

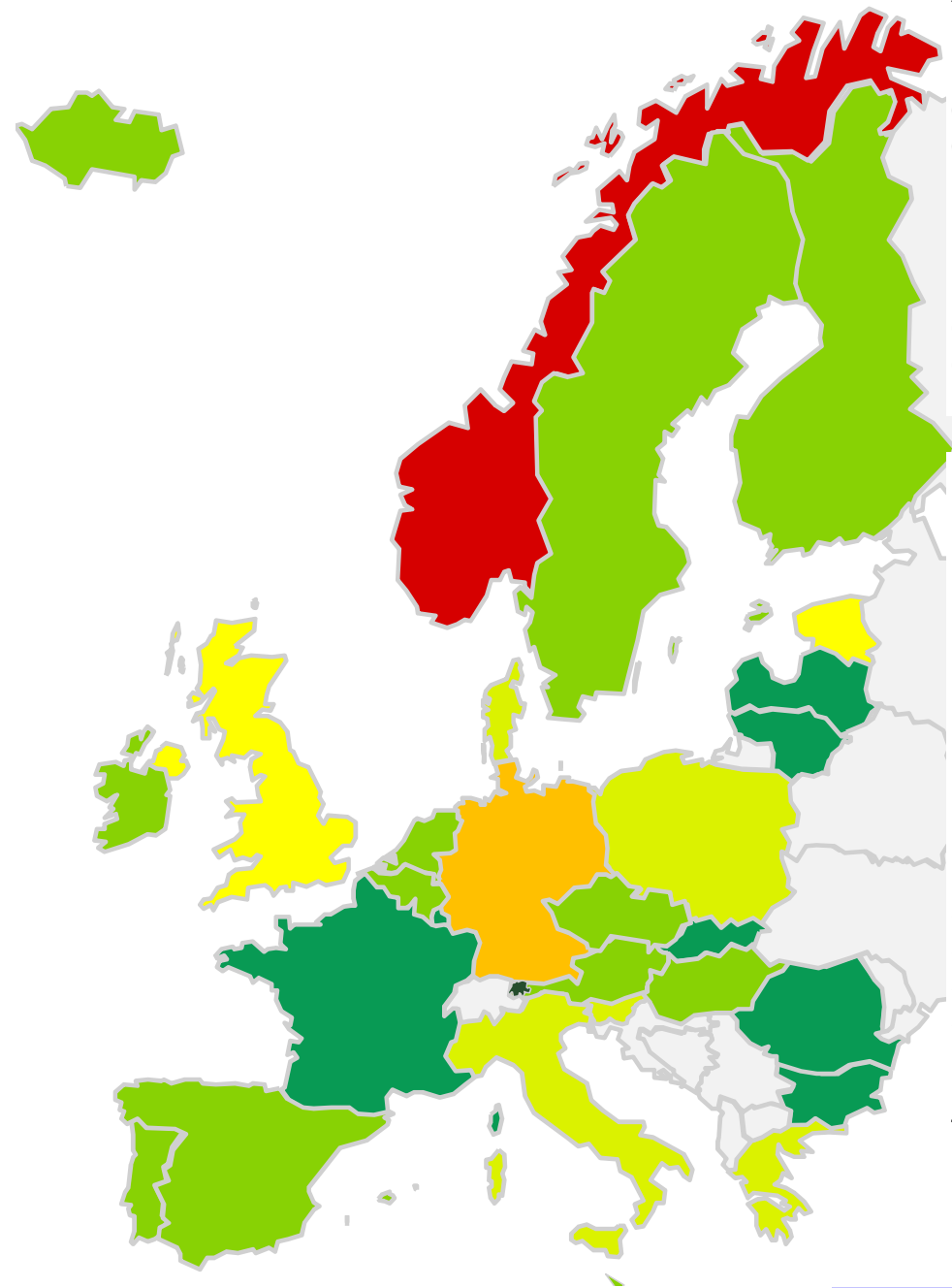
# CEPS Carbon Market Forum

23 April 2013, Brussels

## Options for structural measures in the EU ETS

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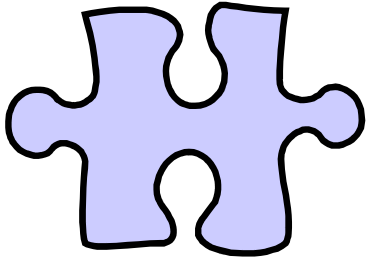


# Suggested steps for structural measures

- **A long-term target path**  
instead of trading periods with fixed caps
- **A flexible supply mechanism**  
that maintains the intended stringency of the target path
- **Emissions or emissions intensities**  
can be used as base of the target path
- **Auctioning revenues**  
can serve for stimulating technical innovation
- **Small emitters**  
may be considered for a different instrument

# These steps motivate the agenda

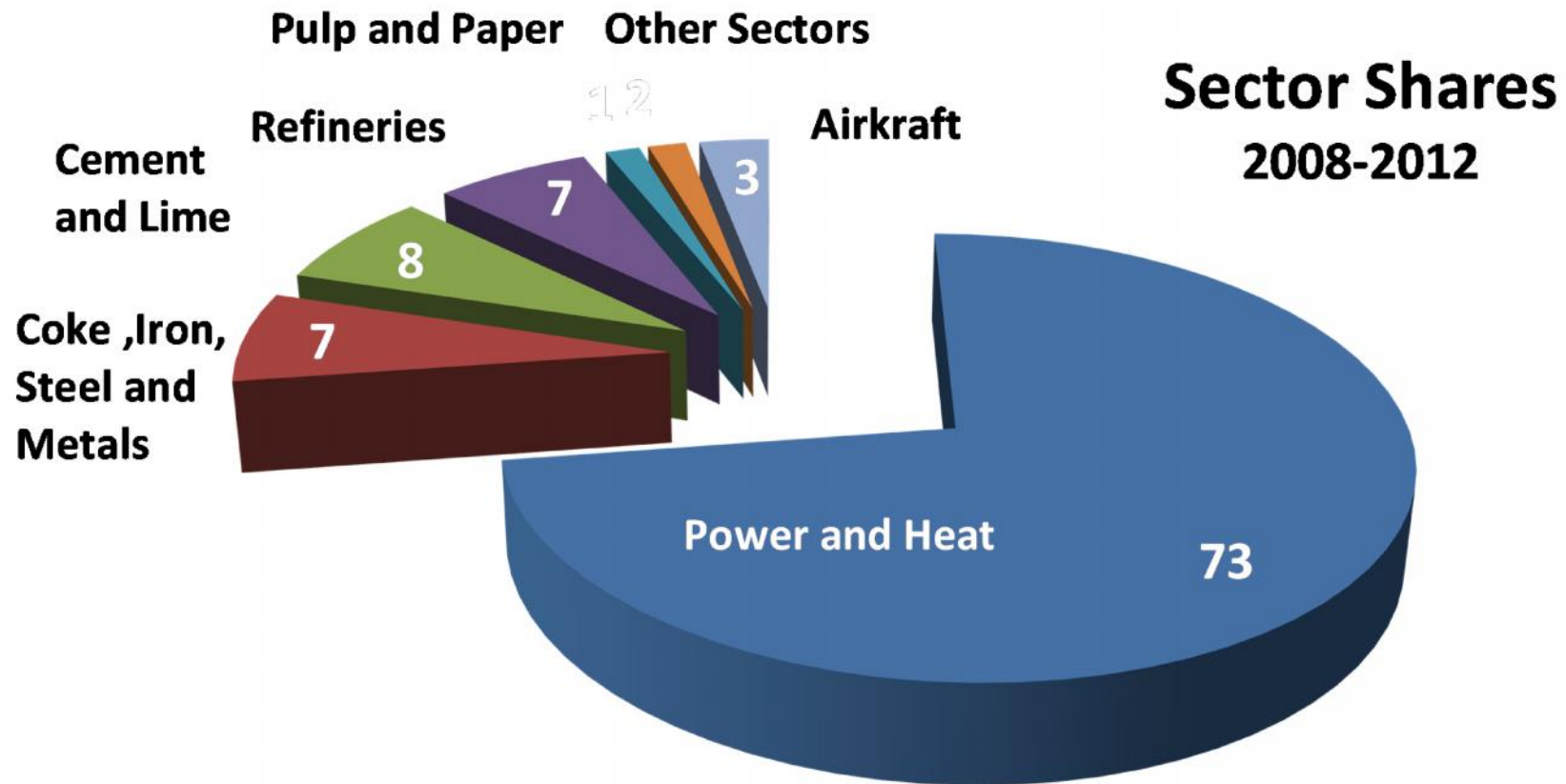
- **A reminder of the facts**
  - **Understanding the fragmentation of the EU ETS market**
- **What may have gone wrong**
  - **It is not only the oversupply of allowances**
- **Elements of a structural reform of EU ETS**
  - **More than backloading and tightening**



