



get to grips with
**climate
change**



EU-OPEC Roundtable

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Outline

- EU and climate change
- EU Emission Trading System
- Carbon capture and storage
- Fuel Quality Directive



**Integrating Climate Change & Energy
Policies:
a comprehensive Climate and Energy
Package**



Climate Change

“the EU independent commitment to reduce
GHG emissions by at least 20% in 2020
compared to 1990”

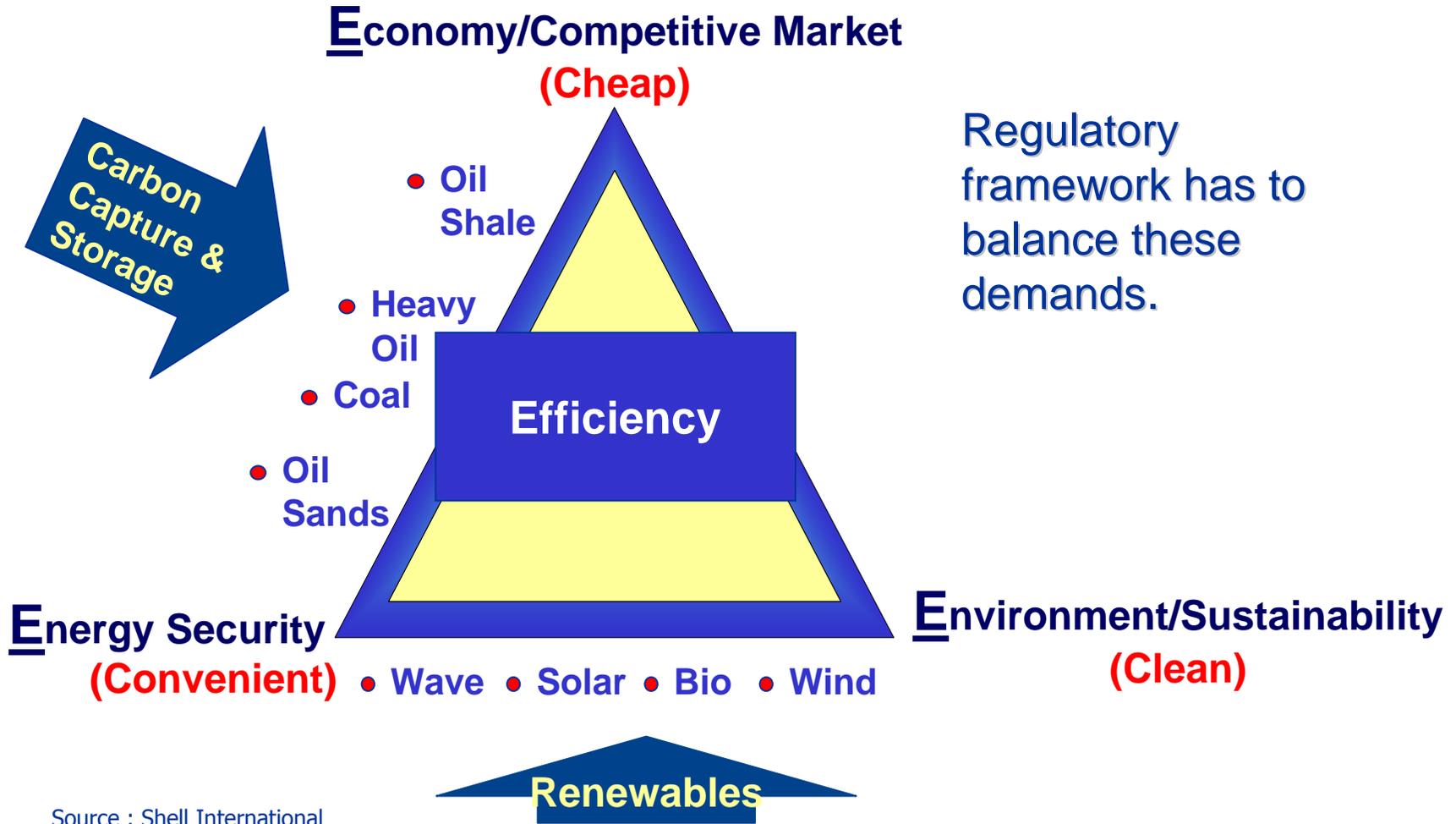
...overarching objective for both energy and
climate policy

