

econ

MEMBER OF THE PÖYRY GROUP

# The global carbon market and its future

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March 28th, 2008  
Presentation at FEM seminar  
by Berit Tennbakk & Anne-Franziska Sinner

# Agenda

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## **The global carbon market**

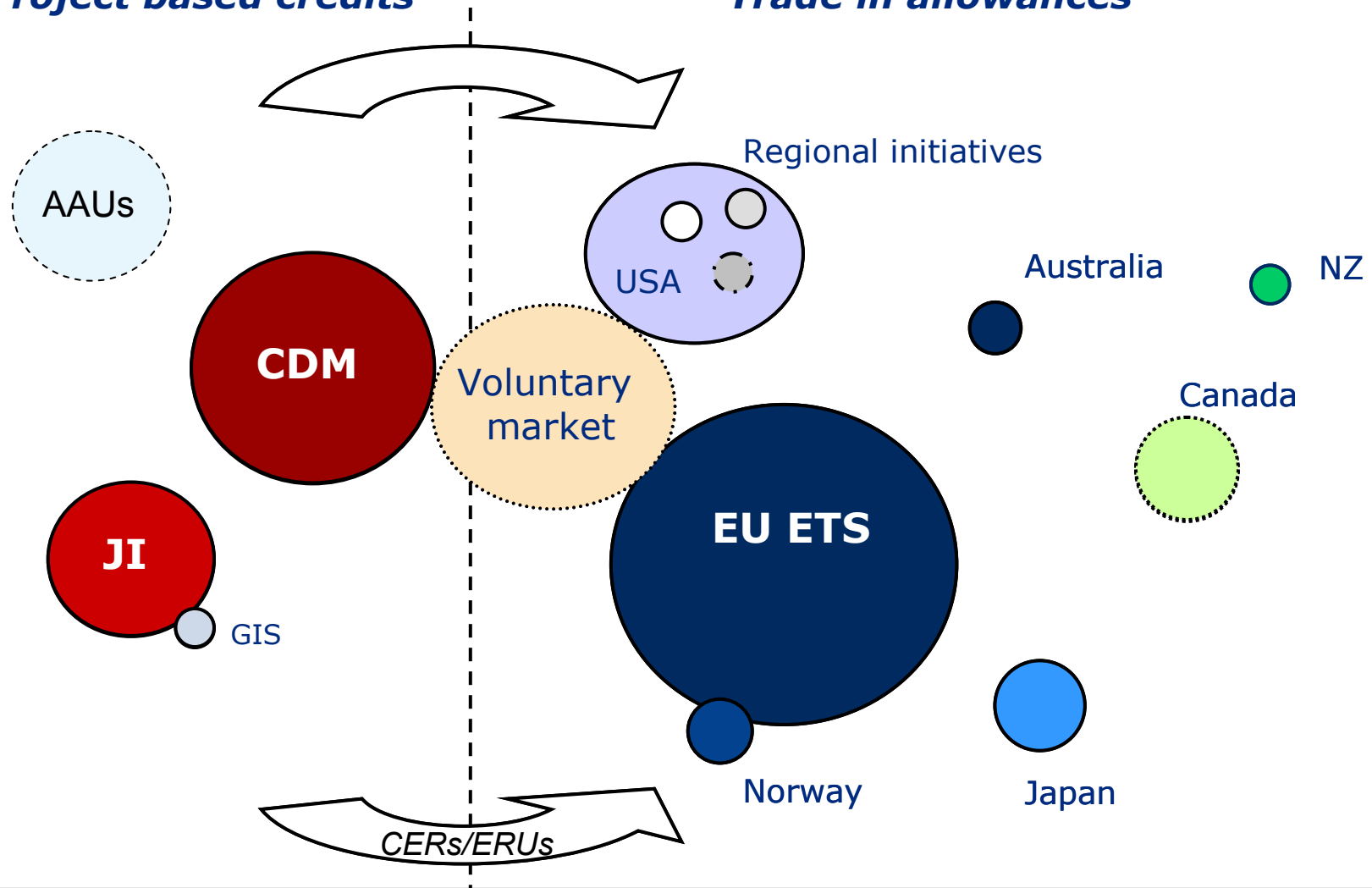
EU climate policies and the EU ETS

Outlook post-Kyoto

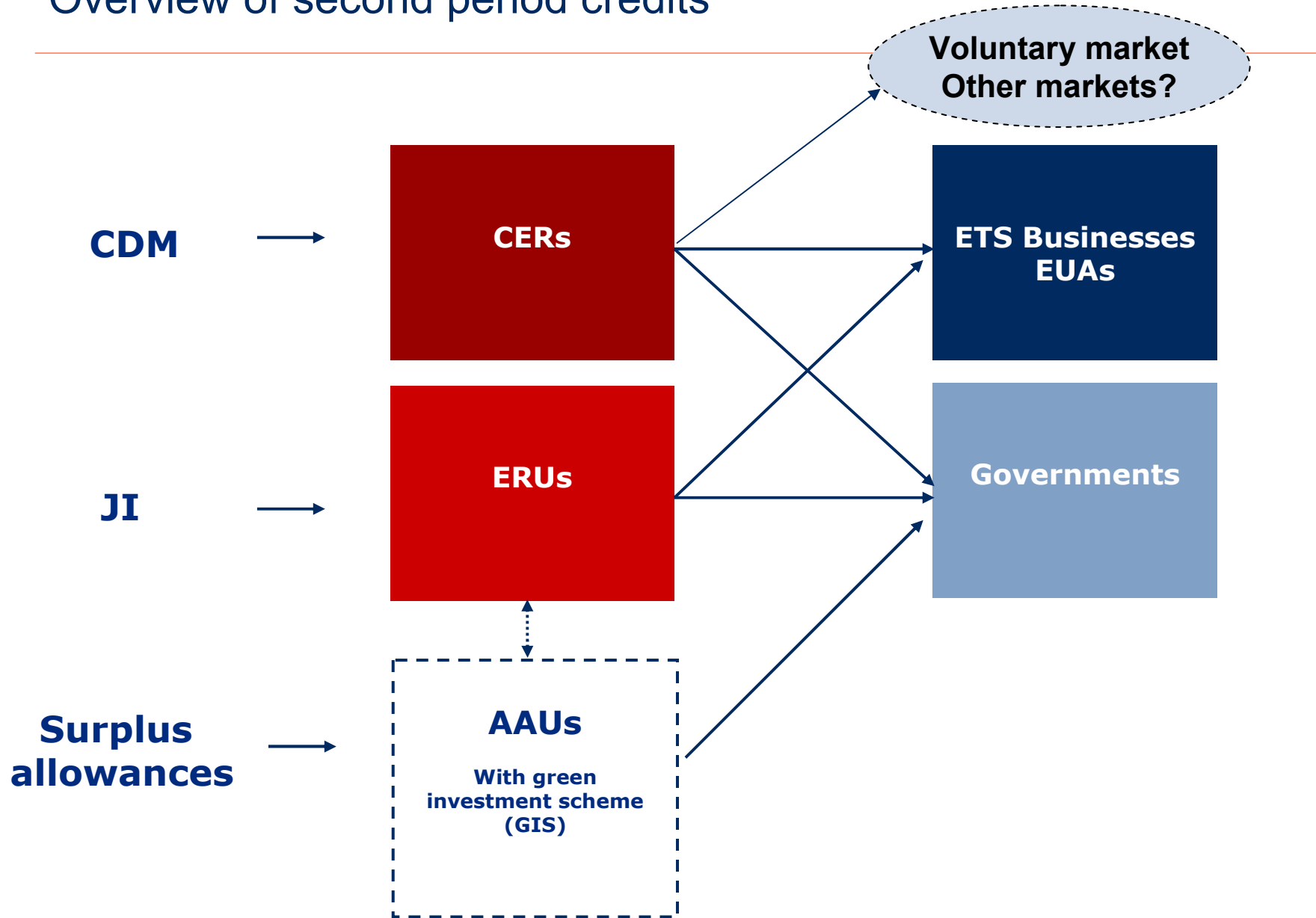
# The global carbon market

**Project based credits**

**Trade in allowances**



# Overview of second period credits



# Agenda

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The global carbon market