**A reminder of the facts**

**Understanding the fragmentation of the market**

# Power sector dominates Accounts for 73 % of emissions



# Short and long positions

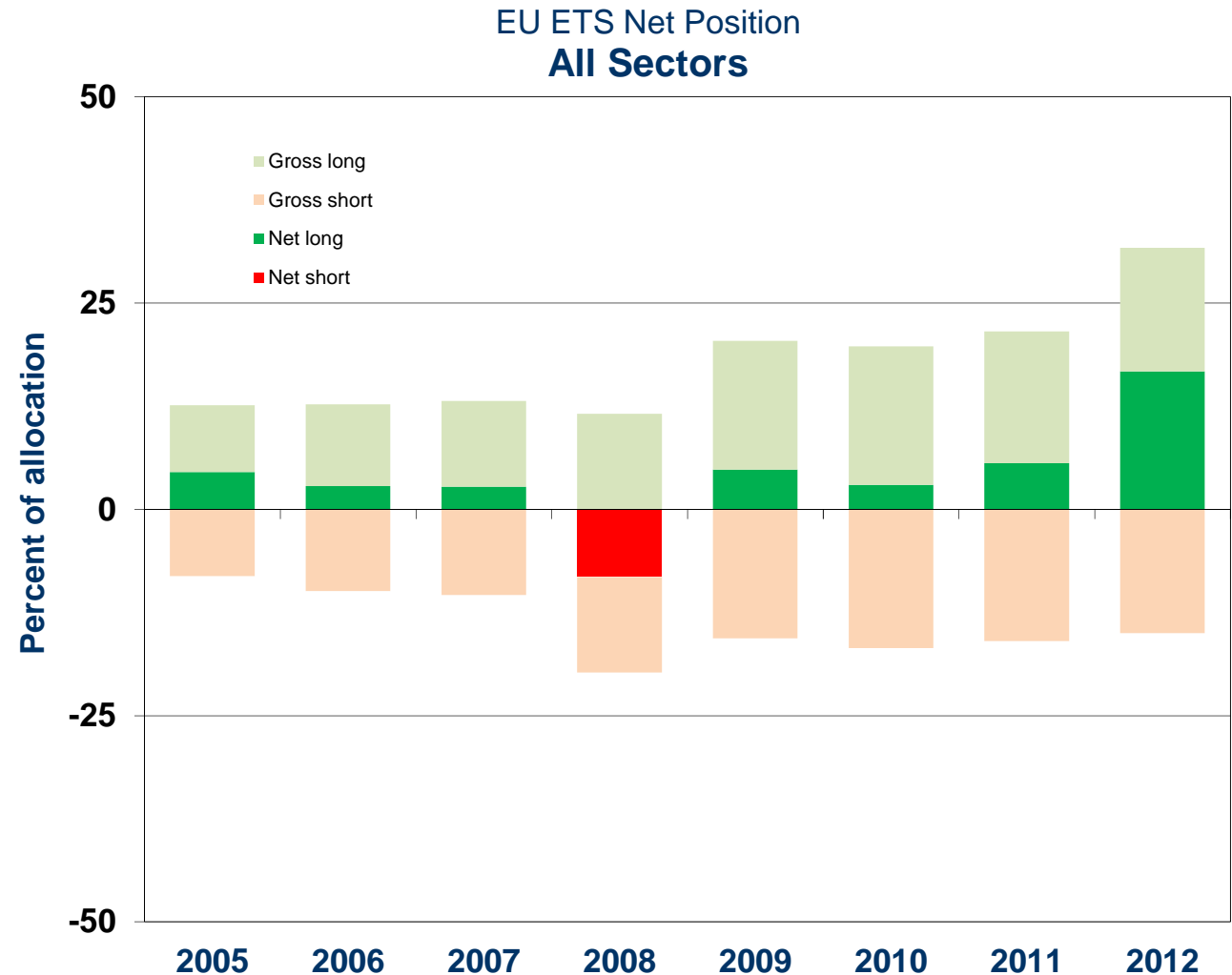
Measuring the stringency of the market

- The (relative) **position** is the difference between allocation and verified emissions related to allocation
- The position is **short** if negative and **long** if positive
- **Gross long** positions summarize all long positions and **gross short** positions all short positions
- The **net position** is the difference between gross long and gross short positions

# Time profile of positions

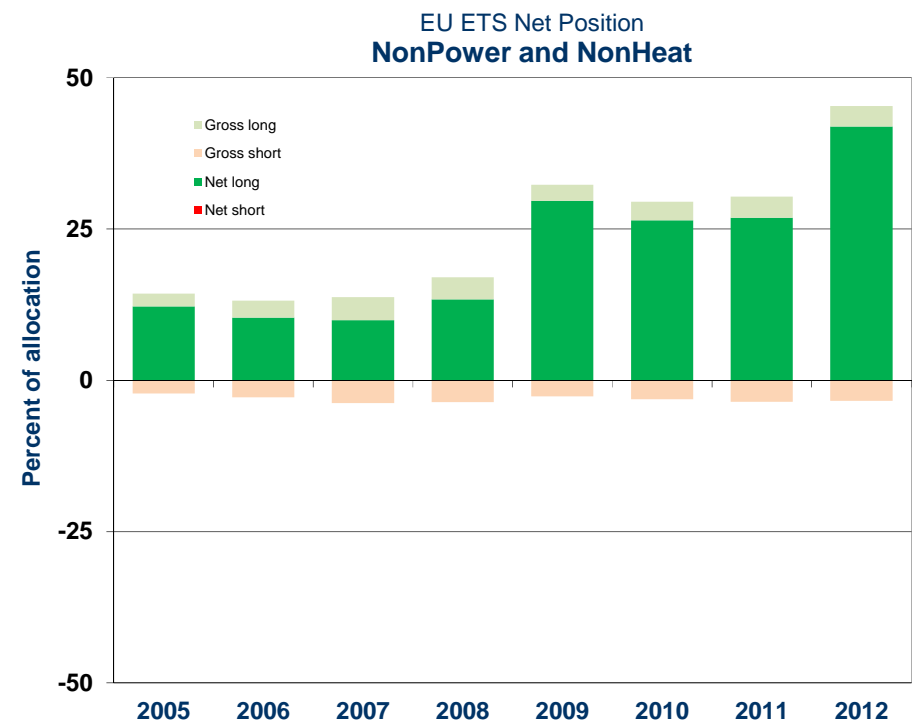
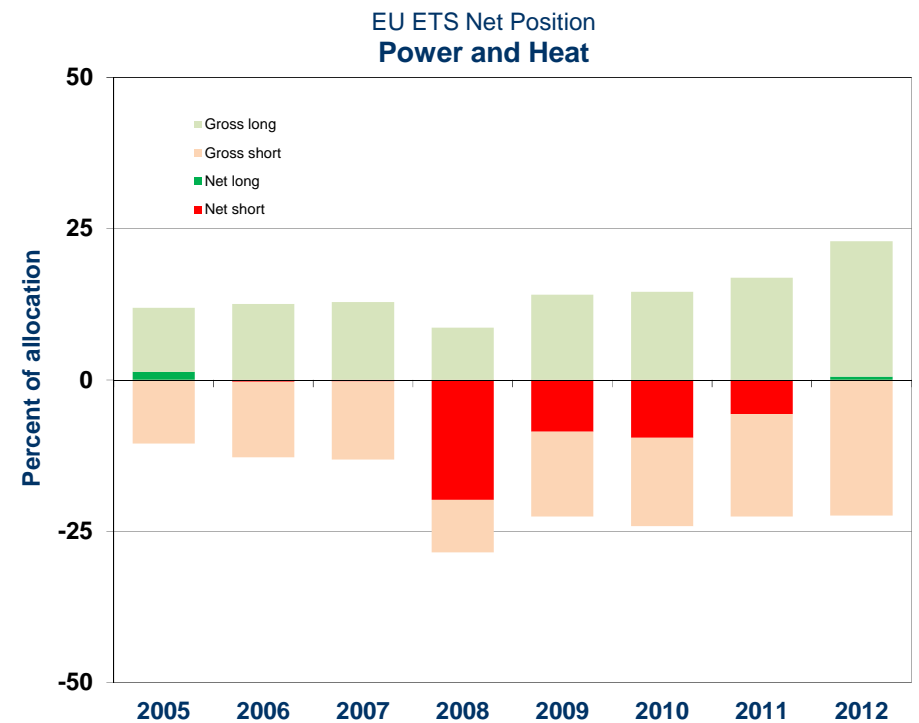
## Overall market