&

a role of the EU Emissions Trading Scheme



Framing the energy debate



Source : Shell International

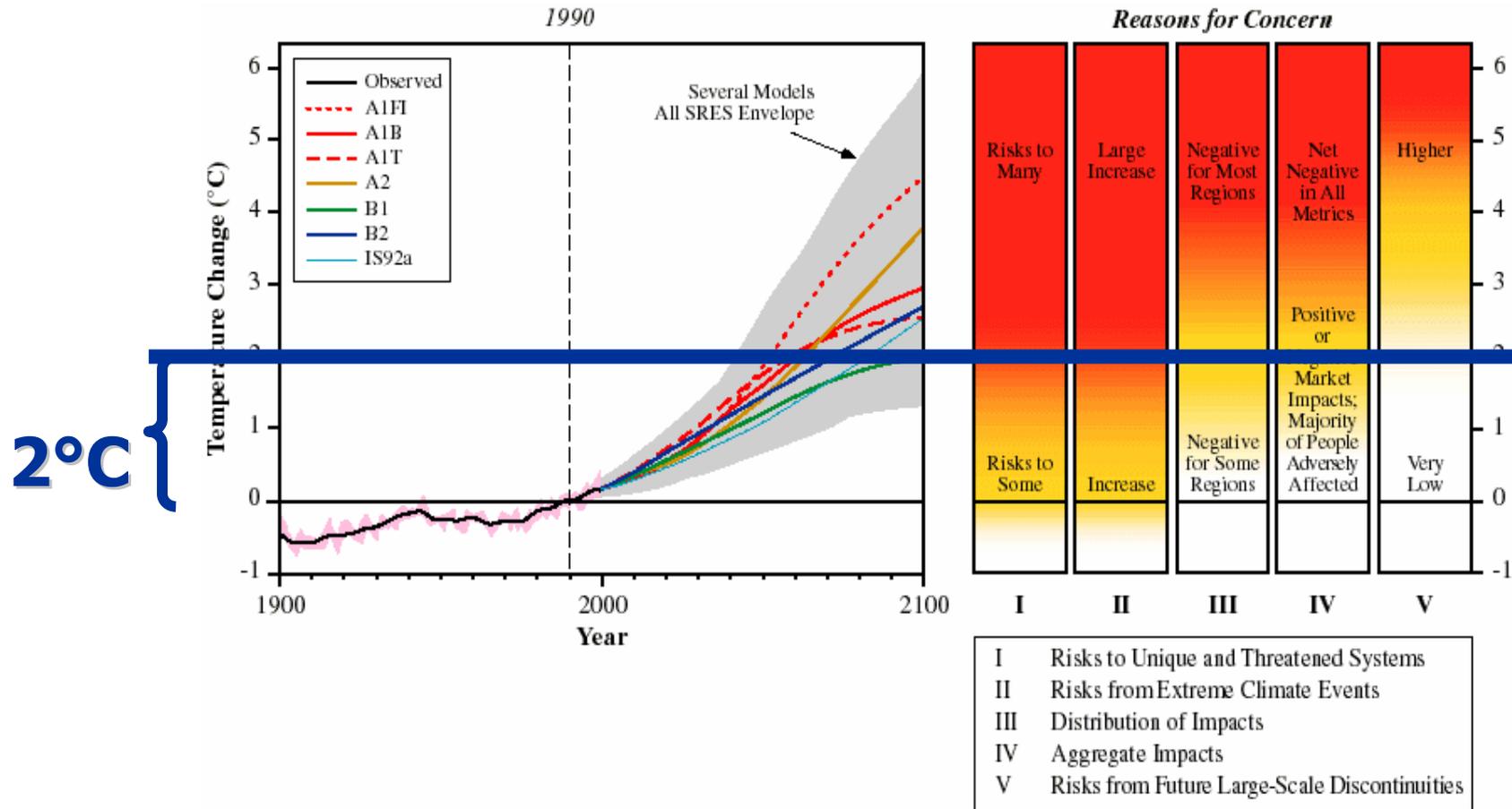


EU's international ambition in Climate Change policy

Limiting
global average temperature increase
to 2 degrees Celsius
compared to pre-industrial levels



