

# The EU Energy and Climate Package



## Interactions between EU Policies and Targets and Implications for CO<sub>2</sub> Price Uncertainty

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# Agenda



- Overview of the EU Energy and Climate Package
- Policy instruments for the attainment of targets
- Interactions and market impacts of policies
- Impacts of uncertainty of meeting targets
- Implications for market participants
- Concluding remarks

# 20/20/20 Targets for EU Climate Policy



1. **CO<sub>2</sub>**: 20% reduction relative to 1990 – 30% with international agreement
2. **Renewables**: 20% of total energy consumption – implying some 40% of electricity production
3. **Energy Efficiency**: 20% reduction in energy consumption relative to “business as usual”
  - Targets seem motivated mainly by climate change concerns
  - Other objectives include energy security

# Mix of Policies and Approaches is in Place to Achieve Targets



- **CO<sub>2</sub>** reductions mainly through proposed reformed EU ETS
  - Aim of predictability and stable CO<sub>2</sub> price through EU-wide and long-term cap
  - Increased scope, harmonisation, and elimination of "distortions"
- **Renewable Energy** through binding national targets and Member State policies
  - Patchy policy for transport and heat means focus on electricity
  - **Tradable green certificates** (PL, SE, BE, IT, UK, etc.) and **feed-in tariffs** (DK, NO, DE, FR, IR, etc.)
  - Potential EU-wide trade in certificates / guarantees of origin – but feasibility and relevance not clear (everyone's target is ambitious)