- Only in 2008 the market was in a short position
- The net positions result from a wide variation of long and short positions



# Market fragmentation between Power and NonPower sectors

- Power sector was rather short
- NonPower sector was always long
- Differences between trading periods



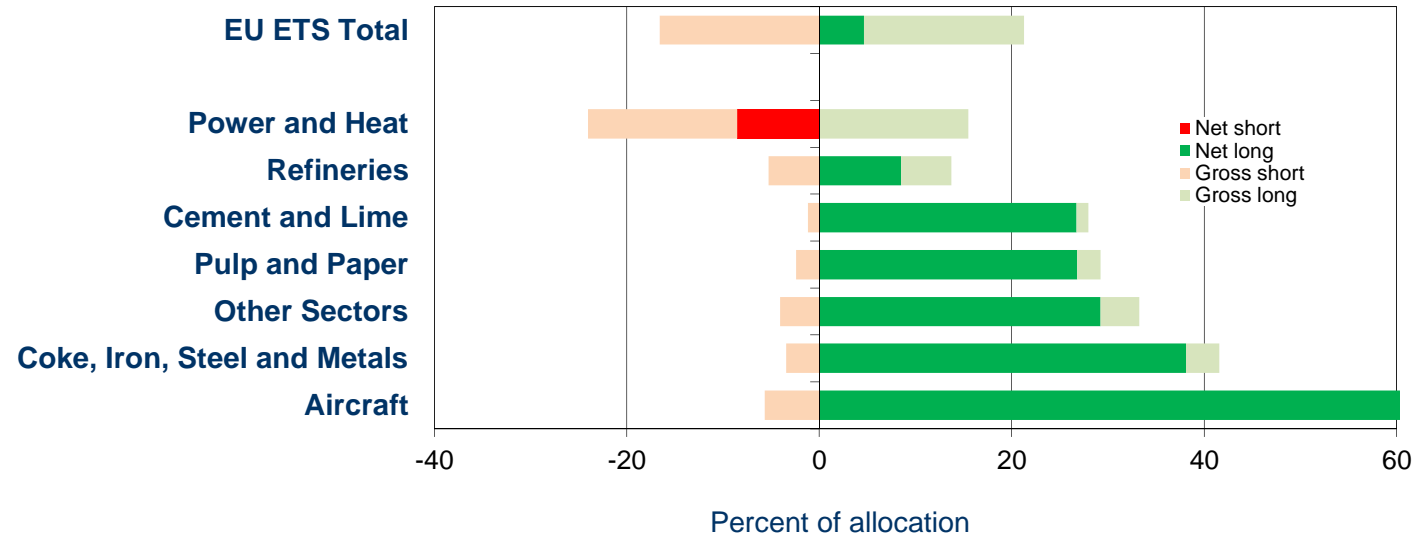


# Profile of sector positions

2008 - 2012

- Only Power and Heat was short
- Substantial long positions of other sectors

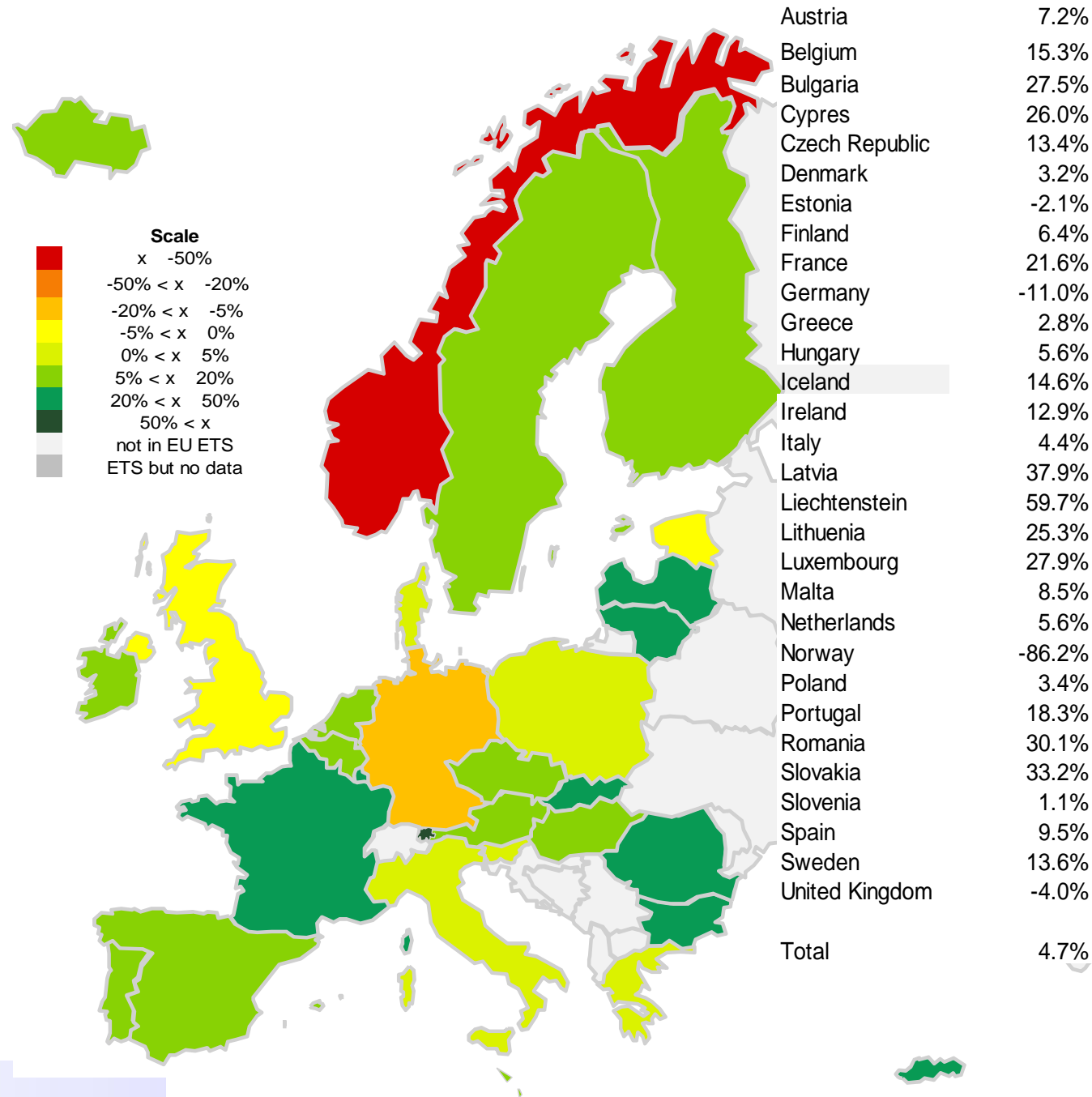
EU ETS 2008 - 2012 Net Position  
All countries