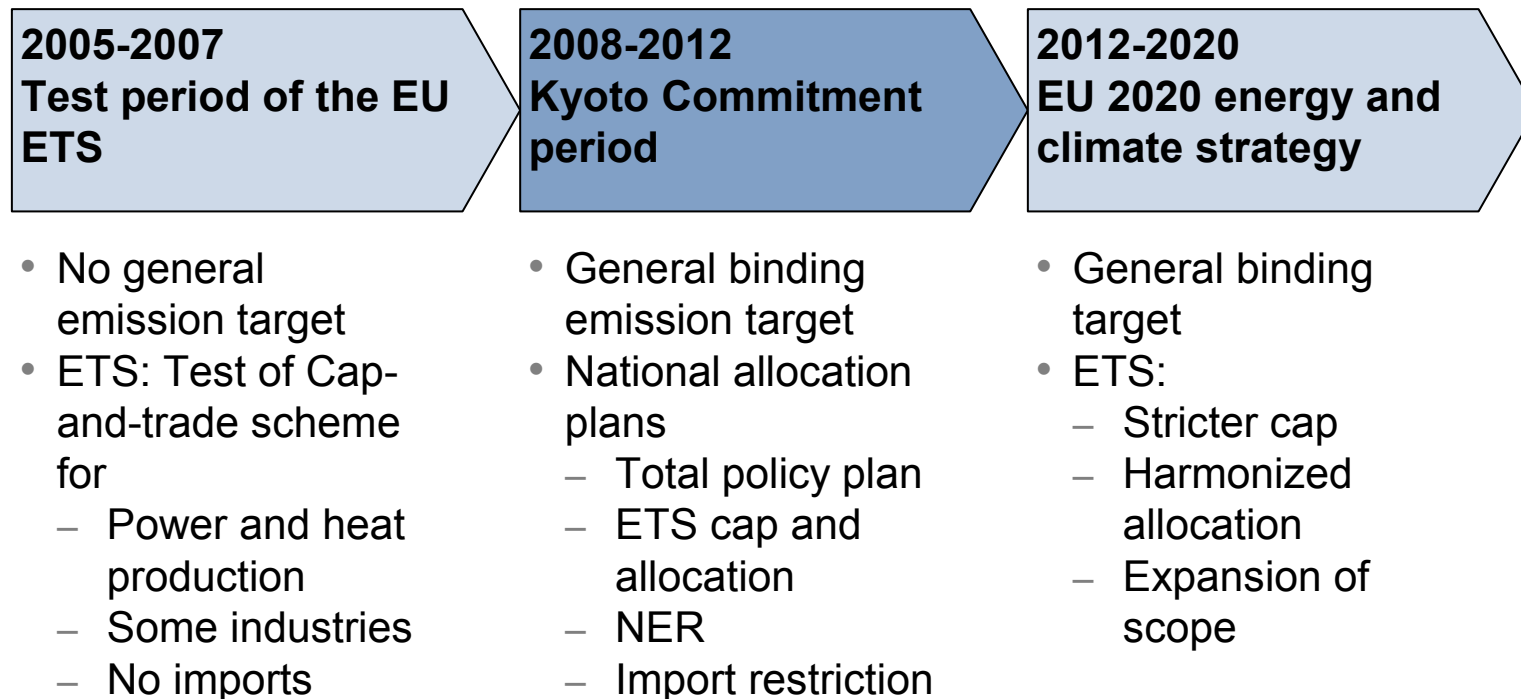
**EU climate policies and the EU ETS**

Outlook post-Kyoto

# Overview of EU climate policies

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- The Kyoto target: EU as a “bubble” :
  - Burden sharing among member states – EU negotiations
  - Burden sharing among sectors – National allocation plans
- The periods



# Climate change policy developments - timeline

## International developments

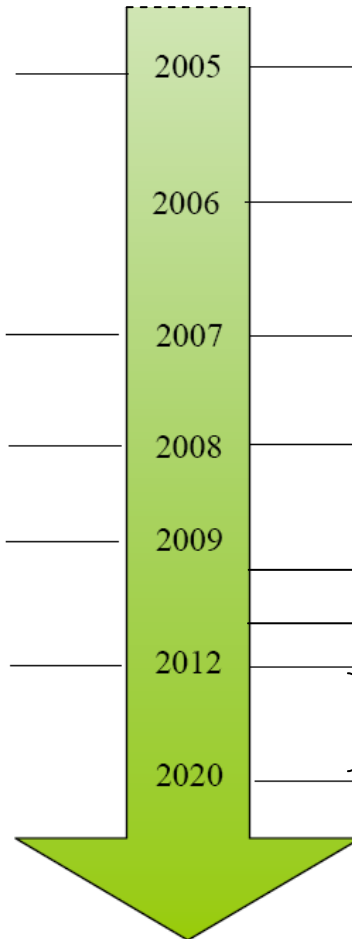
**Feb:** Kyoto Protocol comes into force

