acquire white certificates either by:
  - Generating them in their own energy saving programmes
  - Purchasing them on the market

# 1.2 What are white certificates ?

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- In principle white certificates focus on saving of *final energy use*
- However, integrated solutions for energy saving + localised *renewable* energy use, such as in buildings, may be included
- The obligated parties are the energy supply companies, with possible distinctions concerning
  - Energy carriers delivered through networks
  - Other energy carriers
  - Size of the supply company
- Sectors and projects covered by other trading schemes (EU ETS; green certificates) are excluded

## 2. Why an increasing interest ?

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- Tradable White Certificate (TWC) systems are:
  - Started up in Italy and France
  - Under preparation in the Netherlands
  - Considered in various other EU member states, e.g. Sweden
- The UK Energy Efficiency Commitment resembles – to some extent – a TWC system
- TWC systems are mentioned in the new directive on Energy Services, as an additional option
- Energy saving is increasingly recognised as an option to meet energy demand, which also:
  - improves security of supply
  - makes energy conversion less dependent on fuels with GHG impact
  - has ancillary benefits (building quality, other emissions, ..)

# 3.1 Key challenges for an effective TWC

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- Creating a *credible* and *cost-efficient* system:
  - Practical and standardised validation and certification of projects
  - Minimal transaction cost for all parties
  - Budget neutral and equitable funding of the TWC system
- Interactions with the existing policy portfolio
- Impacts on energy markets

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## 3.2 Key challenges: interaction with other instruments

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- Other instruments promoting energy saving:
  - Taxes on energy carriers
    - Low TC, but (much) less effective outside (heavy) industry
  - Income tax deductions (households, companies)
    - Medium to high TC (for receiver), effectiveness depends on many features e.g. income level, prone to free riding
  - Energy saving investment subsidies
    - Medium to high TC (for both sides), prone to free riding
  - Support for green loans; interest support
    - Low to medium TC, depends on willingness of banks, needs to be fairly strict on 'green' content but within these limits cost-efficient & fairly effective