# Profile of country positions 2008 - 2012

- The overall market was long by about 5 %
- Country positions differ

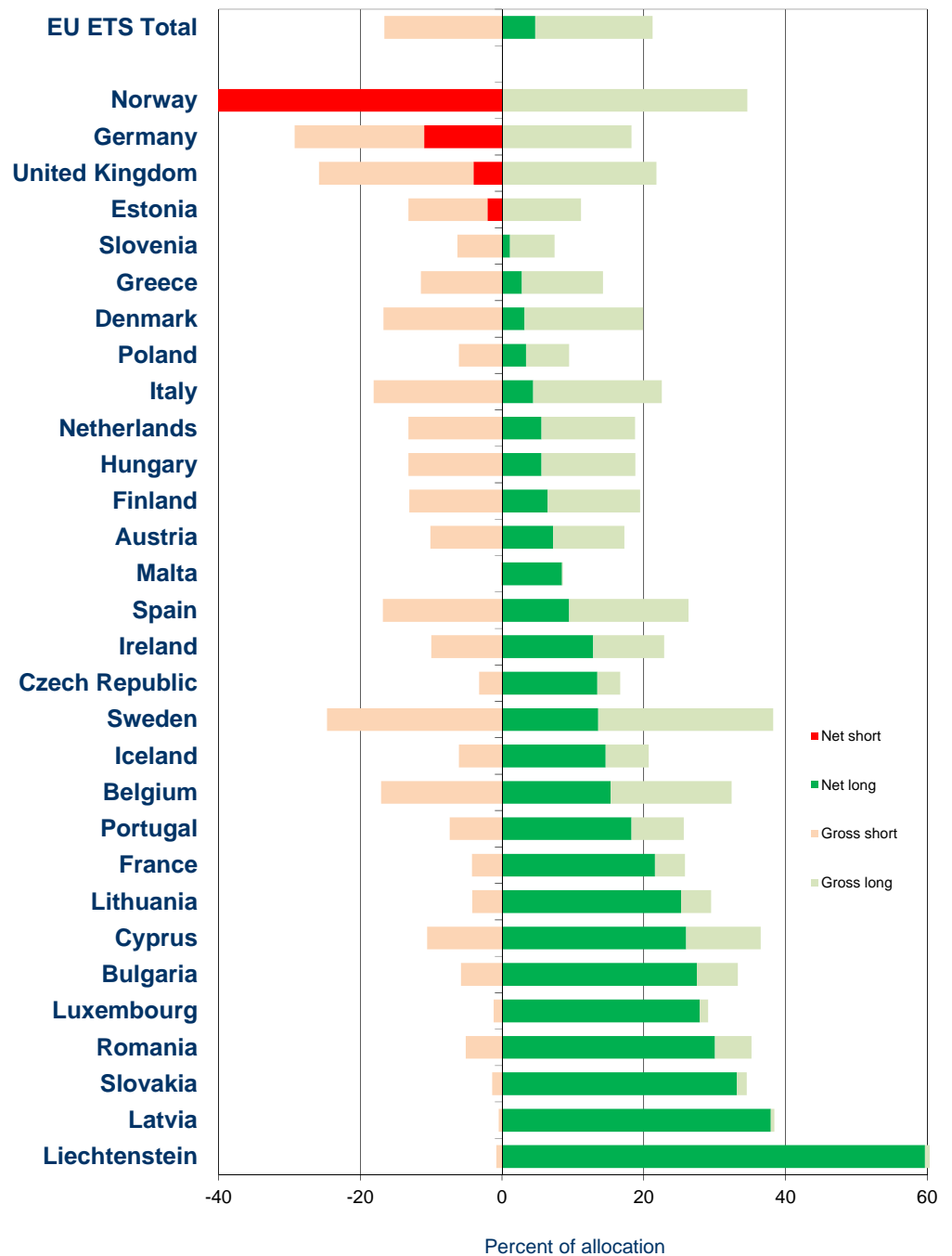
EU ETS Net Positions  
All sectors 2008-2012

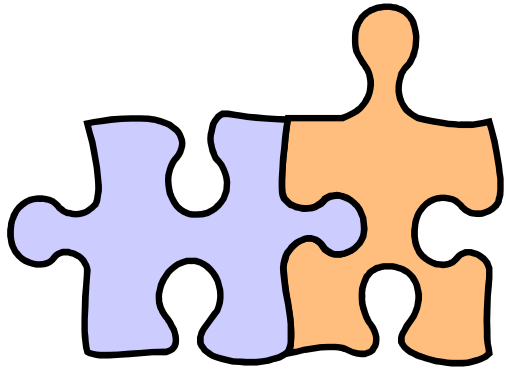


# Dispersion of country positions 2008 - 2012

- Only 4 countries were short
- Many countries show a wide variation of gross positions

EU ETS 2008 - 2012 Net Position  
All Sectors





**What may have gone wrong**

**It is not only the oversupply of allowances**

# The uncertainty from the stringency of allowances to technical change

**Stringency  
of  
allowances**

**Carbon  
price**

**Technical  
change**

# Interacting and conflicting EU 2020 targets

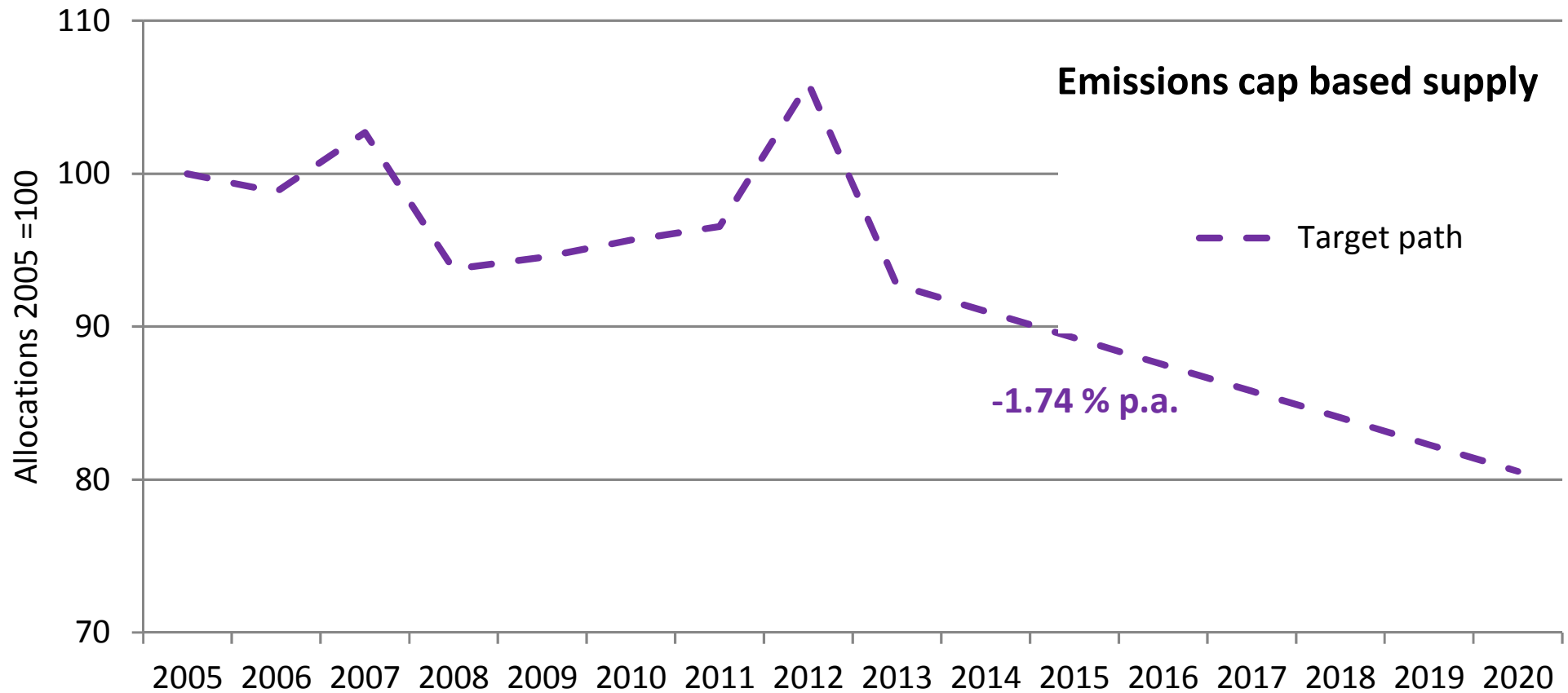
- 20 % reduction of GHG emissions
- 20 % share of renewable
- 20 % less end-use energy
  