Why 2 degrees Celsius? Avoid the red danger zone





The technology is there

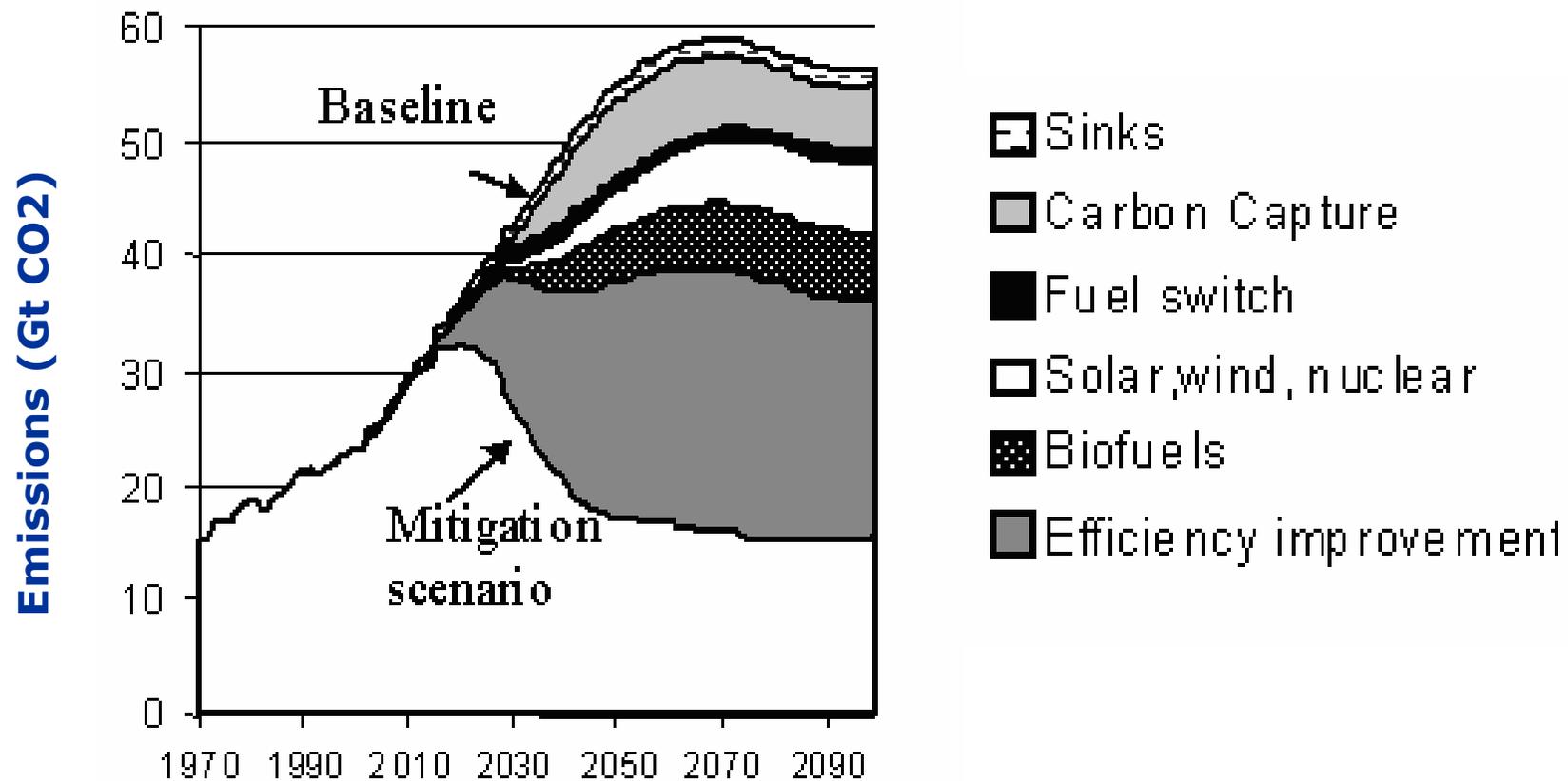
- **Efficiency**
 - Buildings, ground transport, industrial processing, lighting, electric power plants, CHP
- **Decarbonised electricity**
 - Natural gas for coal
 - Power from coal or gas with CCS
 - Nuclear Power
 - Power from renewables
- **Decarbonised fuels**
 - Synthetic fuel from coal, natural gas, with carbon capture and storage
 - Biofuels
 - Hydrogen
- **Fuel displacement by low-carbon electricity**
 - Grid-charged batteries for transport
 - Heat pumps for furnaces and boilers
- **Natural sinks**
 - Forestry (reduced deforestation, afforestation, new plantations)
 - Agricultural soils
- **Methane management**
 - Landfill gas, cattle, rice, natural gas