## 3.3 Key challenges: interaction with other instruments

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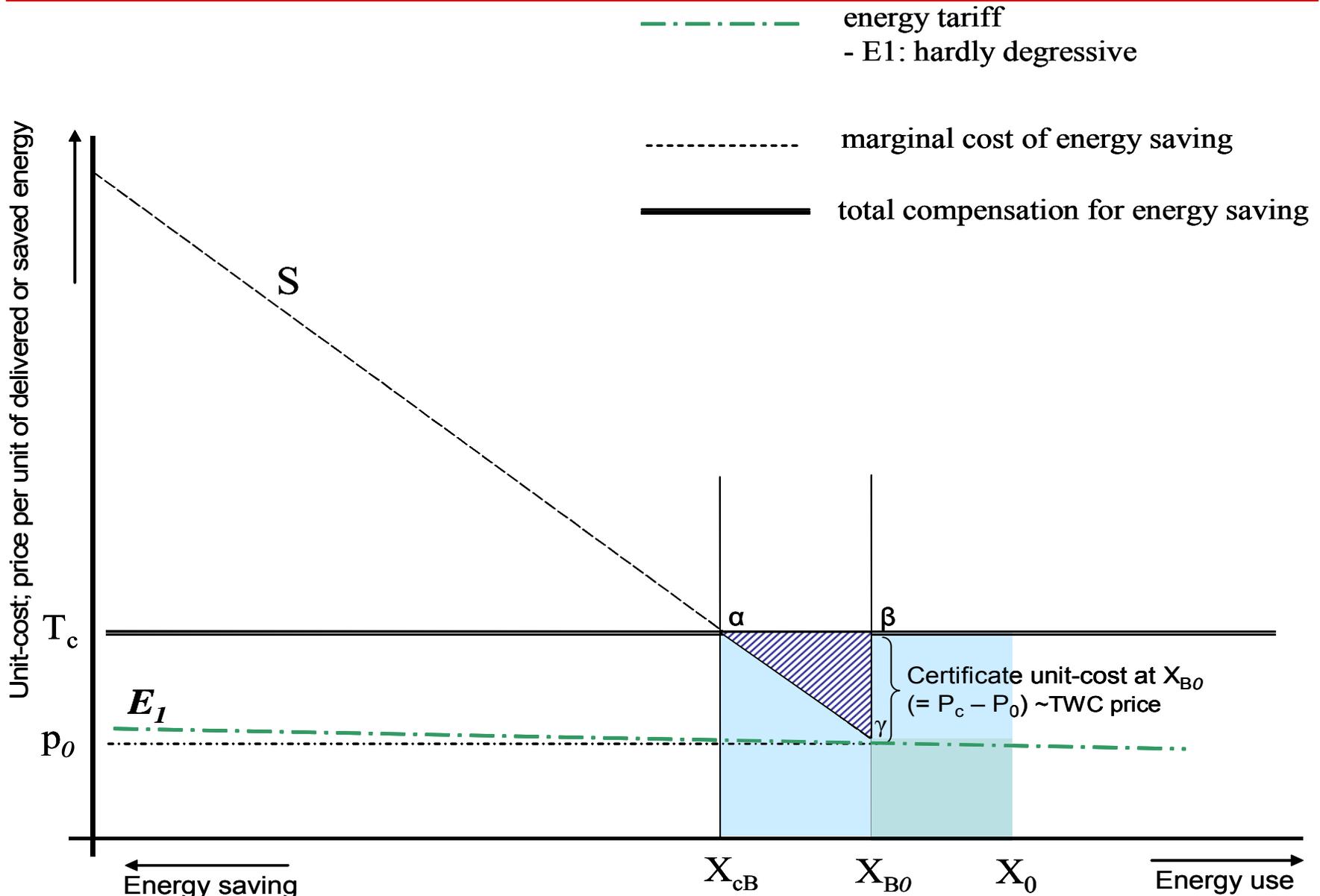
- Other instruments promoting energy saving:
  - Voluntary agreements
    - Swaps some aspects of TC for other ones (as TWC does), trade-off: efficiency ? effectiveness ? coverage
  - Education (e.g. eco-driving)
    - high (implicit) acquisition cost, otherwise modest TC, all-in-all eco-driving appears quite cost-effective
  - Performance standards/Labelling
    - High TC cost (at supply side & regulator), especially if to maintain meaningful and cost-effective standards
  - CO<sub>2</sub> cap-and-trade systems (EU ETS)
    - By excluding EU ETS no direct interaction
    - Interaction via energy market (less demand ? less CO<sub>2</sub> ? emission permit price ?)