**Dec.:** Bali Conference; road-map for post-2012

**1 Jan:** Beginning of first Kyoto Protocol period

**Dec.:** Copenhagen Conference

**Dec.:** End of first Kyoto Protocol period



## European developments

**1 Jan. :** Beginning of EU ETS phase I

**28 Feb.:** Deadline for allocation to installations

**31 Mar.:** Submission deadline for 2005 emissions reports

**15 May:** Publication of 2005 emissions data by the CITL

**30 Apr.:** Deadline for surrendering EUAs for 2005

**Nov.:** EC report on ETS performance; First NAP II decisions

**March-June:** ECCP working group meetings on EU ETS review

**1 Jan.:** Beginning of EU ETS phase II

**23 Jan.:** EC releases draft proposal for ETS Phase III

**31 Dec. 2009:** Final amendment of ETS Directive

**31 Jun. 2011:** Submission of NAPs III

**Dec.:** End of EU ETS phase II

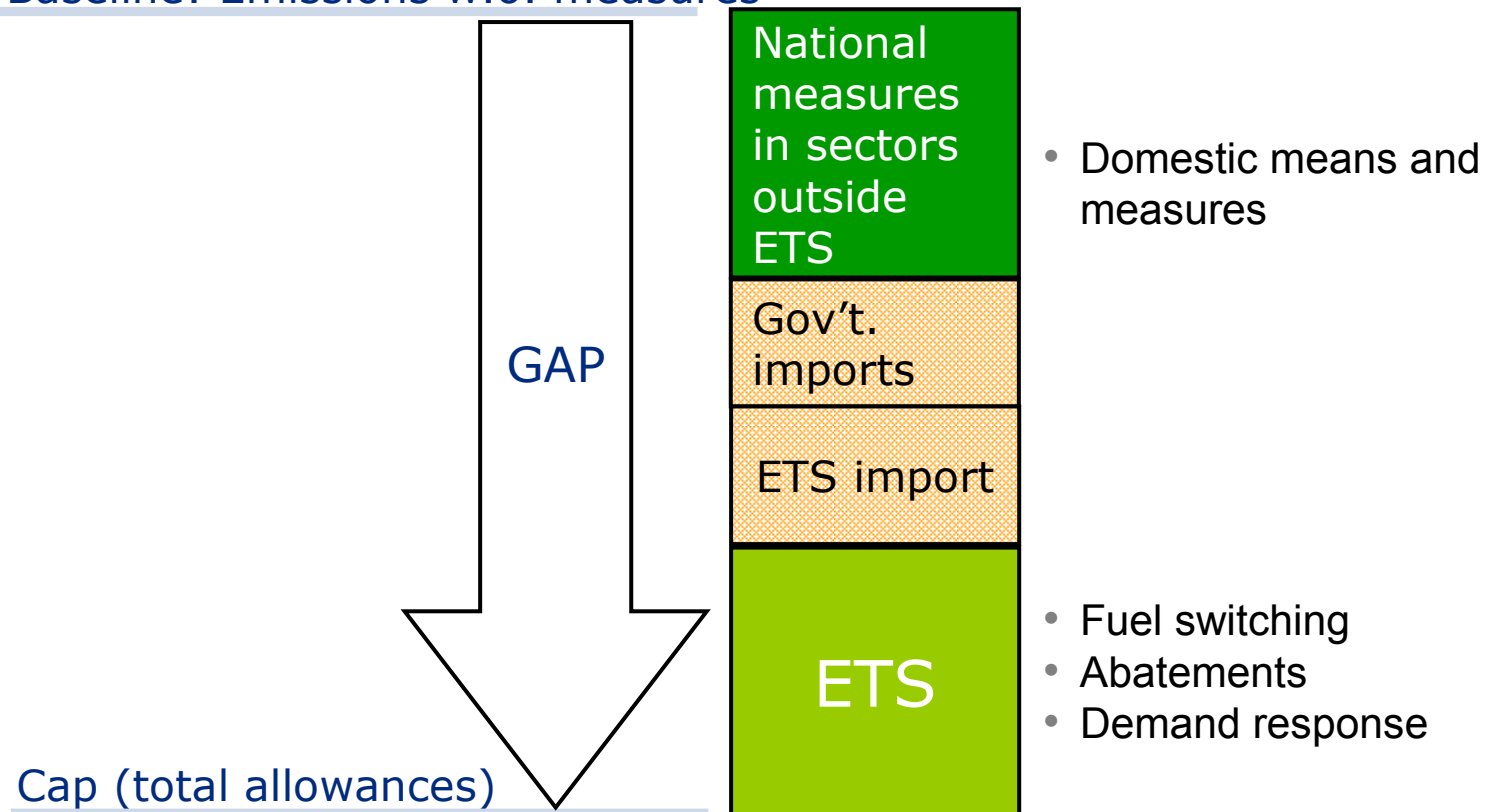
EU ETS phase III: 2013-2020

European 3x20 Objectives

# Binding CO<sub>2</sub> targets according to the Kyoto protocol

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Baseline: Emissions w.o. measures



## The second EU ETS trading period 2008-2012

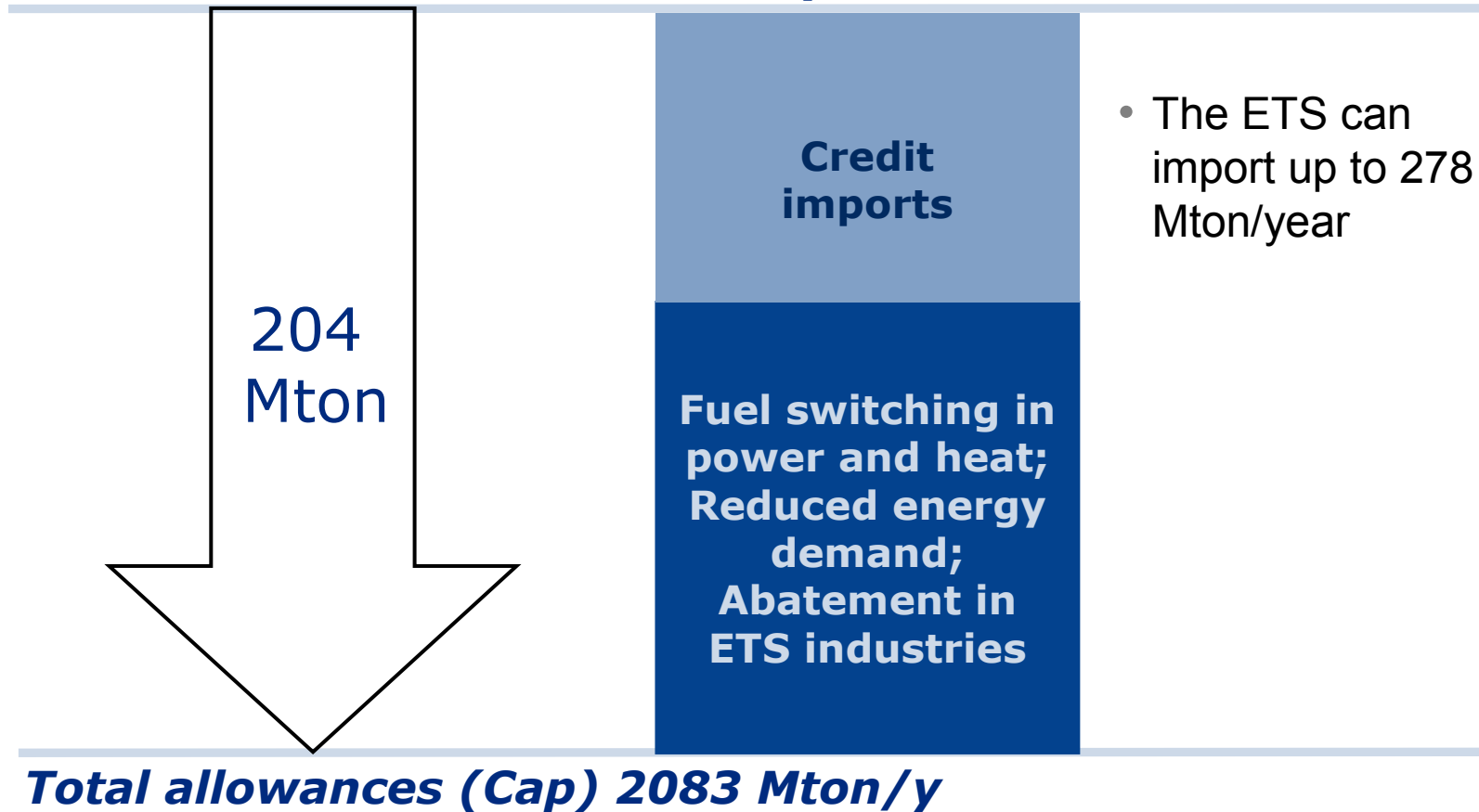
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- EU Commission holds fast on strict allocation:
  - At least 6% less allocation than NAP I
- Credit import limits provide flexibility
  - Actual defined limits seem generous
- Power sector holds major burden
  - Compliance factors are mostly higher than for industry
- Auctioning does not play an important role