- One of these targets is redundant
  
- Subsidies for renewables had perverse impacts on the electricity market
  - Incentives for switching from gas to coal

**The performance of the  
current fixed emissions cap based  
supply mechanism**

**This mechanism serves as a benchmark for  
evaluating enhanced mechanisms**

# The current fixed cap based mechanism (1)

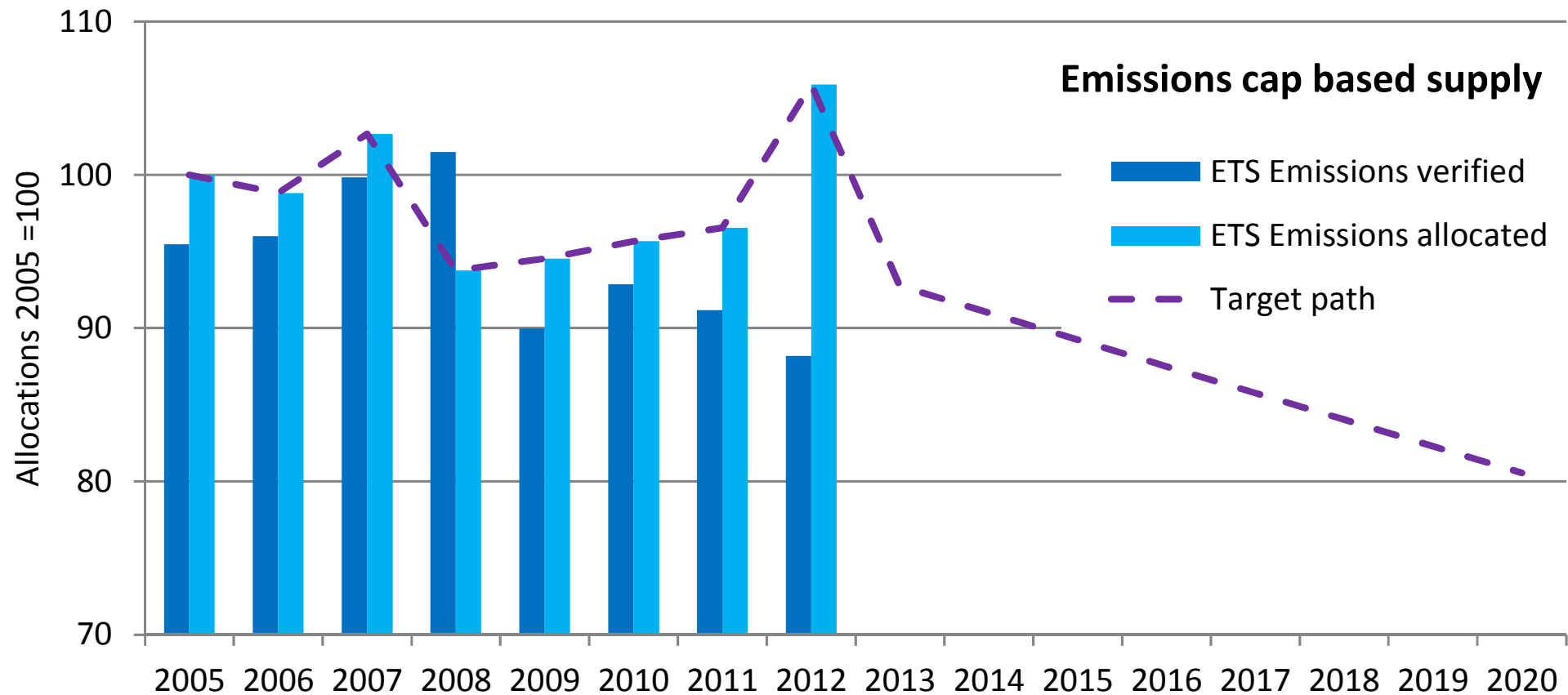
## Fixed trading periods and (seemingly) fixed caps





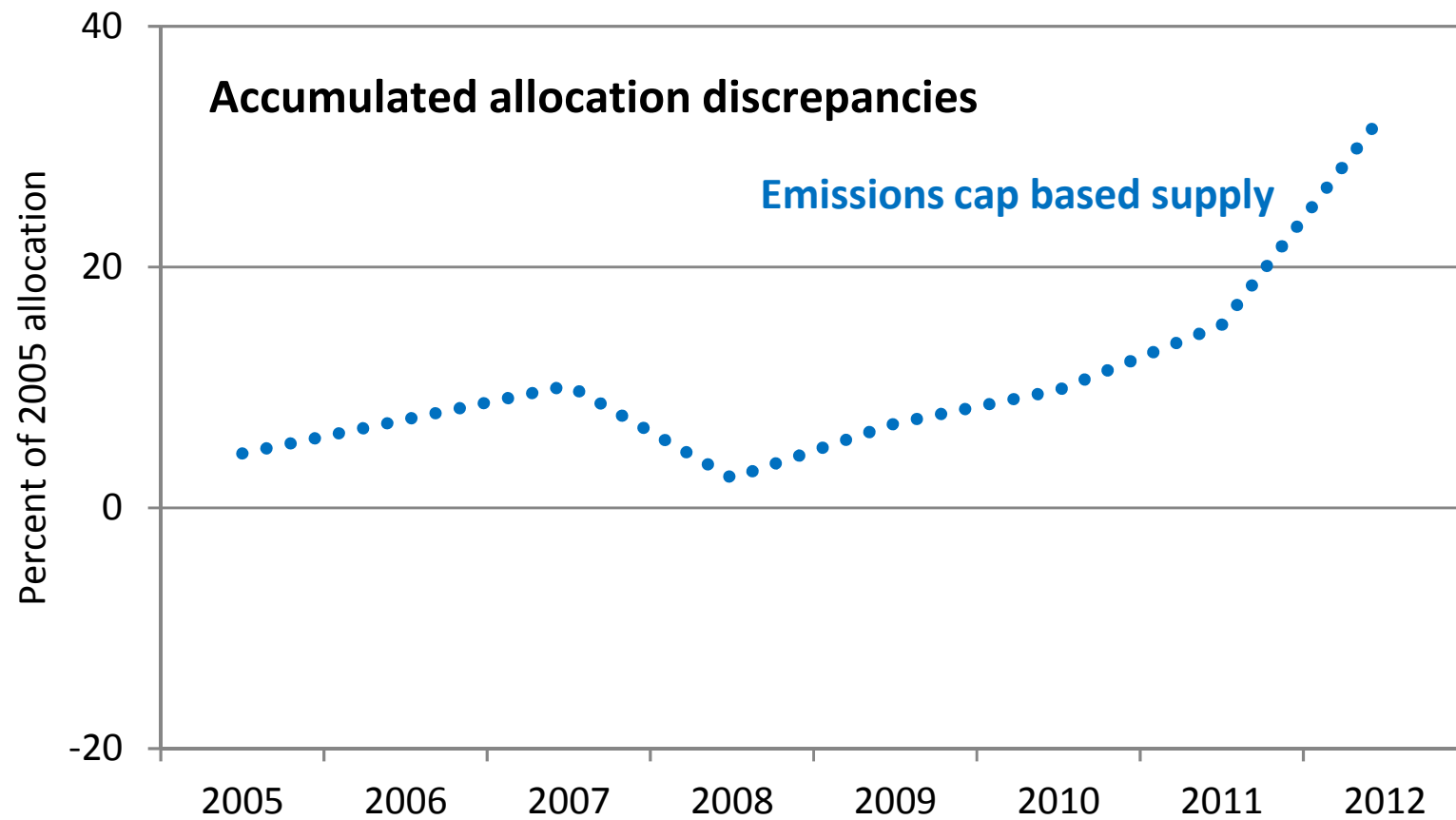
# The current fixed cap based mechanism (2)