Develop & Deploy

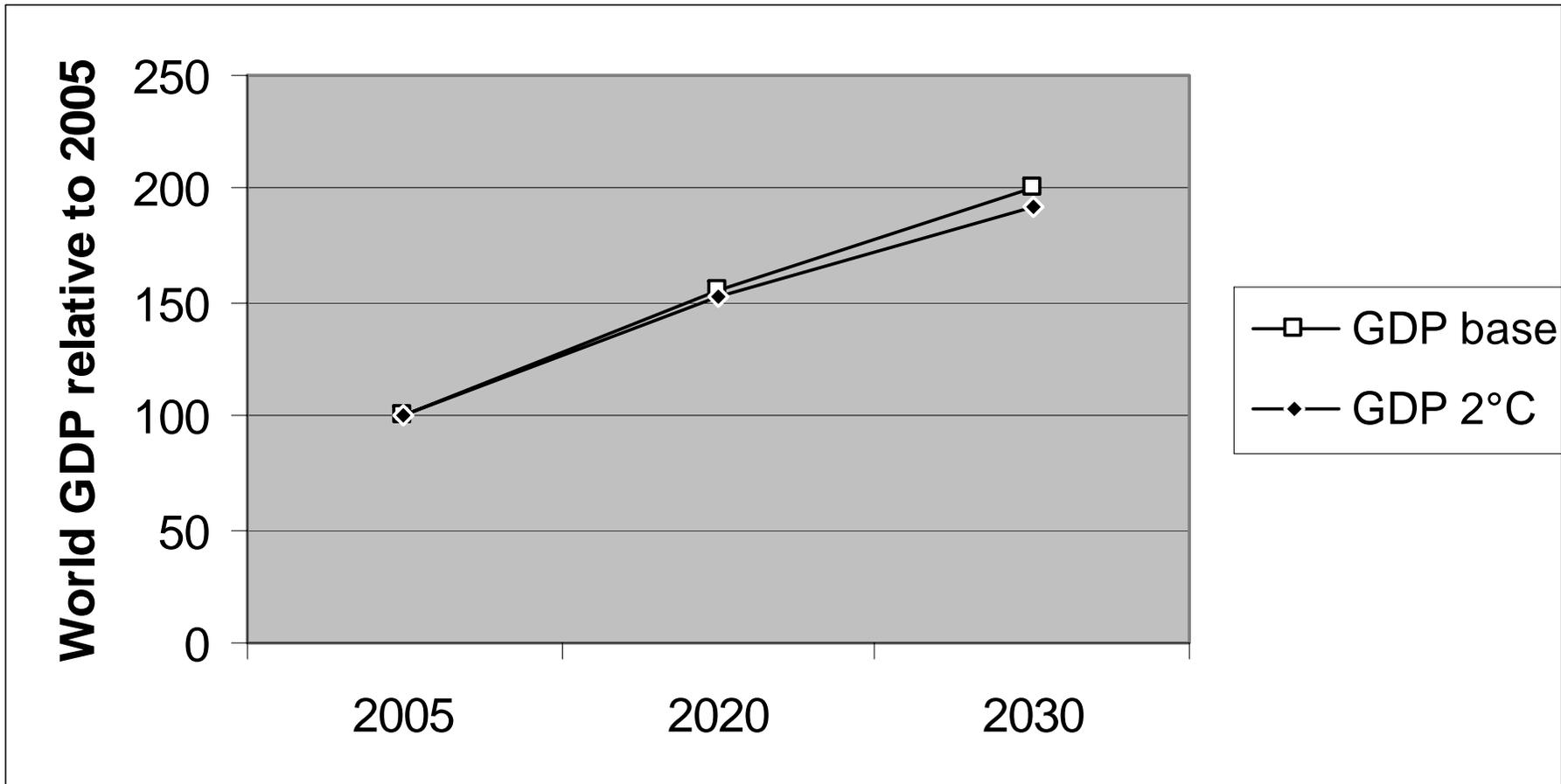


The 'optimal' wedges: There is no silver bullet - use multiple technology options





and...It is economically affordable





Shaping EU Climate change & energy policies

2007 – key milestones

- 10 January 2007: European Commission has put forward a fully integrated policy package covering both climate change and energy policies:
 - “Limiting Global Climate Change to 2°C: The way ahead for the EU and the World for 2020 and beyond”
 - “An Energy Policy for Europe”
- 15 February 2007: Energy Council conclusions
- 20 February 2007: Environment Council conclusions
- **8/9 March 2007: EU Heads of State, Spring Council conclusions**