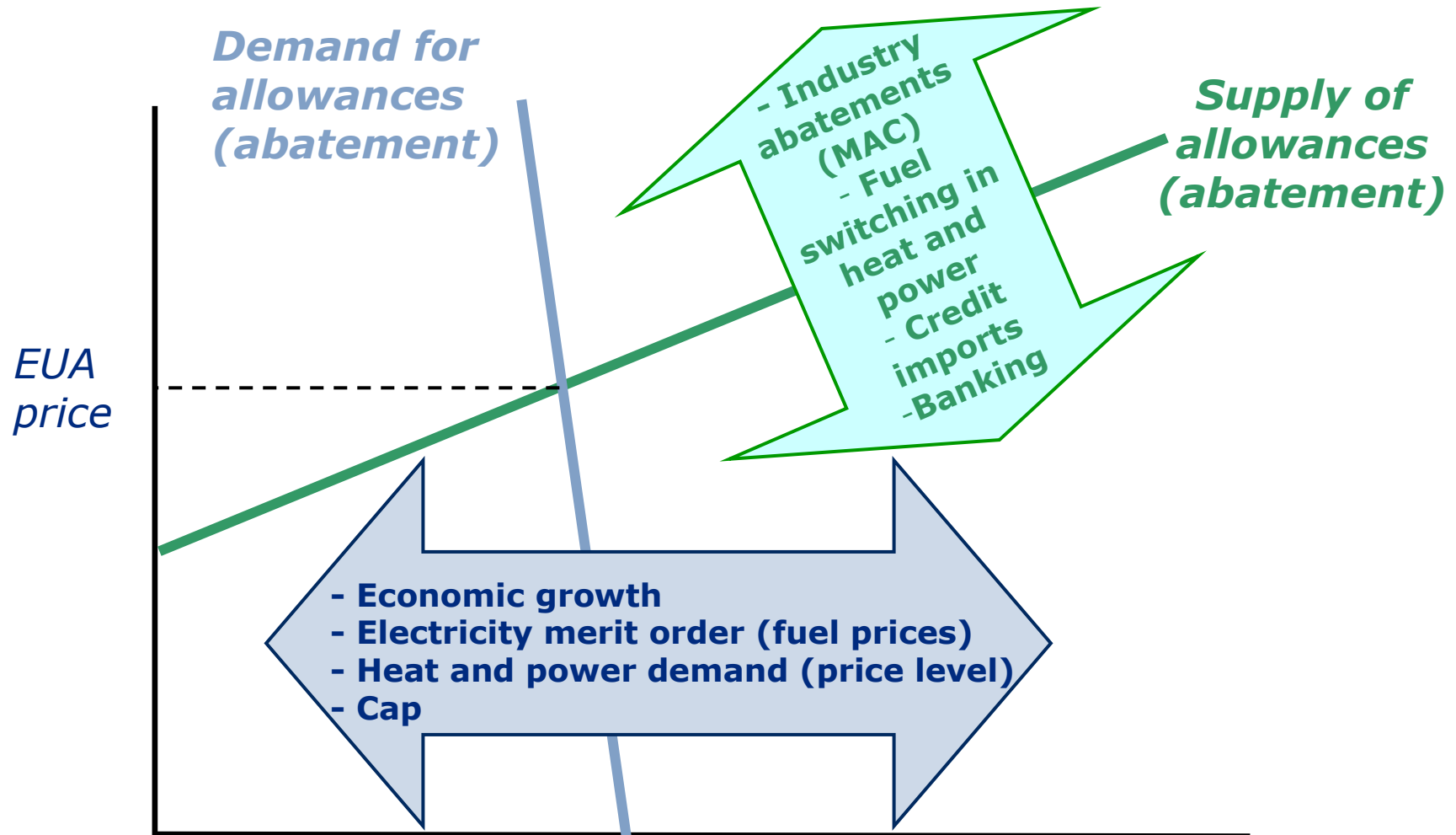
## Burden on the ETS sectors 2008-2012

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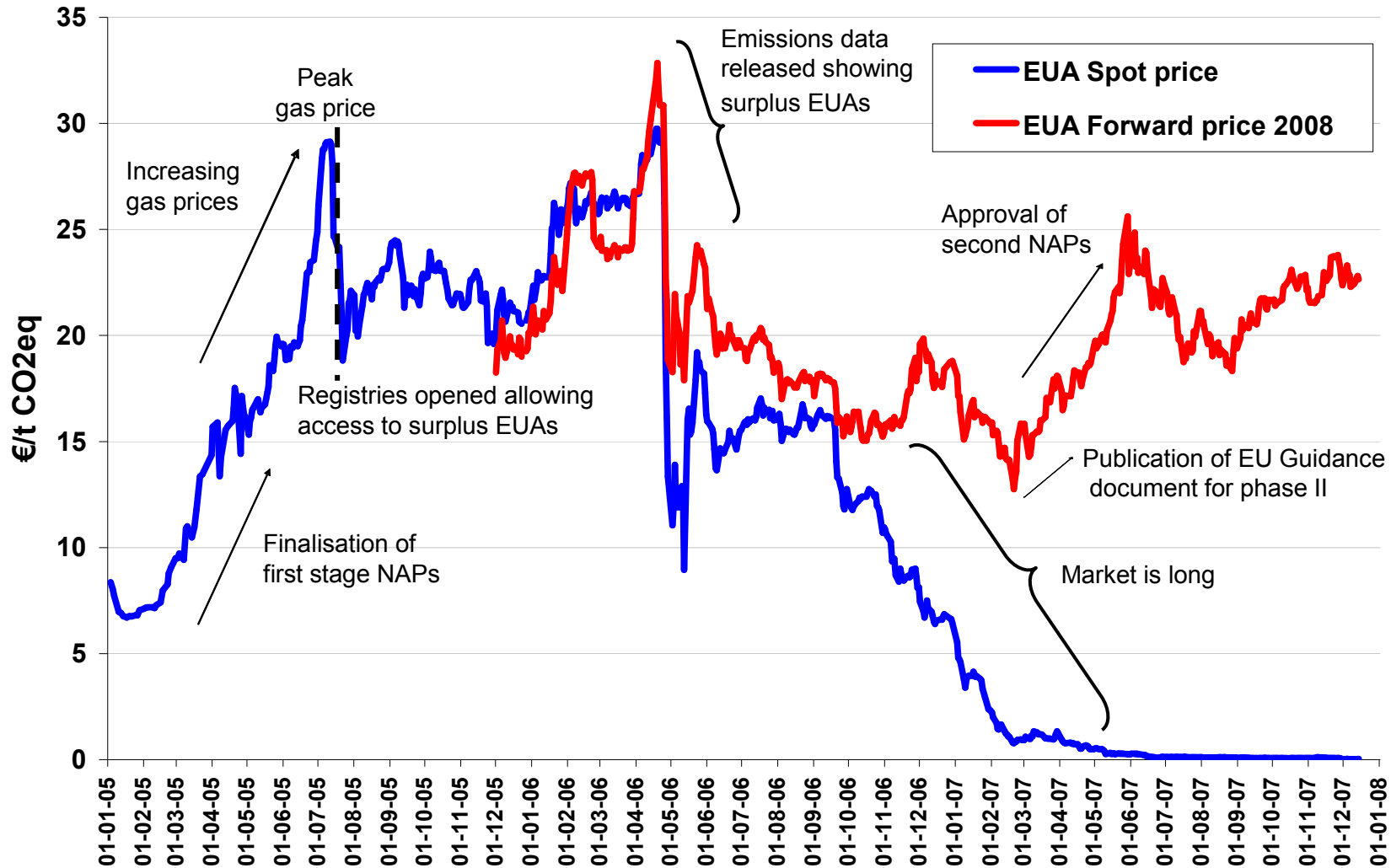
**Baseline emissions 2287 Mton/y**