# Mix of Policies and Approaches is in Place to Achieve Targets

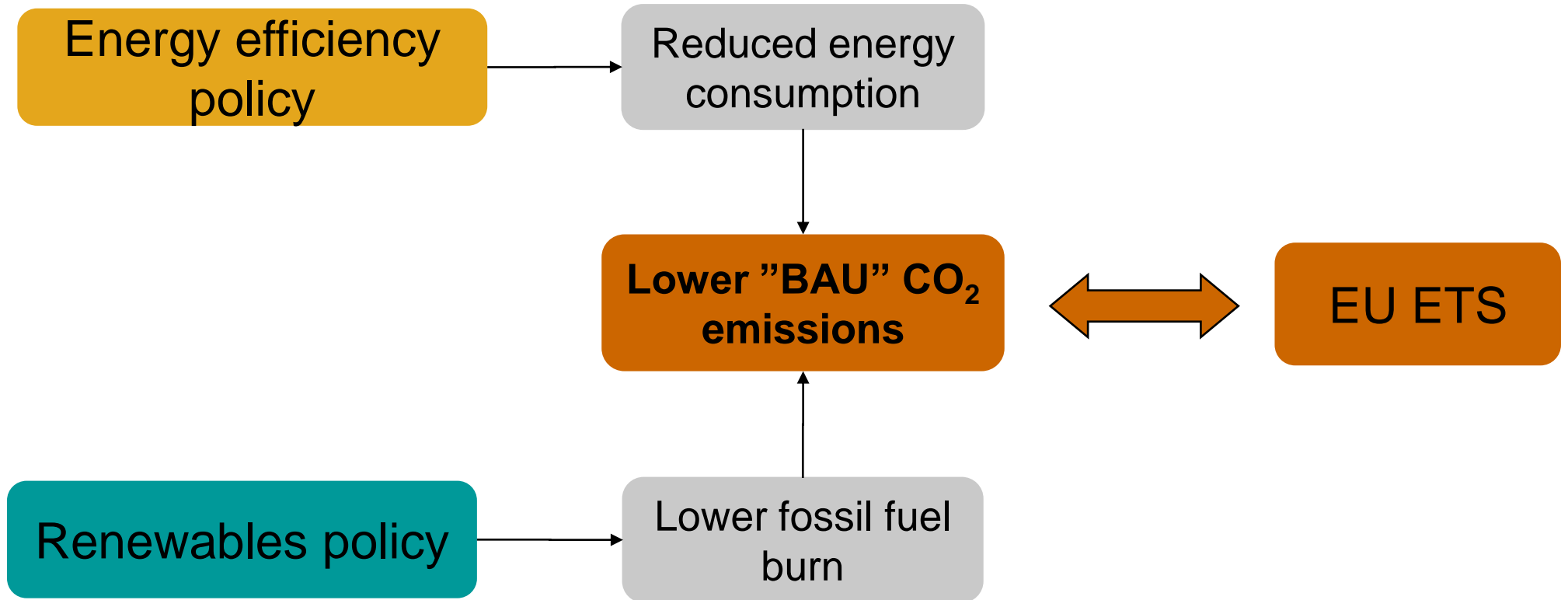


- **Energy efficiency** through “indicative” national targets and action plans
  - No agreement on EU-wide policy but interest in **tradable white certificates** (FR, IT, UK, etc.)
  - Key role in policy mix – but unclear evidence for low-cost savings and checkered policy history
- **Patchwork of other policy** indicate little consensus on “market-based” approach
  - CHP, CO<sub>2</sub> standards for cars, heat sector renewables, biofuels for transport, microgeneration, support for nuclear, etc.