## 3.4 Key challenges: interaction with energy markets

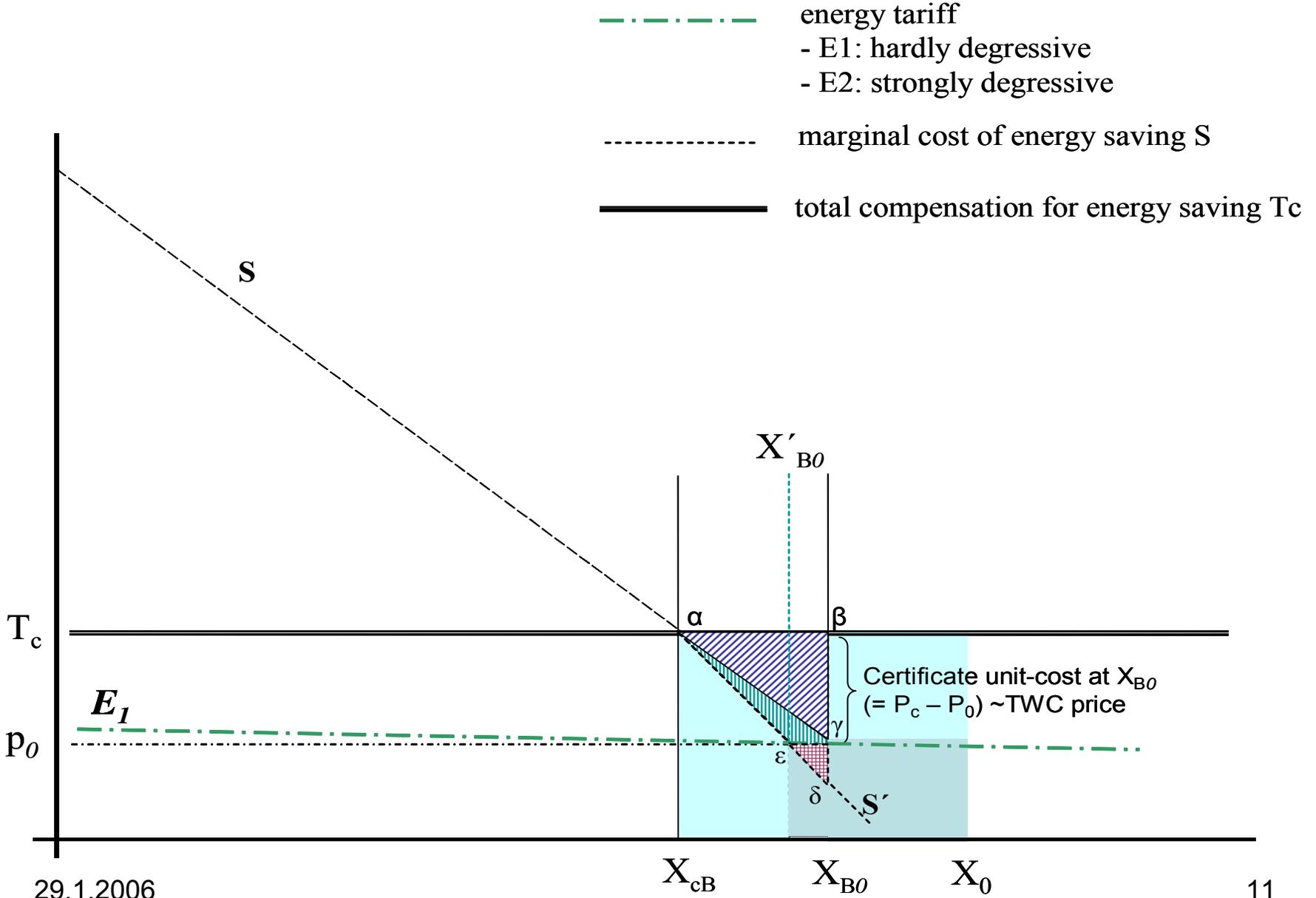
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- The price of a white certificate depends on:
  - The overall energy saving target imposed
  - The prices of the energy carriers, which will be saved
  - The shape of the curve of the marginal cost of energy saving (the envelope of all sectors)
  - The transparency of the TWC market
  - Possible changes in other policies affecting the TWC market (e.g. EU ETS; tax policies)
- Funding may be partly covered by changes in the energy sales portfolio