# Supply and demand in the EU ETS

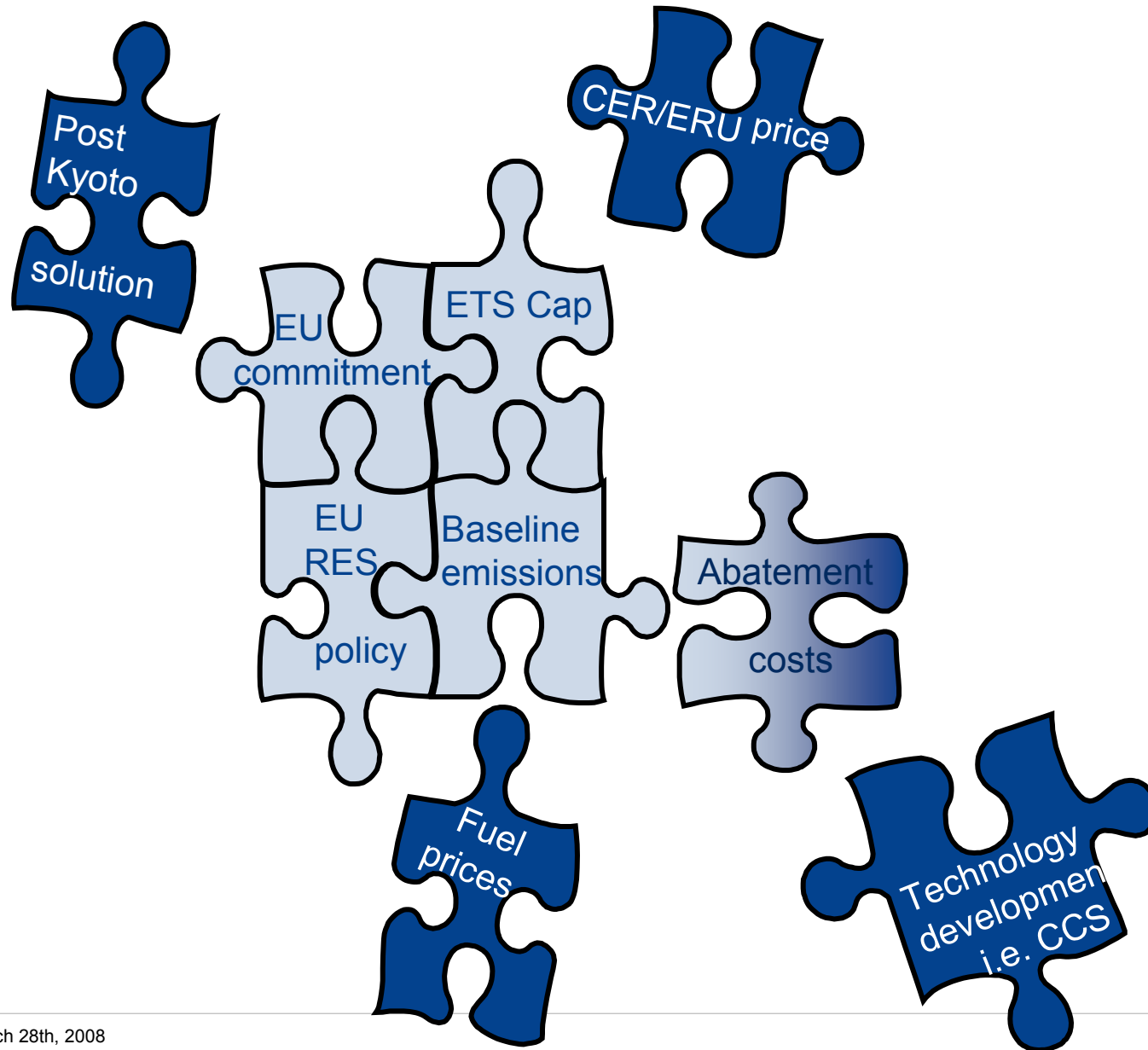


# What's been important to date

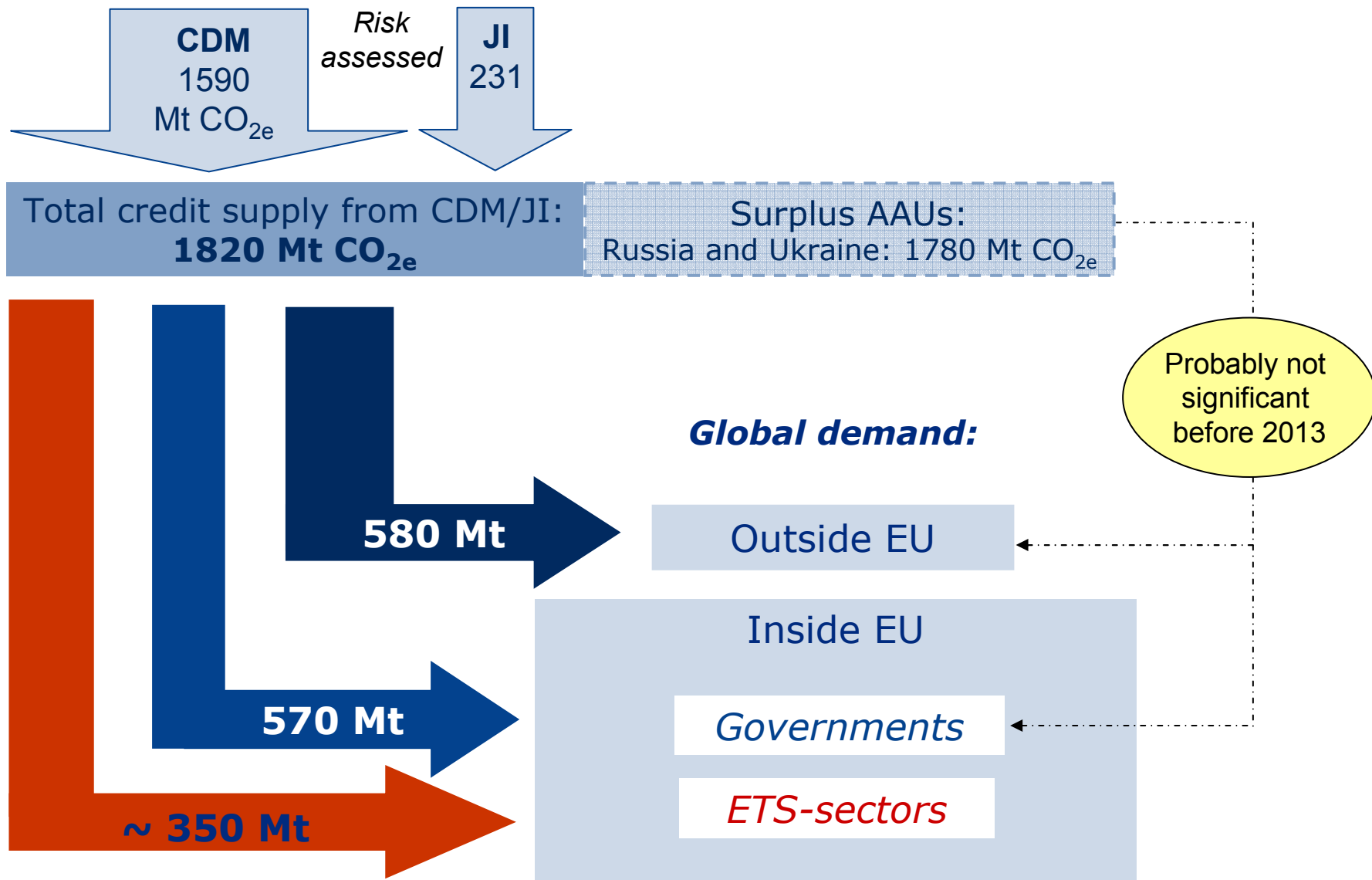