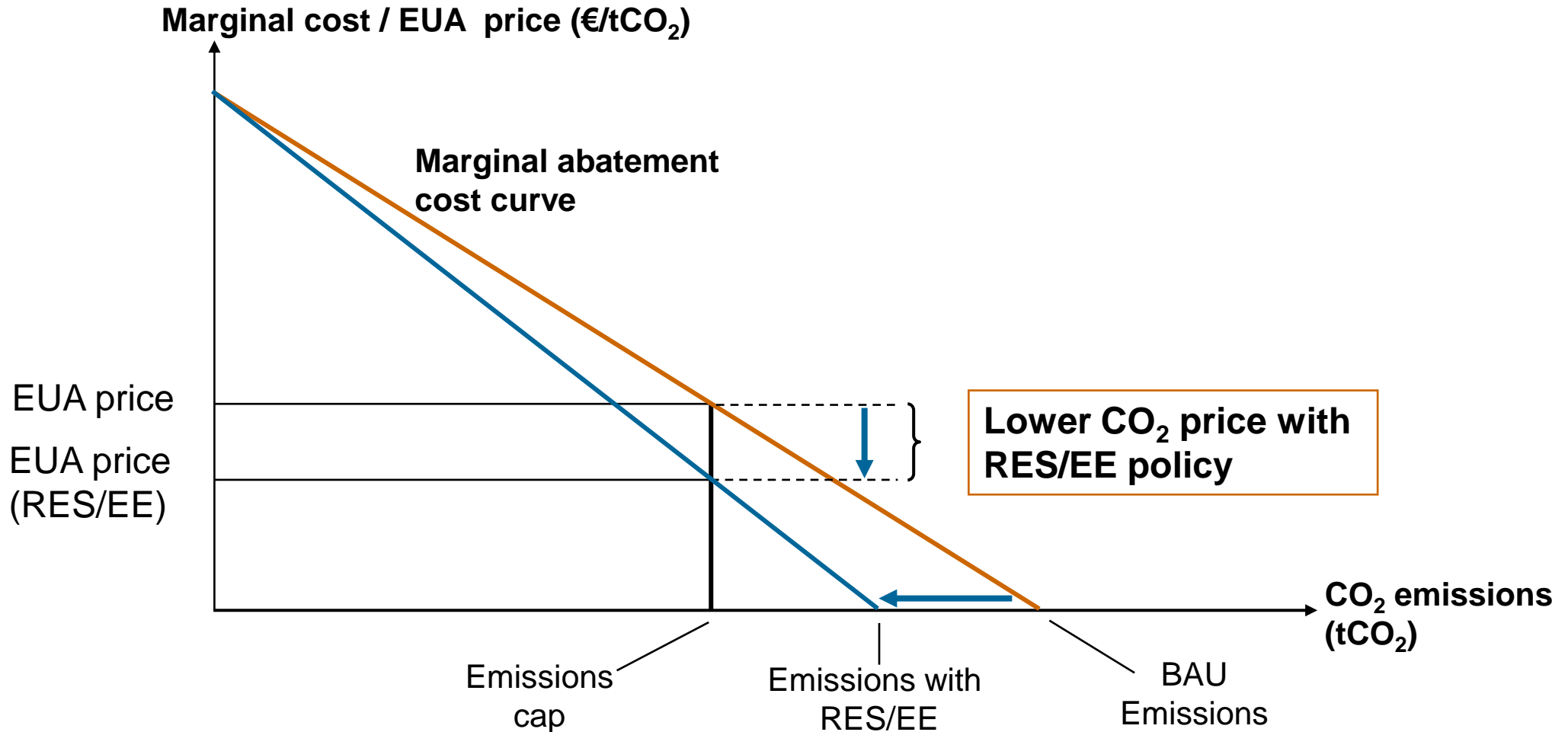
**Multiple policies are in place**

**Interactions between policies add further complexity**

# Policy Interactions: Renewables and Energy Efficiency Affect the EU ETS

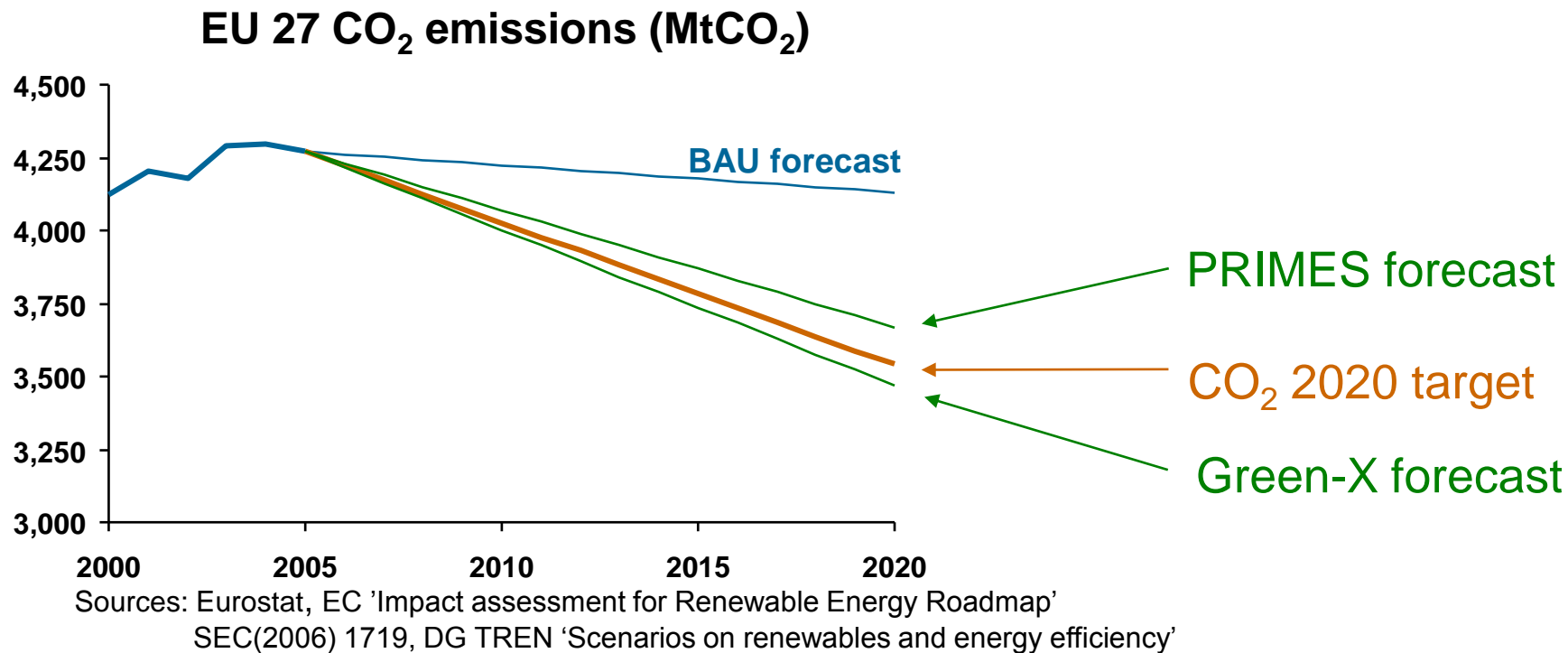


# Impact of RE/EE on CO<sub>2</sub> (EUA) Market



**RE/EE lowers emissions and cost of meeting given emissions cap**  
**EUA price depends on success of renewables and EE policy**