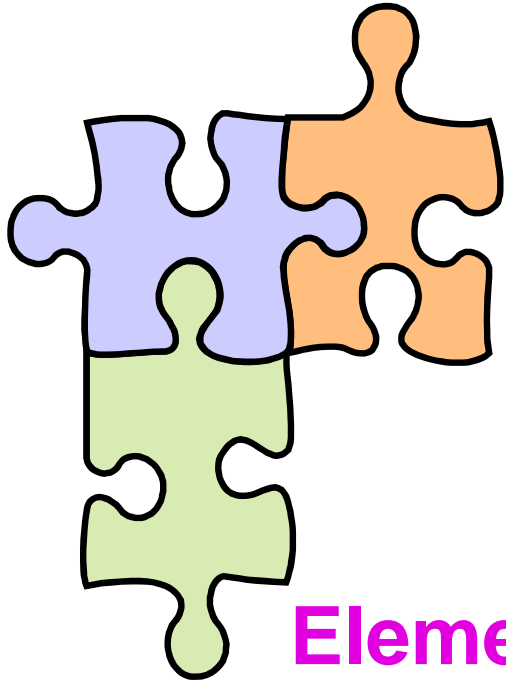
## Actual performance in two trading periods



# The current fixed cap based mechanism (3)

## Supply discrepancies





## Elements of a structural reform of EU ETS

**More than backloading and tightening**

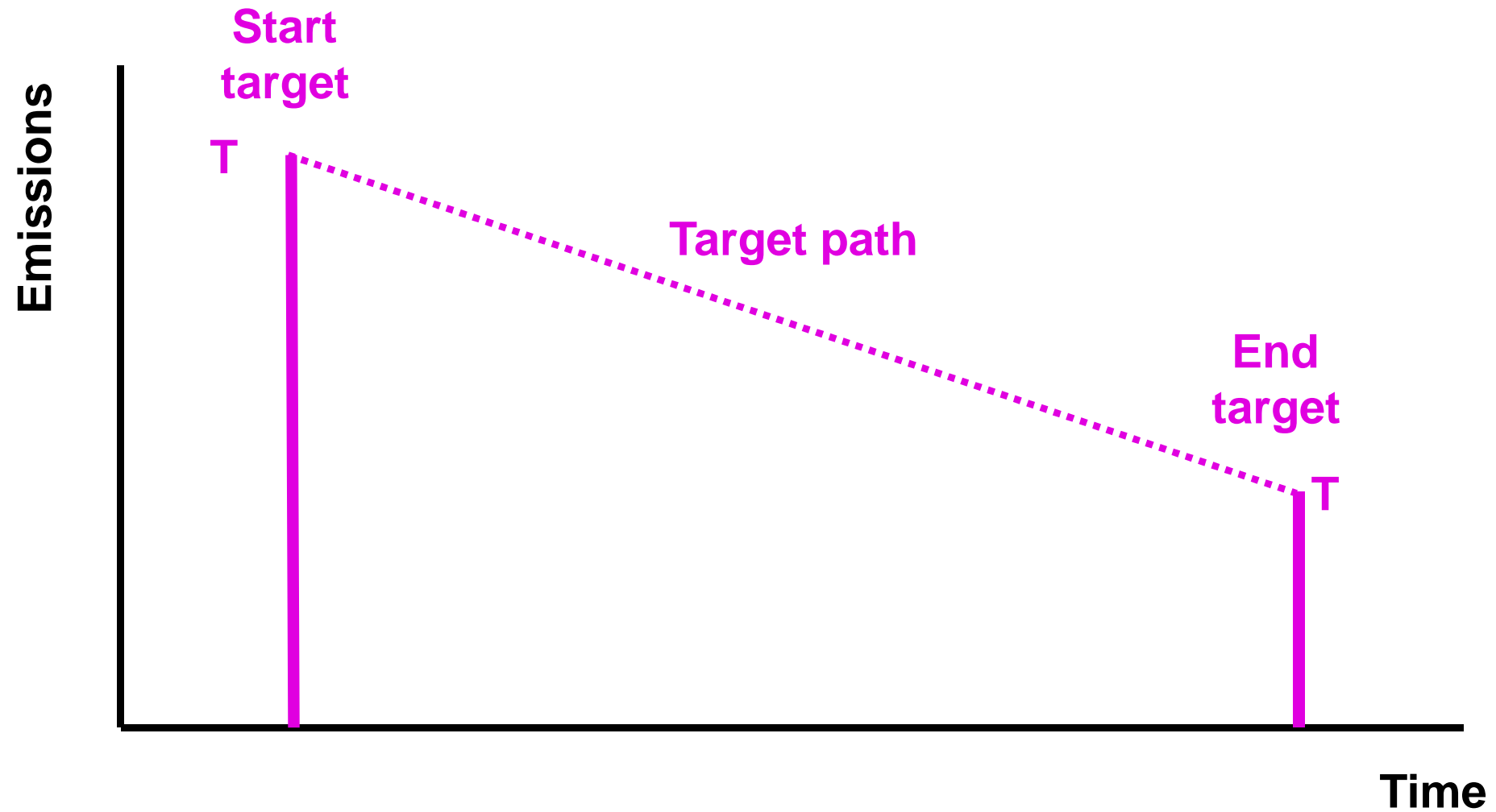


**(1)**

**A long-term target path (up to 2050?)  
instead of fixed caps with fixed trading periods**

**This will create confidence for investors**

# A long-term target path

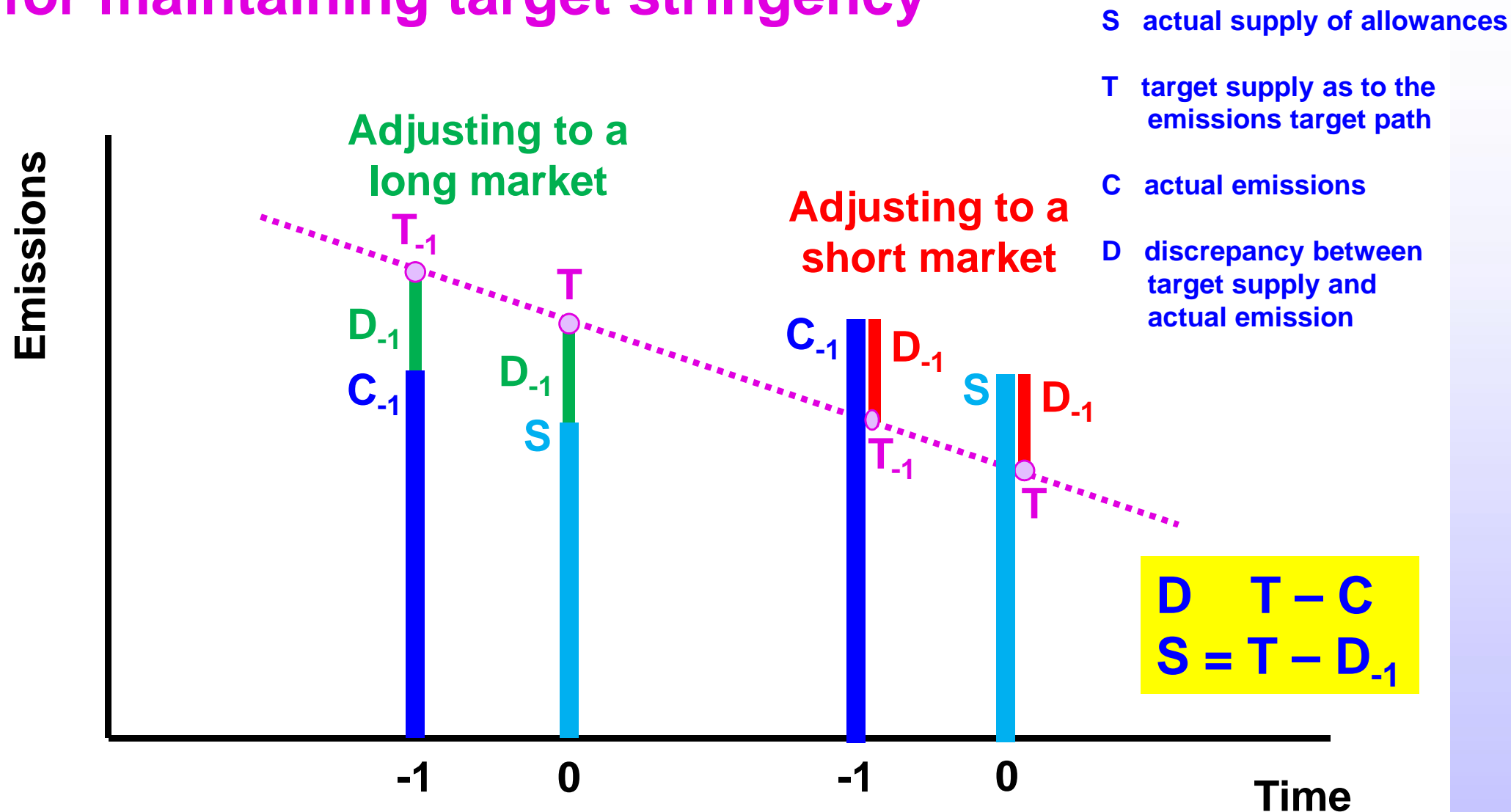


**(2)**

**A flexible supply mechanism  
that maintains the intended stringency  
of the target path**