**High price volatility driven by political events and start-up misjudgments**

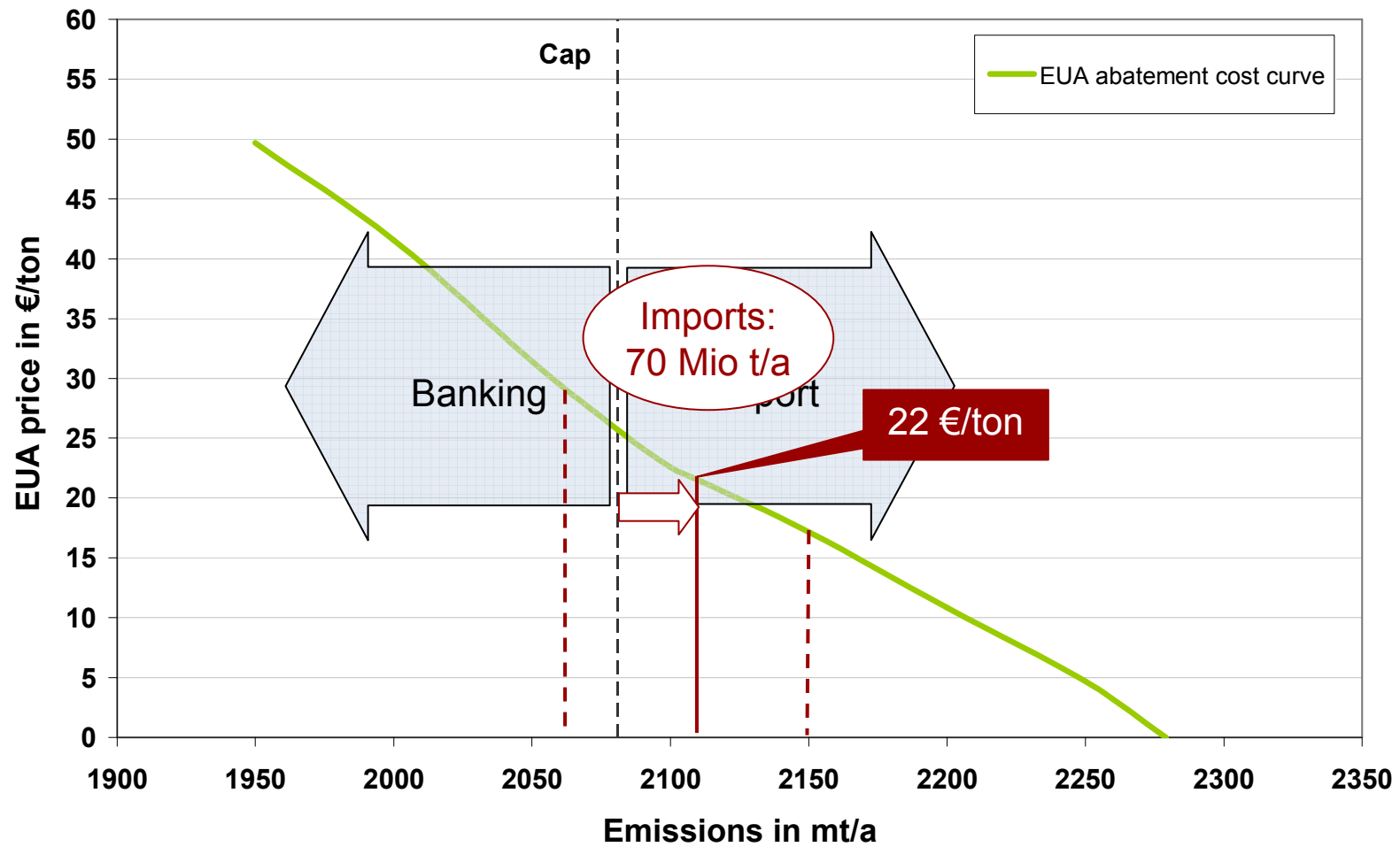
# The EU ETS – Complexity of internal and external driving forces