# Policy Interactions Could Be Quantitatively Significant

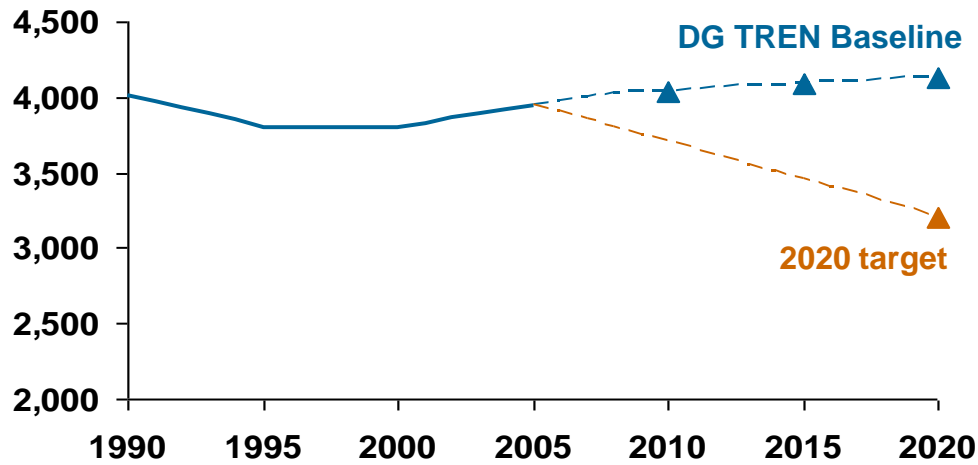


- Commission modelling suggests EU 2020 CO<sub>2</sub> target could be met **entirely** through renewables and energy efficiency
- Implication / unintended consequence: "**No need for CO<sub>2</sub> price**" ?