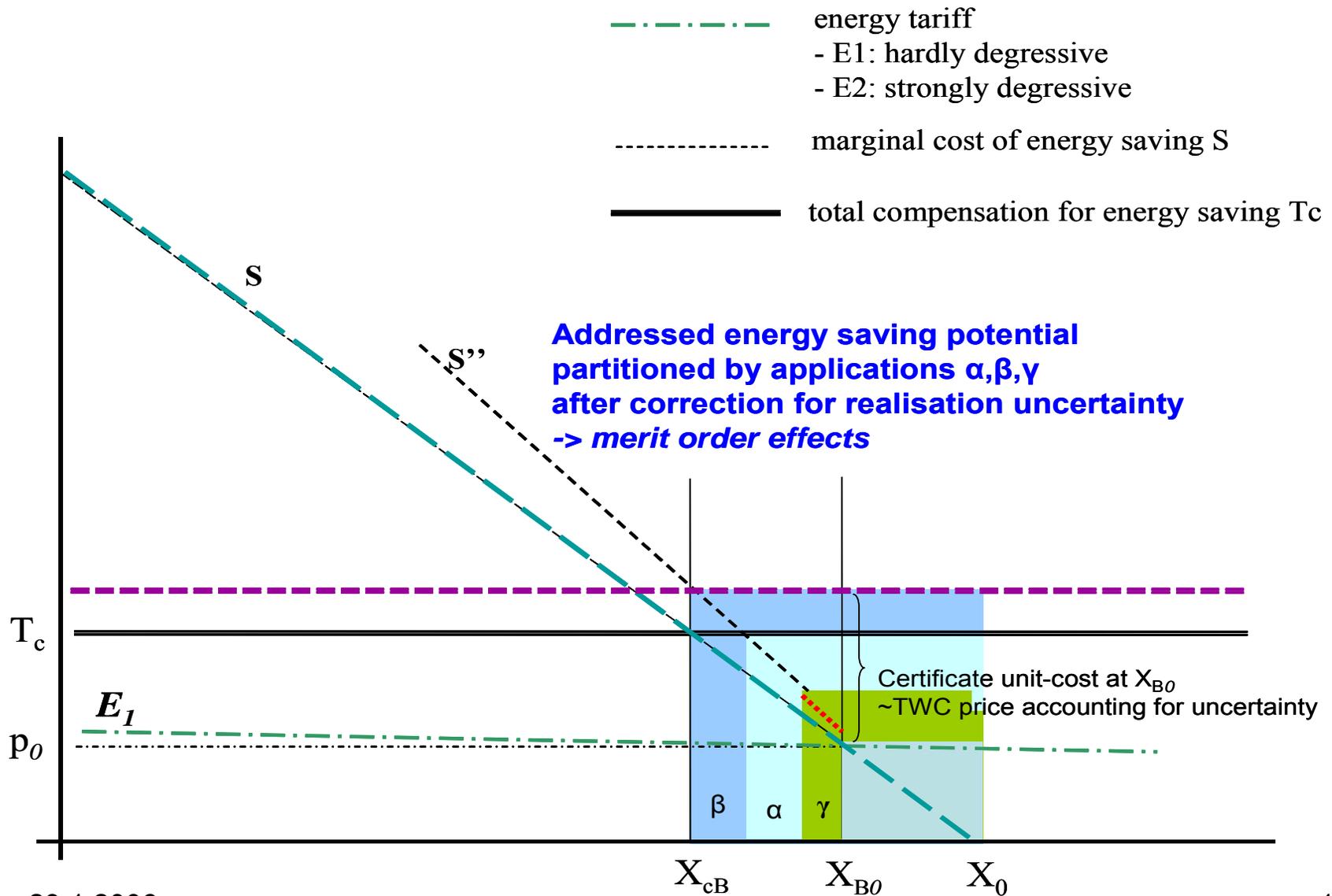
# 4.1 TWC market – TWC price