# Supply and demand for CERs and ERUs: 2008-2012



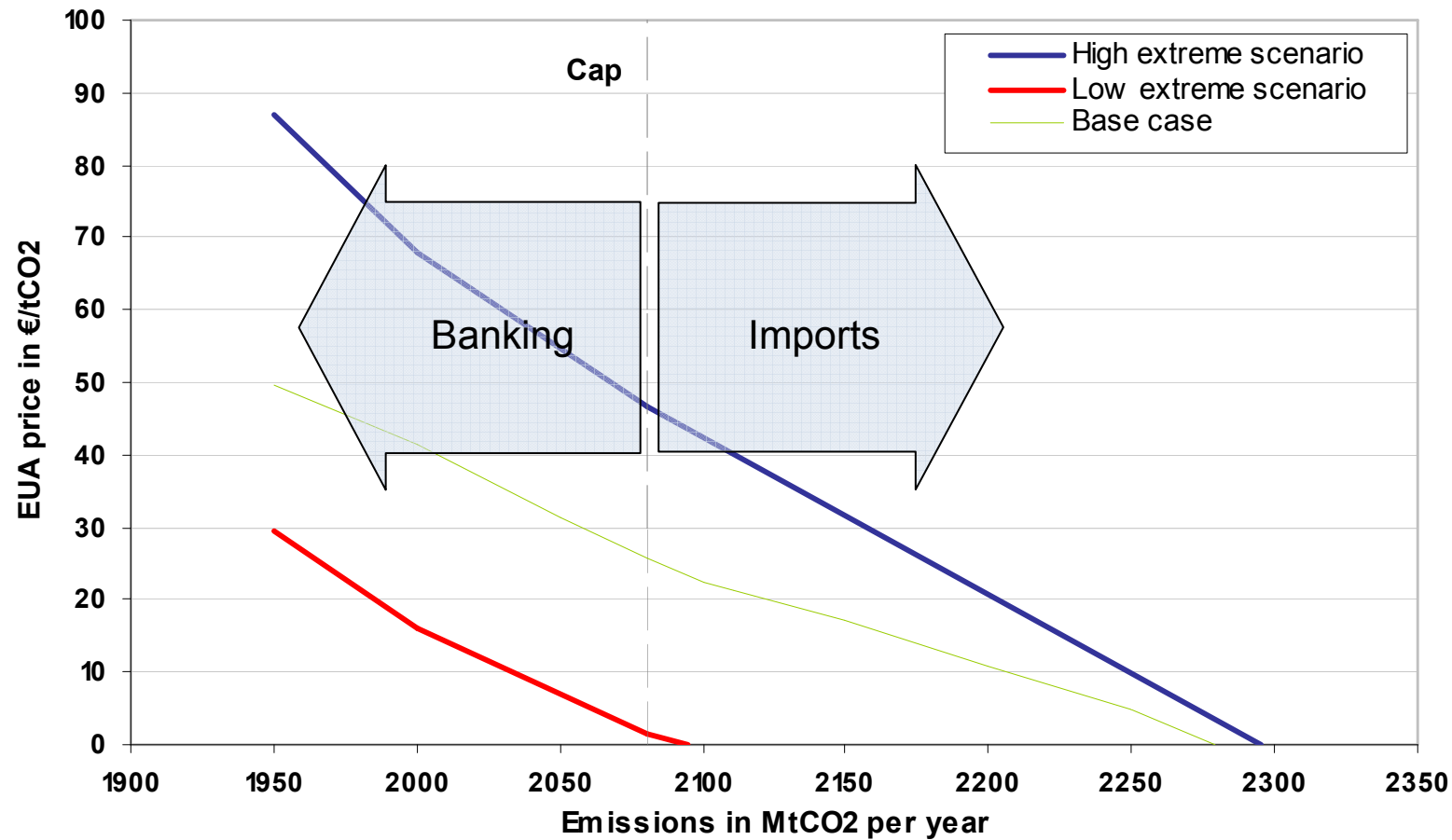
# Price forecast for the second trading period



# Robust price formation in the second period ETS

## Assumptions:

- Base case: gas price: 19.6 €/MWh, coal price: 93 US\$/ton, economic growth: Ø 3.7%/a
- Low extreme: gas price 12,5€, coal 125 US\$, growth industry:0; rest ↓ by 1 % point
- High extreme: gas price 35€, coal 60 US\$ and growth ↑ by 2 % point



## Summing up – EU ETS second trading period

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- The cap of 2,081 MtCO<sub>2</sub>, set by the European Commission seems to have created a fairly stable market
  - Stricter NAPs -> Tighter market balance than in the first period
  - Fuel switching important
  - ...as well as economic growth and demand response
  - Gas price development: Affects baseline, gap and abatement costs
- The market is unlikely to become long:
  - Only under the very unlikely case of very low gas prices combined with high coal prices
- There are limits to how short the market can be:
  - High gas and low coal prices: unlikely development
  - Higher fuel prices → demand reductions: limited baseline emissions to a level of around 2,300 Mt CO<sub>2</sub>
- Imports and banking will soften the EUA price fluctuations and prevent EUA price extremes
  - Import restriction not binding: CER/ERU prices impact
    - AAUs probably not significant role 2008-12
  - Expectations for beyond Kyoto are important

# Agenda

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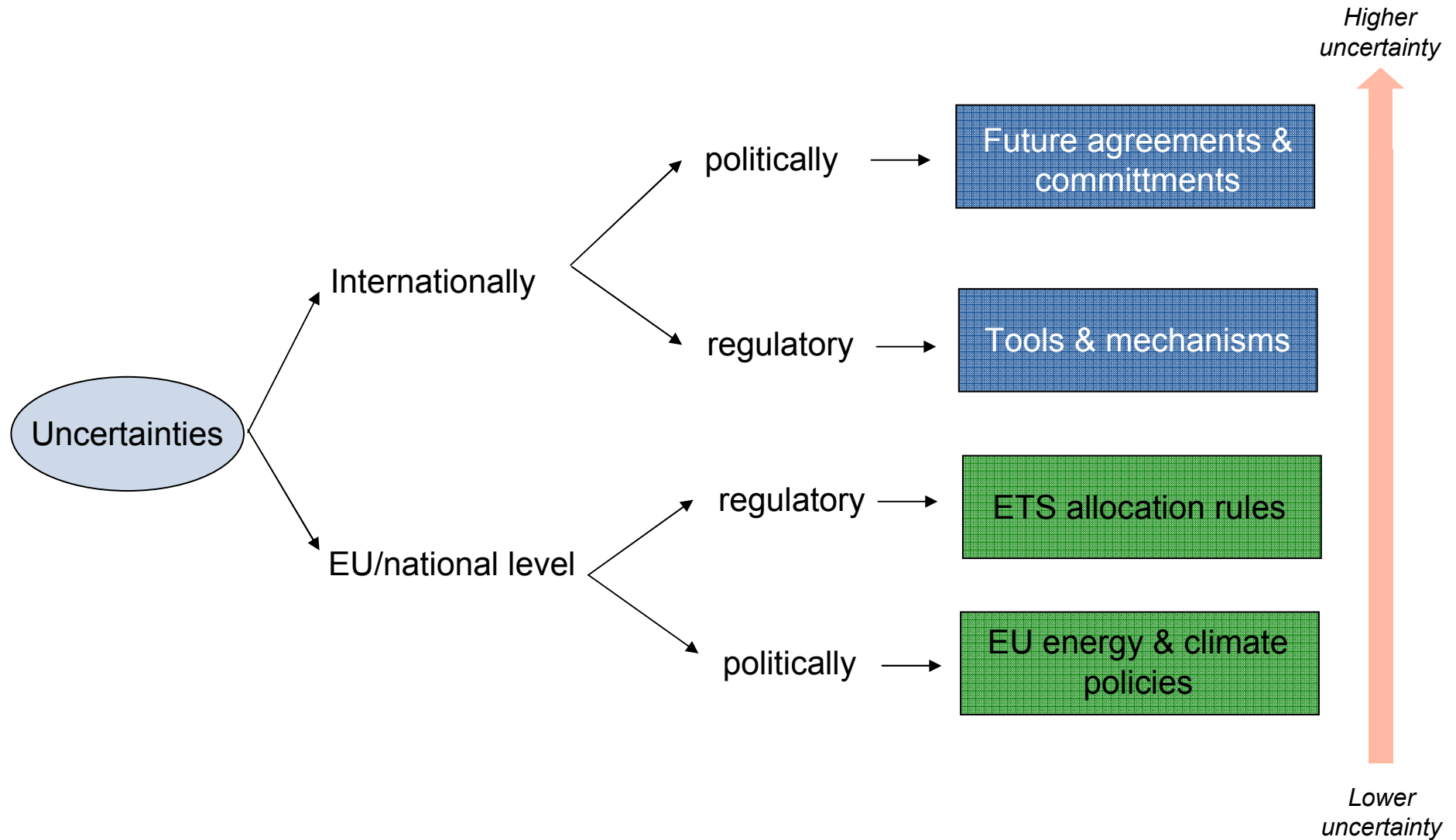
The global carbon market

EU climate policies and the EU ETS

Price formation in the carbon market

**Outlook post-Kyoto**

# Political and regulatory uncertainties in the future carbon market



# EU policies for 2020

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- New EU Energy Policy Plan for Europe in 2020:
  - Increase energy efficiency by 20%
  - Raising the share of renewable energy to 20%
    - Increasing the level of biofuels in transport fuel to 10%
  - Reducing greenhouse gas emissions by 20%
    - The EU will be willing to put this goal up to 30% if the US, China and India make similar commitments.