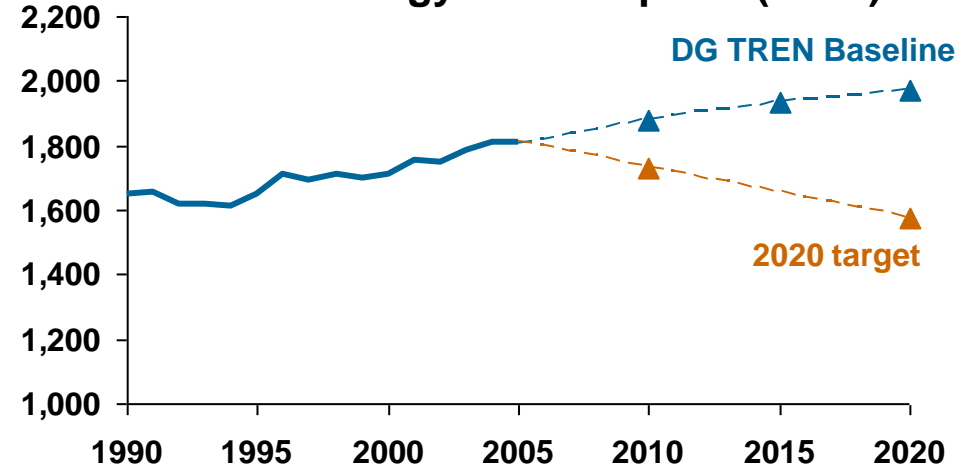


# But ... Achieving the Targets Looks a Tall Order

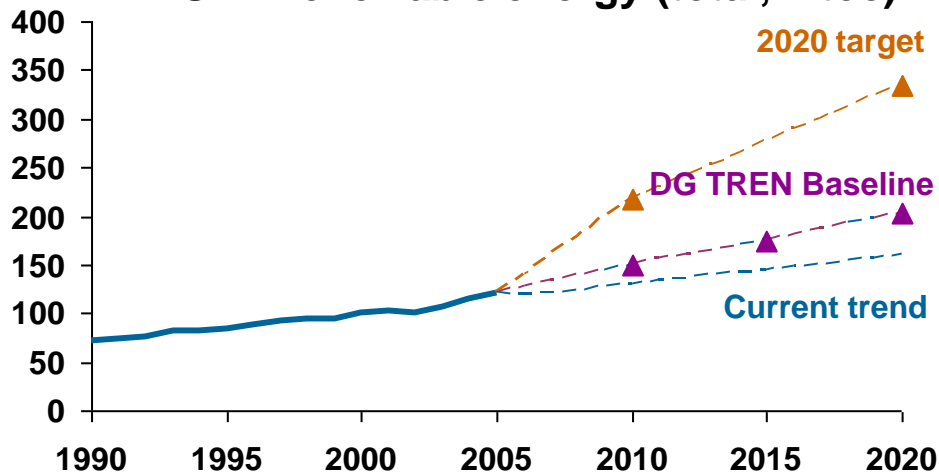
### EU27 CO<sub>2</sub> emissions (MtCO<sub>2</sub>)



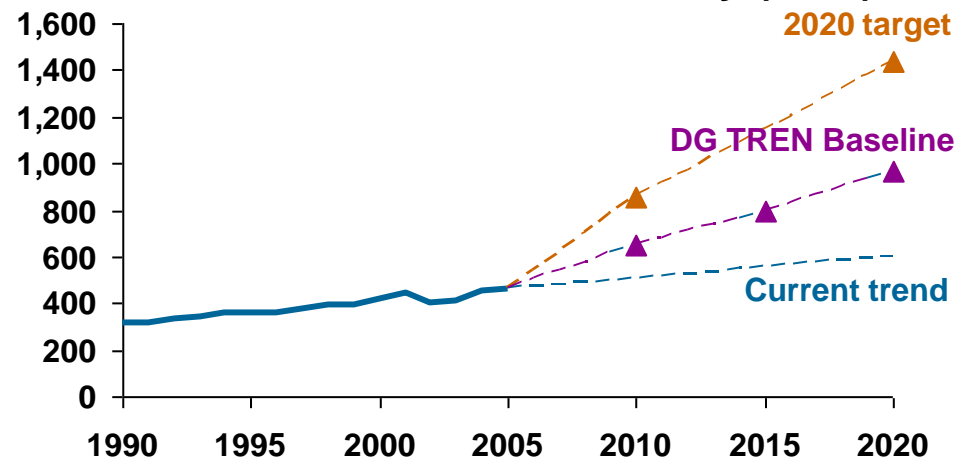
### EU27 Energy Consumption (Mtoe)



### EU27 Renewable energy (total, Mtoe)



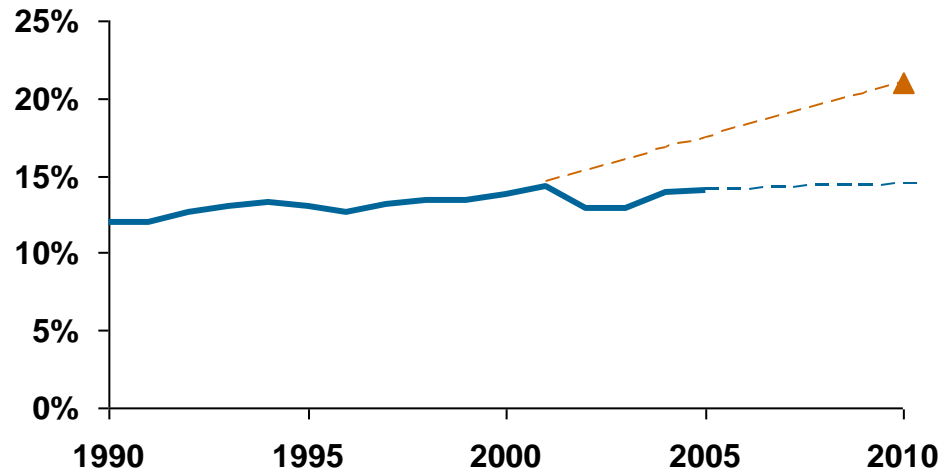
### EU27 Renewable electricity (TWh)