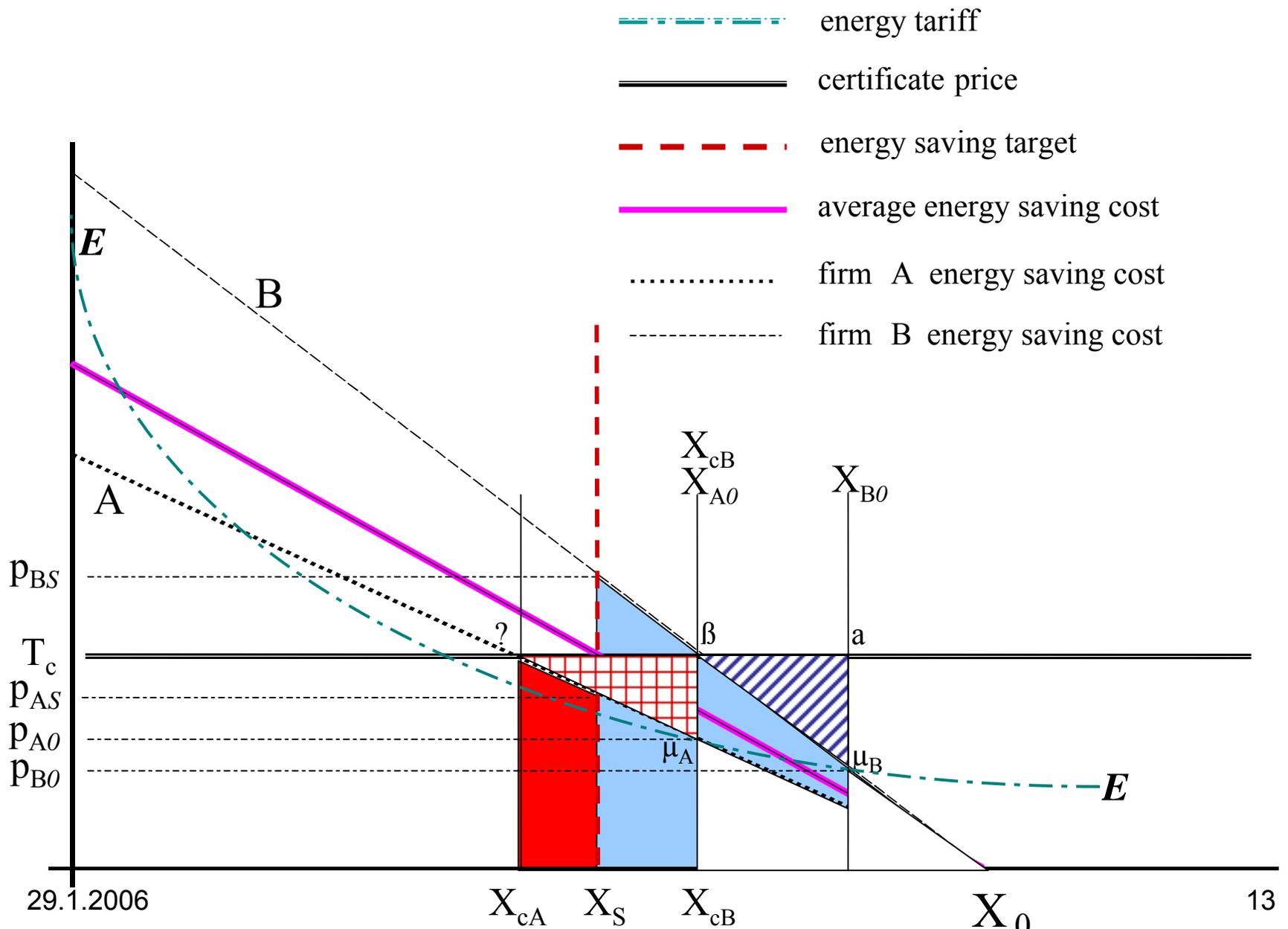
# 4.2 Perceived & 'real' saving cost / additionality