Climate change & energy policies: agreed actions

- **EU independent commitment: Reduce EU-27 GHG emissions by at least 20% in 2020 compared to 1990**
- **Energy Policy:**
 - Energy efficiency: 20% improvement by 2020
 - Renewable energy: 20% mandatory objective by 2020
 - differentiation of targets between countries
 - flexibility in target setting within a country between sectors
 - Biofuels target of 10% by 2020
 - Internal market-options unbundling & regulatory powers:
 - Important for functioning EU ETS
 - Overcome hurdles for renewables
 - Sustainable power generation from fossil fuels: 12 large scale CCS demonstration plants by 2015; aiming at near-zero emissions by 2020
 - Strategic Energy Technology Plan
 - Nuclear: member states' choice
- **Climate Strategy:**
 - EU ETS (Review, aviation)
 - Other policies (e.g. fuel quality)
 - Global carbon market (incl. CDM)

**At least
-20 %
CO₂**

**Up to - 5% of GHG
emissions**



EU Emission Trading Scheme



EU ETS – key features

- Applicable since 1 January 2005, for 25 EU countries
- Mandatory cap on absolute emissions across more than 10,000 large energy-intensive installations across the continent
- Covers around 2 billion tonnes of CO₂ emissions, half of EU's total emissions
- Simple and cost-effective approach to reducing emissions, with single market for trading allowances
- Linking foreseen with other emissions trading schemes
- Credits from emission-reducing projects in 168 countries useable by companies for meeting objective (JI/CDM)
- Market volume in 2006 : 18bn Euro



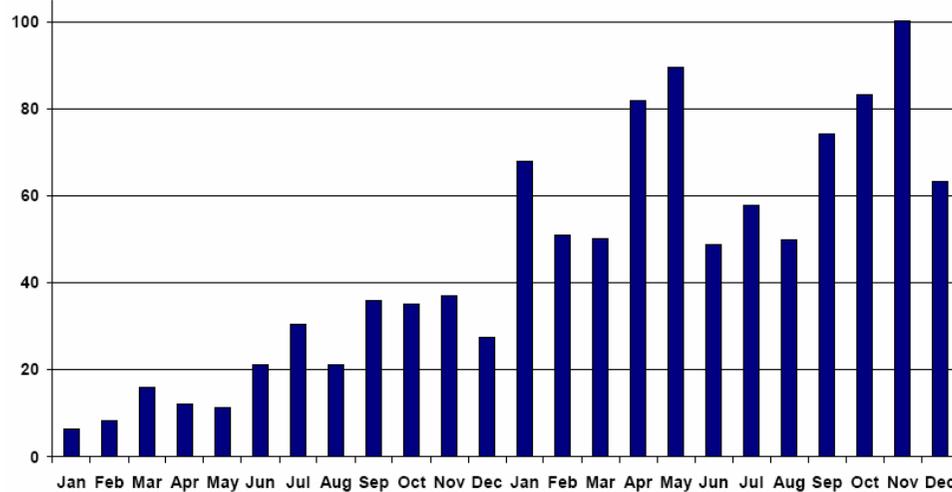
EU ETS – stages of development

- 2005-7: Start-up period
 - Allowances mostly allocated for free (auctioning limited to 5%)
 - Robust emissions monitoring and verification
 - Well-performing electronic registry system
 - Sound market development
 - However, insufficiently ambitious levels for emission reductions
 - Extension of EU ETS through “opt in” provisions

- 2008-12: First commitment period of Kyoto Protocol
 - Auctioning possible
 - Commission approval given to 14 plans
 - Extension of the EU ETS through “the opt-in” provisions