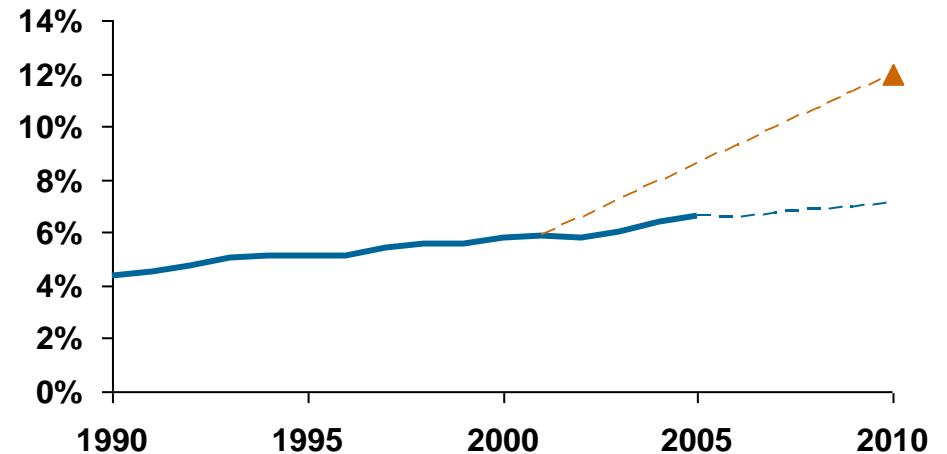
# Attainment of Past Targets Is Proving Elusive



2010 Target EU27 Renewable electricity (TWh)



2010 Target EU27 Renewable energy (TWh)



# Additional Reasons Attainment of Targets Looks Uncertain



- Much of past emissions reductions have been a cheap ride (e.g., “dash for gas”), but costs are increasing
- Hope of low or even “negative-cost” reductions through energy efficiency may prove unrealistic
- Resigned acceptance of high costs not universal in the EU
  - Challenges to Phase II NAPs (modest cuts only), “Hungarian proposal” for EU ETS, “Polish proposal” for auctioning

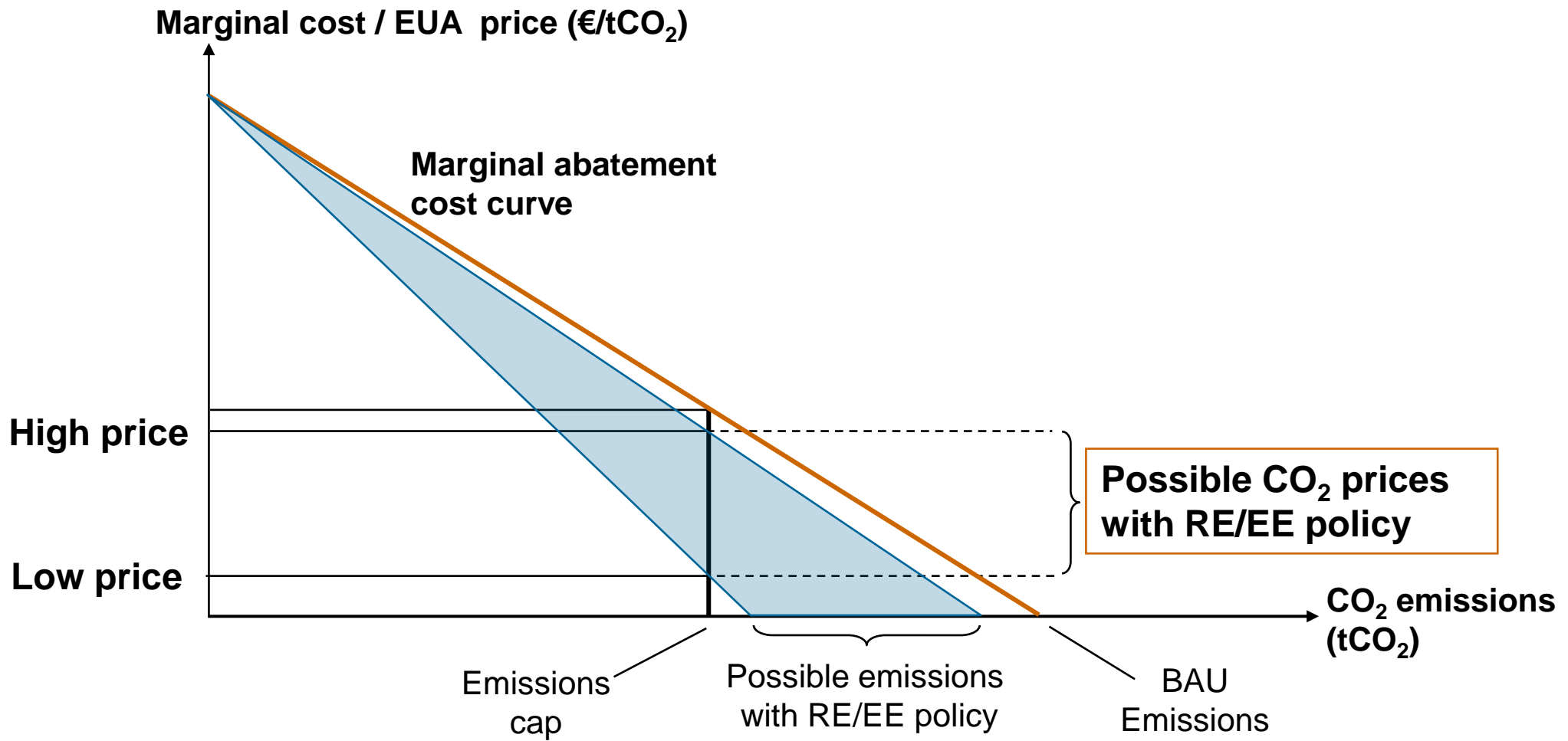
# Additional Reasons Attainment of Targets Looks Uncertain (contd.)