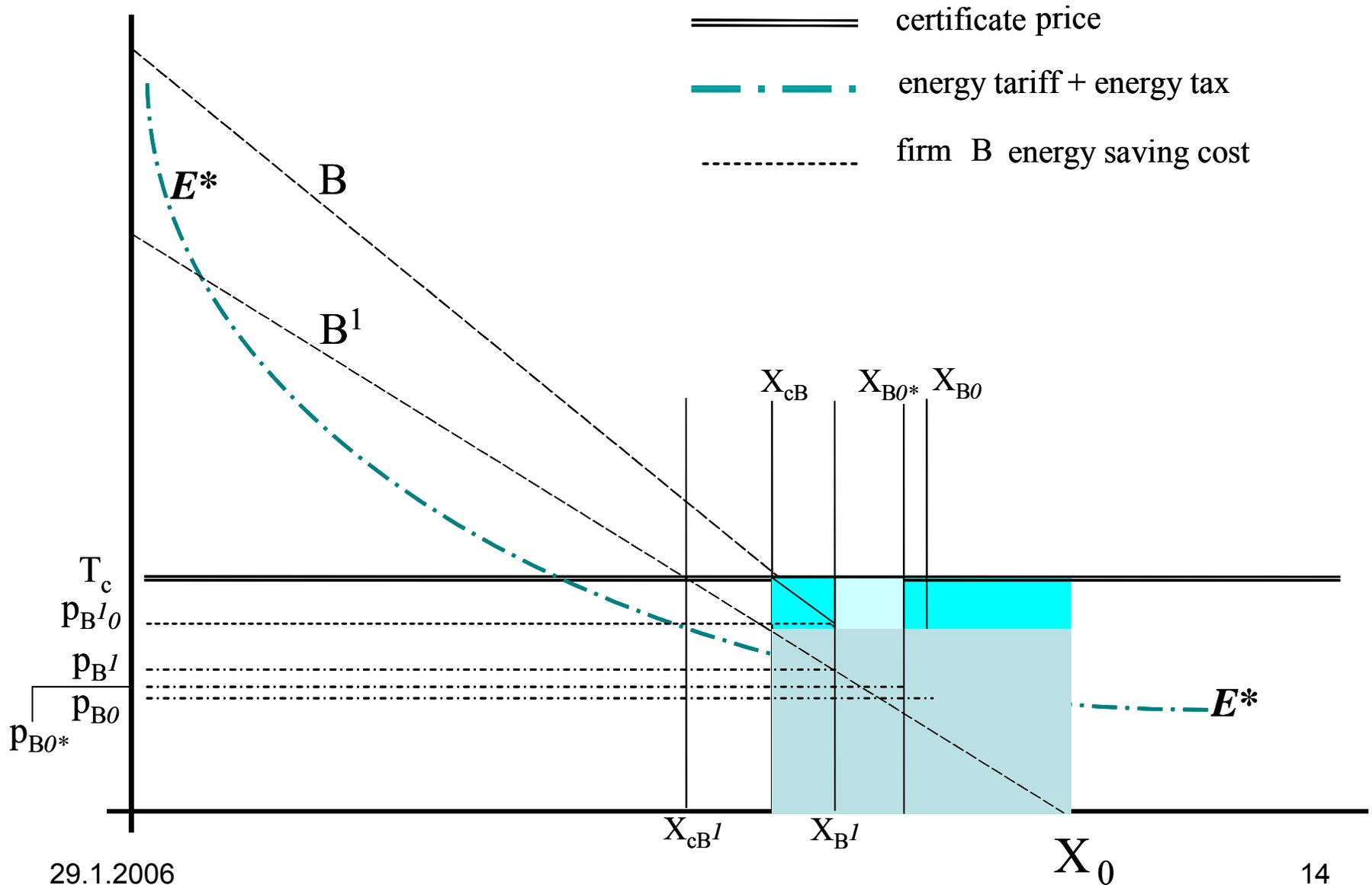
# 4.3 Impact of uncertainty on merit order