**This will decouple the stringency of supply  
from fluctuations of economic activity**

# Supply compensation for maintaining target stringency



Actual supply of allowances in the current year compensates the discrepancy between target supply and actual emissions of the previous year.

**(3)**

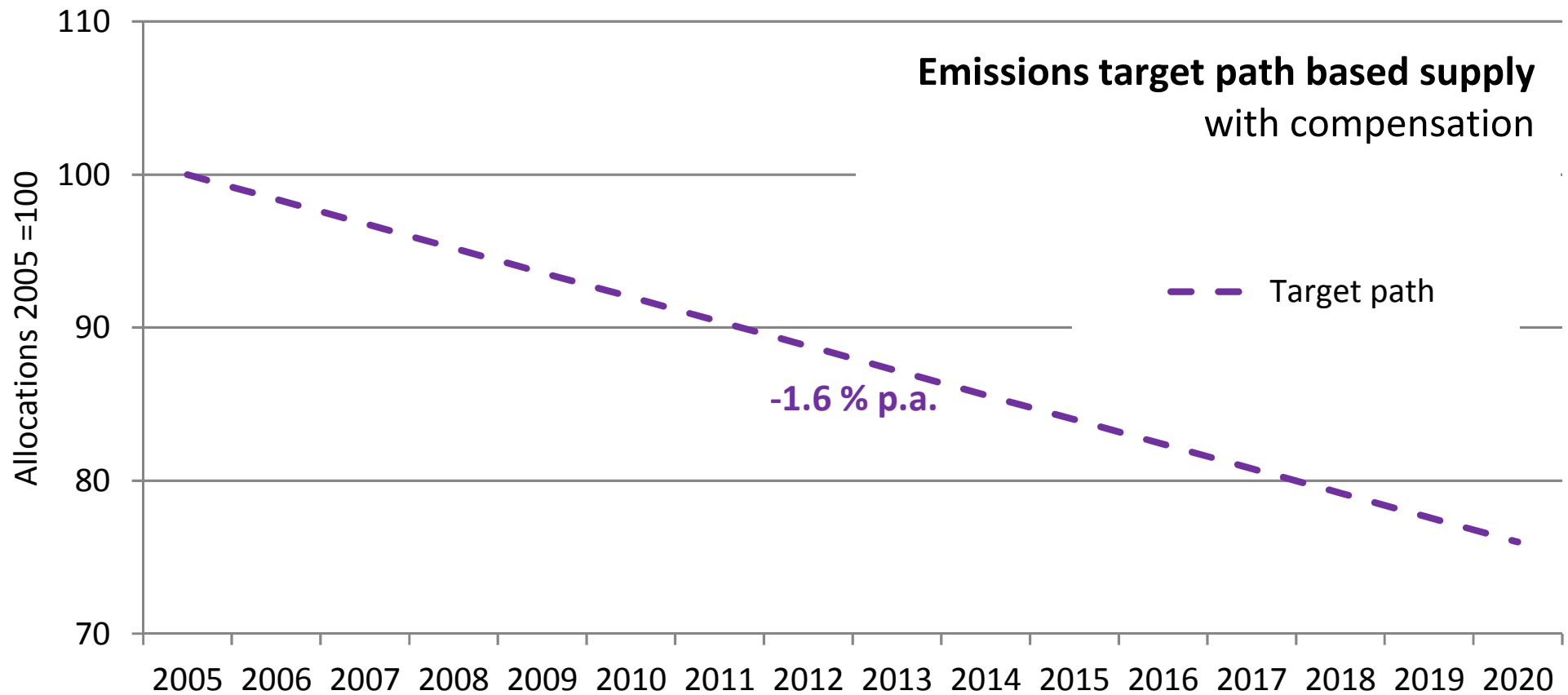
**Emissions or emissions intensities  
can be used as base for the target path**

**The stringency of the target path will  
determine the incentives for technical change**



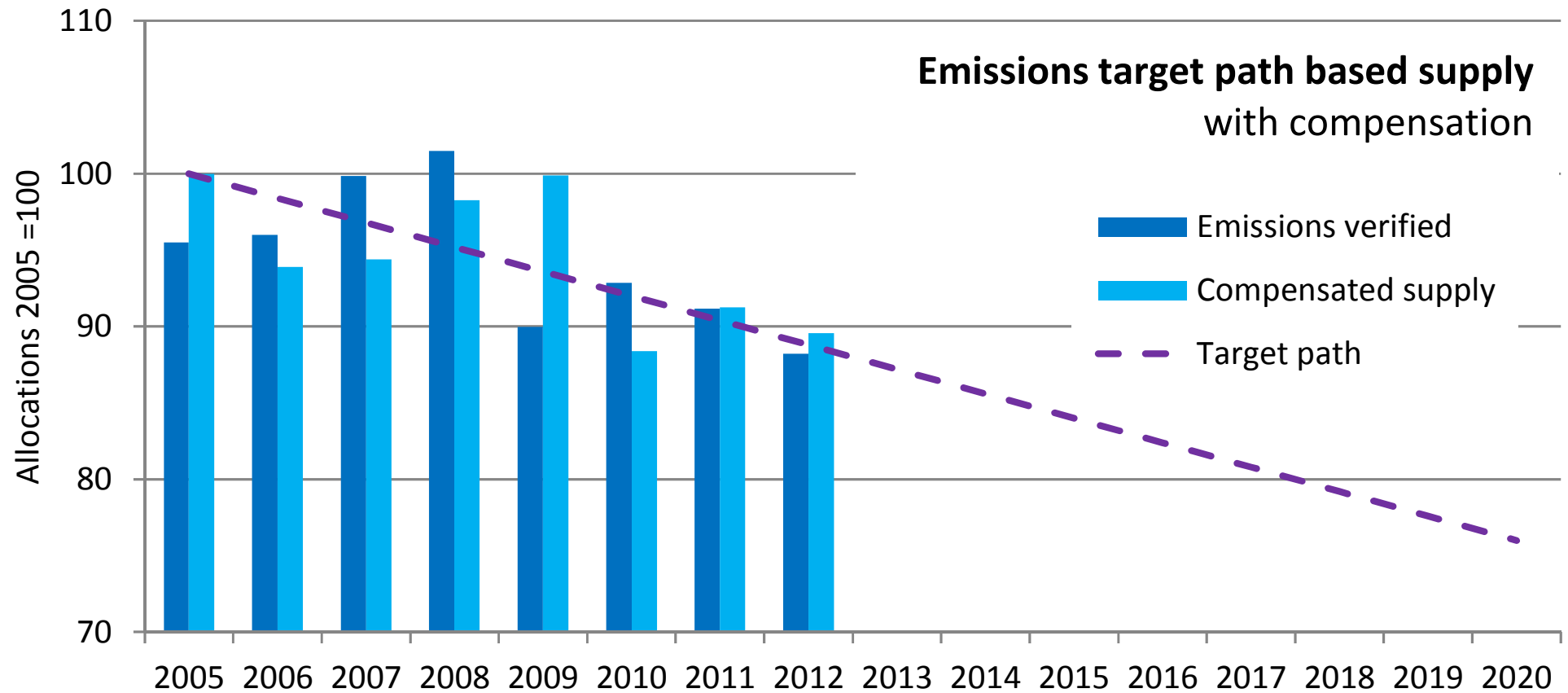
# Emissions target path based mechanism (1)

Long-term emissions path  
e.g. -1.6 % p.a.