## The EU ETS Directive:

### Total cap

- EU wide cap: 21 % reduction until in 2020 compared to 2005 verified emissions

### Coverage

- New gases and sectors:
  - Chemical industry & aviation, Aluminium, Rock & stone wool, CCS

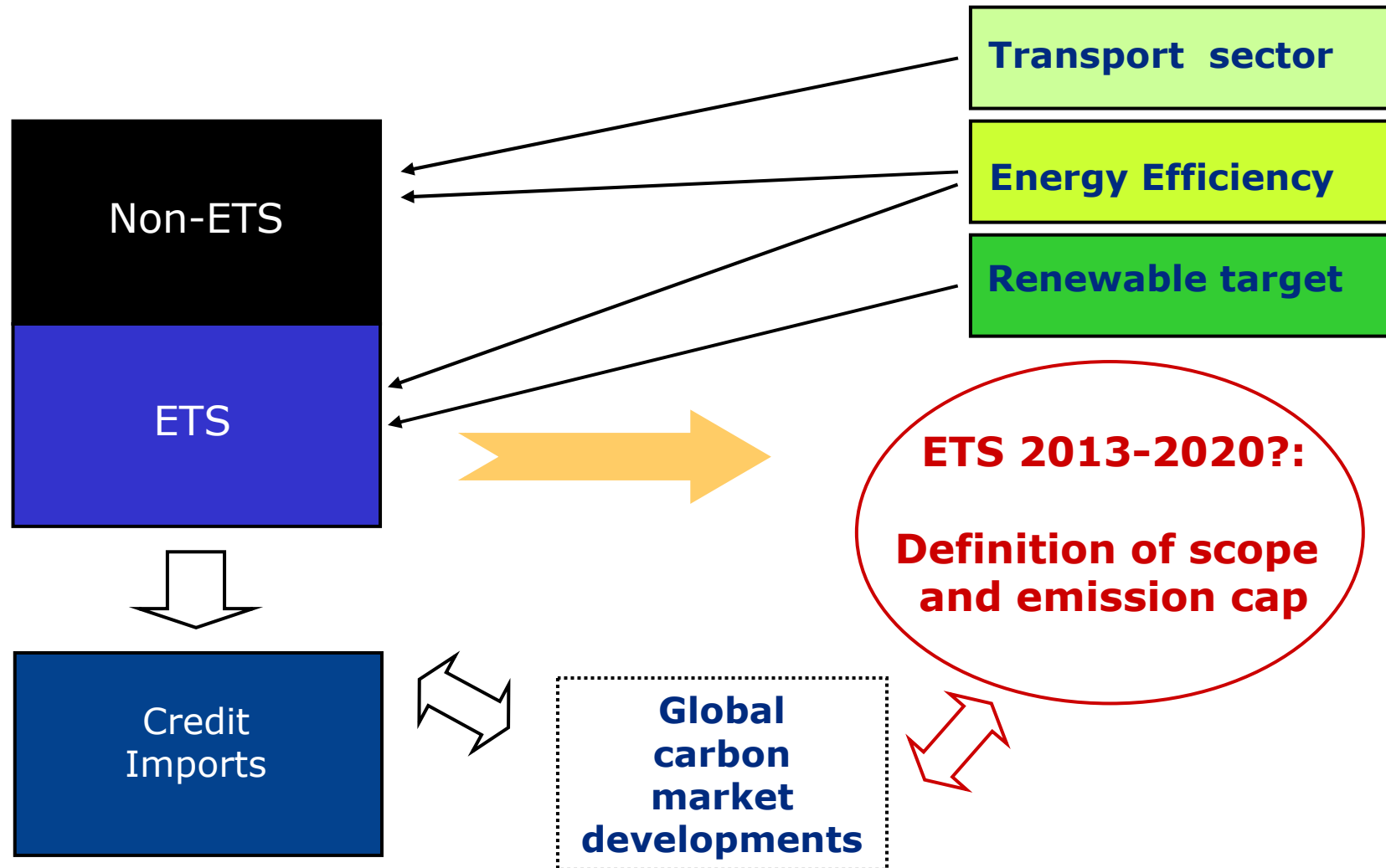
### Credit imports

- Restricted credit import: no "additional" credits are allowed to be imported

### Allocation

- Share of auctioning will increase significantly until 100% in 2020
  - No free allocation for power generation at all (incl. CCS)

# Link between future EU targets and policies



## Scenarios for a post-Kyoto world : in case of ...

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### ....a Global Agreement:

- US is included
- Emerging emitters have growth targets
  - Funding mechanisms & technology transfer
- Cap and trade: Kyoto mechan. exist
- Other flexible mechanisms are possible
- Technological sector approach

### .... no agreement on post Kyoto:

- 1st commitment period will be extended until 2020
- Bottom-up converging markets
- Regional/National/Sub-national carbon markets
- Linkages between markets?



The EU does not enforce a very strict carbon market without increased commitments from others. But in a global agreement commitments will most likely be not very ambitious either.



The flexible mechanisms CDM/JI will most likely continue to exist...  
...although under different name and conditions.



The UNFCCC will make sure that the market is well functioning: give flexibility in cases of strict targets and decrease flexibility in case of very reluctant commitments

## The future global carbon market

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- **Prices reflect the marginal abatement costs for achieving a defined emission target**
- **But the market comprises uncertainties on both, the demand and supply side of abatments**
  - Demand side:
    - A future international agreement and appropriate committments
    - Caps on sectoral/regional level
    - Baseline emission levels mainly depending on
      - fuel prices and growth rates as well as demand respond
  - Supply side:
    - Abatement options and cost levels in the ETS
      - » Fuel switching abatements (dep. on fuel price levels)
      - » Renewables and energy efficiency
      - » CCS
    - Project based reductions (in developing countries)
      - » Financial tools to provide up front payment
      - » Approval of CCS technologies and other methodologies



## Oslo

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Postboks 5, 0051 OSLO Norway  
Biskop Gunnerus' gate 14A,  
0185 OSLO Norway  
Telephone: +47 45 40 50 00  
Fax: +47 22 42 00 40  
e-mail: oslo@econ.no

## Stavanger

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Kirkegaten 3  
4006 STAVANGER Norway  
Telephone: +47 45 40 50 00  
Fax: +47 51 89 09 55  
e-mail: stavanger@econ.no

## Stockholm

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Artillerigatan 42, 5th floor  
S-114 45 STOCKHOLM Sweden  
Telephone: +46 8 528 01 200  
Fax: +46 8 528 01 220  
e-mail: stockholm@econ.se

## Copenhagen

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Nansensgade 19, 6th floor  
DK-1366 COPENHAGEN Denmark  
Telephone: +45 33 91 40 45  
Fax: +45 33 91 40 46  
e-mail: copenhagen@econdenmark.dk

[www.econ.no](http://www.econ.no)

[www.econ.se](http://www.econ.se)

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