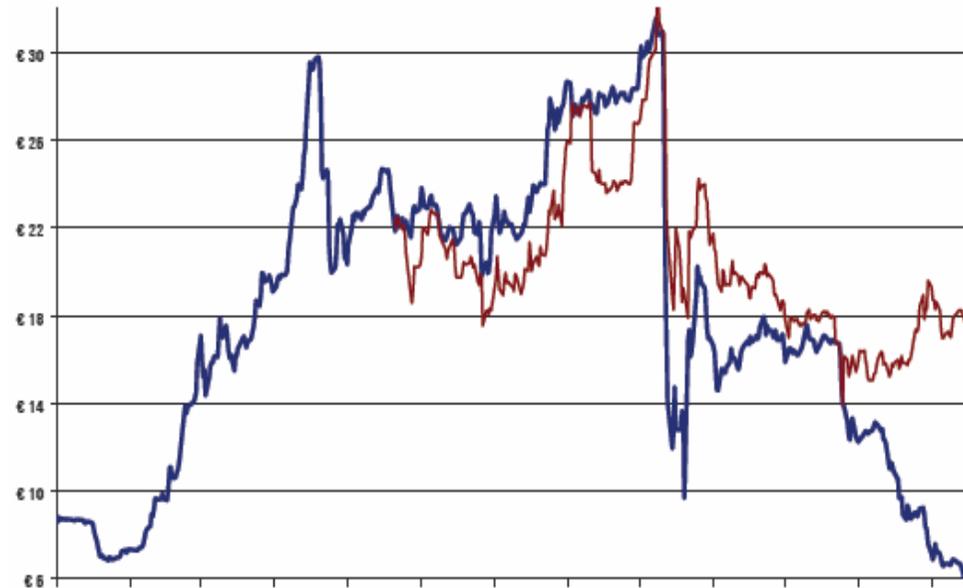


EU ETS - Development of allowance trading in 2005-6



Volumes of allowances traded
(in millions)

Allowances prices
for Phase I (blue line)
and Phase II (red line)





Is the first trading period of the EU ETS a success?

Yes because...

- ... more than 2 years experience and learning*
- ... an active market emerged*
- ... a common database for EU 25 exists*
- ... the infrastructure is established.*

No, because ...

- ... the market is likely not to be constrained.*
- ... some functioning needs to be improved*

Overall:

- ... EU companies now look systematically for low carbon strategies



To what extent will the second trading period be different?

- Fewer allowances in the market
- Experience by all market participants, from the first trading period
- More auctioning
- Market will increasingly mature
- Governments much better in handling market-sensitive data
- Emergence of first trading schemes paralleling the EU ETS (e.g. RGGI in 2009)



Proposal
to modify Fuel Quality Directive 98/70



Revision of Directive 98/70/EC

Main areas of changes

- Sulphur contents
- Ethanol/oxygenates
- GHG reduction
- Other amendments



Sulphur content - proposed

- Road diesel
 - Confirm 10ppm sulphur from 1/1/2009
- Land based non-road fuel
 - One-step reduction to 10 ppm proposed at the latest for 31 December 2009
- Inland waterway fuel
 - Two-step reduction:
 - 300ppm by 31 December 2009
 - 10ppm by 31 December 2011



Oxygenate - proposed changes

Ethanol related changes

- Max content
 - New petrol specification created with higher max oxygenates and overall oxygen content (3.7%)
 - Maximum ethanol content of 10%
- Vapour pressure:
 - Derogation from 60kPa for ethanol containing petrol blends. Level of derogation depends on % ethanol
- Commission commitment to bring forward proposal for stage II vapour recovery legislation



Greenhouse Gas

- Reporting of lifecycle GHG emissions from fuel supplied from 2009
- Mandatory obligation to reduce emissions per unit of energy from 2011.
- Methodology to be developed through Committee
- Reduction obligation proposed:
 - Starts at 1% per year in 2011
 - Obligation increases each year by 1%
 - In 2020 life cycle GHG from fuel would be 90% that in 2010.



Other proposed changes

- Poly Aromatic Hydrocarbons
 - Current 11% maximum in diesel proposed to be reduced to 8%.
- Arctic waiver
 - Proposal clarifies that applies only in coldest Member States
 - Use of the waiver would be subject to Commission approval based on the provision of necessary information



Promoting carbon capture and geological storage (CCS)



Why is CCS important?

- Essential to meet 2°C objective from a global perspective, next to RES, energy efficiency
- Compatible with conventional fossil fuels (coal, gas and oil)
- Facilitates transition to and reduces cost of carbon constrained world
- Increased energy security
- Compatible with new energy technologies, such as hydrogen (stationary and automotive), and plug-in hybrids



Accelerating deployment

- 10-12 demonstration plants in 2015
- Objective supported by industry-led Zero Emission Technology Platform
- Aiming for diversity
 - in technologies (pre- and post-combustion)
 - in fuel sources (coal, lignite, gas, oil)
 - in applications (electricity, refineries, other energy-intensive industries)
- Cooperation EU-China
- Participation in CSLF



Building a regulatory framework

- Remove regulatory barriers :
 - waste
 - water framework directive
 - other ...
- Ensure environmental integrity
 - main issue is permitting (site selection), monitoring & reporting, closure and after care provisions to avoid CO₂ leakage
- Include in EU ETS to reward CCS as a CO₂ abatement option
- Proposal end 2007



More information on how to...

get to grips with
climate change



<http://europa.eu.int/comm/environment>