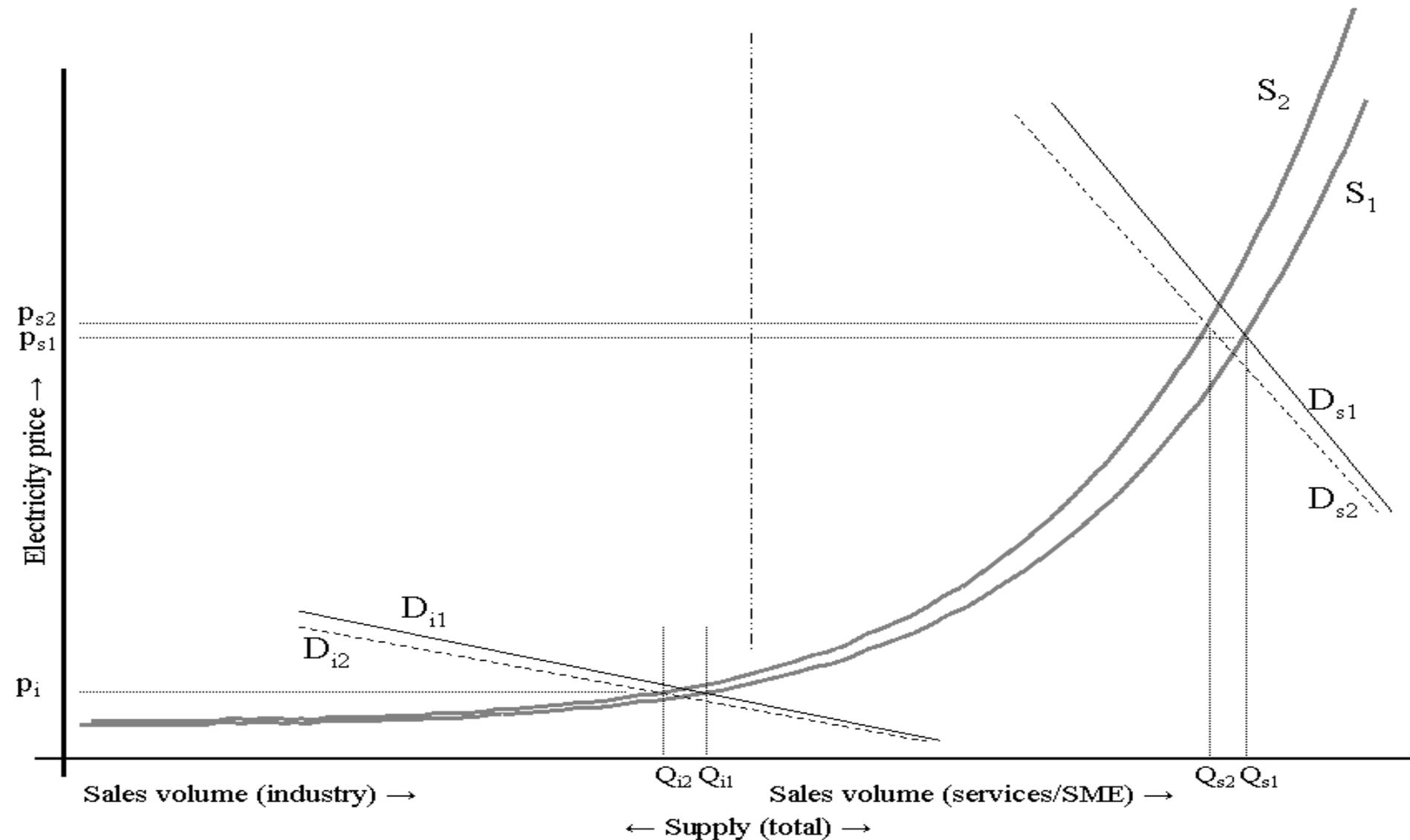
# 4.4 Example of interaction – standard



# 4.5 Example of interaction – tax/subsidy



# 4.6 Interaction with energy market



# 5.1 Main conclusions

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- The best options for energetic *AND* economic efficiency gains from TWC in sectors where neither taxes nor (pure) VA's work well, e.g. service sector buildings, SME's, ...
- the introduction of white certificates tends to:
  - reduce the need for *publicly* funded subsidies;
  - reduce the revenues from energy taxes (assuming TWC's higher effectiveness);
  - reduce the sales of the obligated parties, but... the *impact on profit is case dependent*;
  - increase the administrative cost of obligated parties, but some may find compensation in the power market
- DSM and TWC have significant synergy (EdF)

## 5.2 Main conclusions - continued

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- the introduction of white certificates tends to:
  - need introduction in the same territory in which the power market is operating (e.g. Nordic TWC)
  - The establishment of multi-country TWC areas faces various harmonisation challenges regarding:
    - the existing energy policy instrument portfolio
    - verification, certification, etc. practices (if previous national TWC existed)
    - possible mismatches in economic law (e.g. accounting rules)
    - significant marginal cost level differences may lead to concentration of flows to particular countries
  - **Additionality not necessarily problematic**

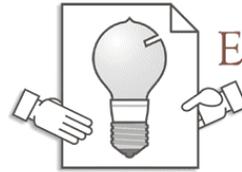
# 5.3 Recommendations

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- Apply TWC:
  - Where taxes are less effective, i.e. outside (heavy) industry (and EU ETS)
  - **INSTEAD OF** investment subsidies
  - and abolish or revise tax deduction options
  - In conjunction with voluntary agreements (but check on targets, baselines, etc.)
  - **INSTEAD OF** *detailed* performance standards, but labelling and minimum standards for new products still helpful
  - and **KEEP / STEP UP** support for energy audits

# Further information

- [www.eurowhitecert.org](http://www.eurowhitecert.org)



EuroWhiteCert  
PROJECT



- Bertoldi, P, and S. Rezessy (2005), *Tradable Certificates For Energy Savings (White Certificates): Practice and Theory*, European Commission – Joint Research Centre, Ispra.
- Harrison D., S. Sorell, D. Radov, P. Klevnas (2005), *Interaction of Greenhouse Gas Emission Allowance trading with Green and White Certificate Schemes*, NERA Consulting, London.
- INvert project consortium (2004), *Rational Use of Energy and Renewable Energy Resources – A Review of Current Policy Strategies and Promotion Schemes, report of phase 1*, submitted to the EU Altener programme, Technical University of Vienna – Energy Economics Group.
- White and Green Consortium (2004) project reports:
  - An Inventory of Innovative Policies and Measures for Energy Efficiency (Phase I)
  - A Qualitative Analysis of White, Green Certificates and EU CO2 Allowances (Phase II)
  - Conclusions and Recommendations

Lund University/Utrecht University/Italian Association of Energy Economists/Sydkraft