- Revision of transport renewables targets likely given controversy over biofuels
- Unease about industrial competitiveness implications of continued EU unilateral approach
- Unclear consumer / voter tolerance of higher energy prices – *cf.* recent commodity price increases
- Unclear how legally “binding” targets can be enforced on EU level (*cf.* budgetary rules)

**Despite strong apparent current commitment, the attainment of the 20/20/20 targets is highly uncertain**

# Interactions and Uncertain Attainment of Targets Lead to Uncertain CO<sub>2</sub> Price



**Uncertain attainment of RE/EE targets leads to uncertain EUA prices**  
**Note: Price uncertainty greater with firm CO<sub>2</sub> cap**

# Implications: Long-Term CO<sub>2</sub> Price Certainty May Be Elusive



- Major apparent aim of recent (Jan 2008) EC proposals to reform EU ETS is to *increase* price EUA certainty
    - Longer phases, set cap until 2020
    - Introduce full banking and some borrowing
    - Lay out rules for CDM/JI or similar credits
    - Pre-defined allocation schedule until 2020
  - 20/20/20 interactions may undermine these efforts:
    - Modelling suggests very low CO<sub>2</sub> prices possible if RE/EE targets were met
    - Current trends, past performance, high cost suggest targets may not be met—but gulf between targets and results highly uncertain
- **Wide range of CO<sub>2</sub> prices possible under 20/20/20 approach**

# Implications: Challenges for Current Assets and for Investment



- Impacts on asset values, especially coal
  - Renewables and energy efficiency imply shrinking market for conventional generation – but by how much?
  - Uncertain CO<sub>2</sub> price leads to uncertain generation and net revenues
  
- “Caveat investor”
  - Significant new capacity required in EU, but unclear how much will be met by renewables
  - Planning for new fossil generation? Amount? Technology?
  
- Auxiliary market effects also complicated by interactions
  - E.g., competition for biomass resource, interaction with fuel prices

# Concluding Remarks



- Interactions of renewables/energy efficiency targets and policies with EU ETS risk compromising objective of CO<sub>2</sub> price stability
  - Attainment of RE/EE targets highly uncertain, leading to CO<sub>2</sub> price uncertainty
- Effects in “other direction” add further complications – level of CO<sub>2</sub> prices influences attainment of RE and EE goals
- General lesson: interactions of market-based and “command-and-control” approaches can yield unexpected results
  - Relevant to a number of current policy proposals (EU, California, etc.)
- Further analysis in NERA study of policy interactions
  - [http://ec.europa.eu/environment/climat/pdf/ec\\_green\\_final\\_report051117.pdf](http://ec.europa.eu/environment/climat/pdf/ec_green_final_report051117.pdf)
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