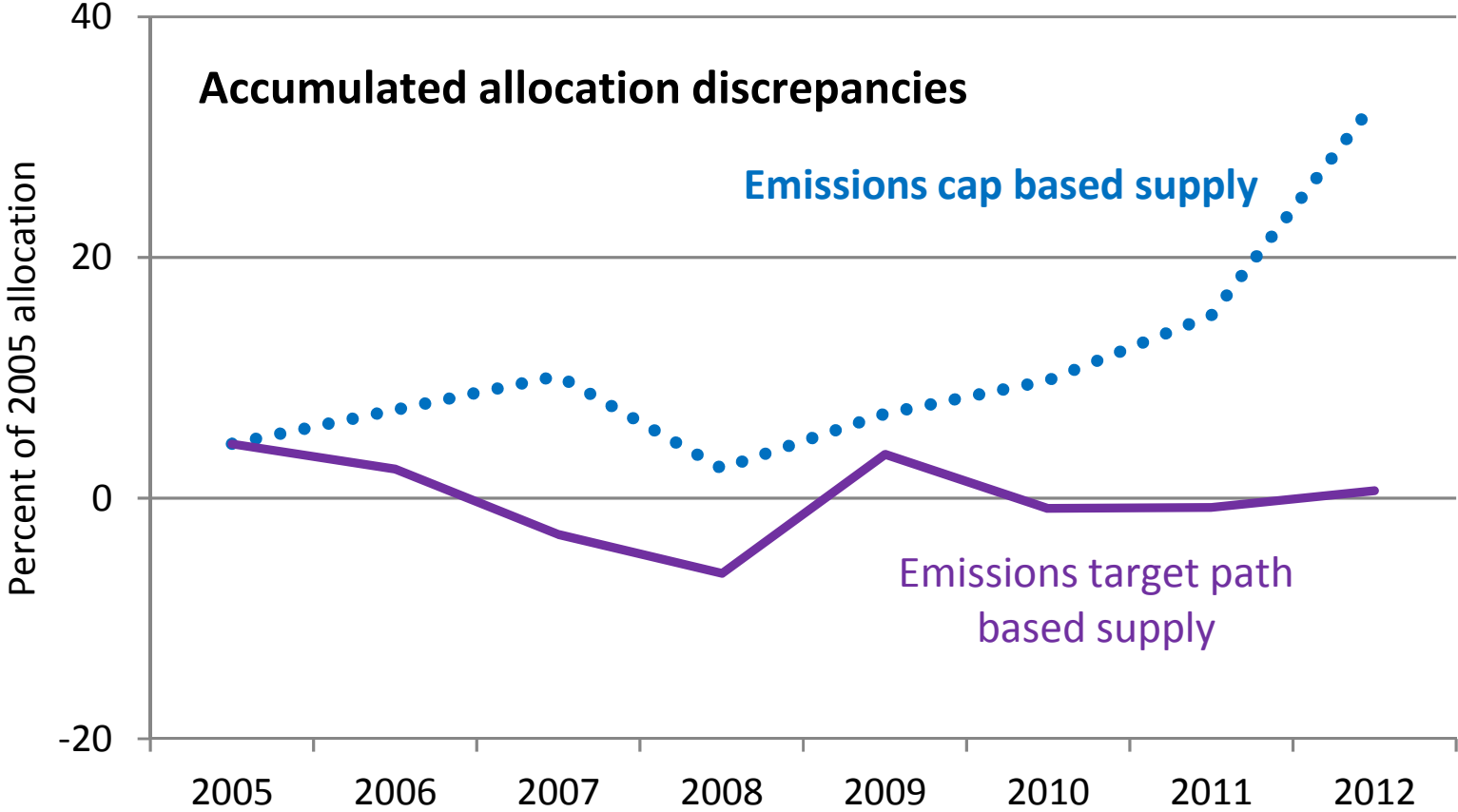
# Emissions target path based mechanism (2)

## Simulated performance in two trading periods



# Emissions target path based mechanism (3)

## Supply discrepancies



# Reasons for switching to an emissions intensity target

- An emissions intensity target encompasses both an
  - energy efficiency target and a
  - carbon share target
- An emissions intensity target can be considered as a substitute for the current three EU 2020 targets

C carbon emissions  
E energy used  
Q GDP  
I emissions intensity

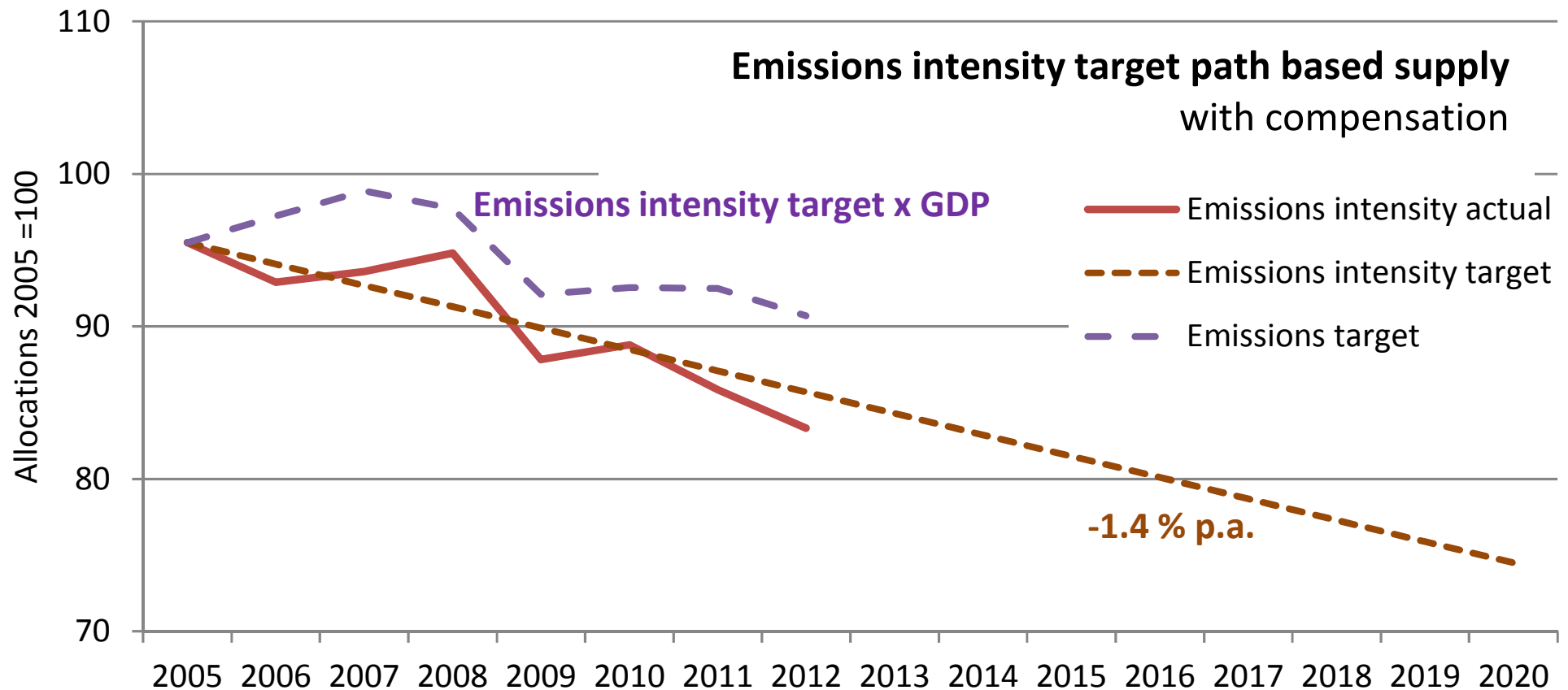
$$I = C / Q$$

emissions intensity      energy efficiency      carbon share

$$[C / Q] \quad [E / Q] - [C / E]$$

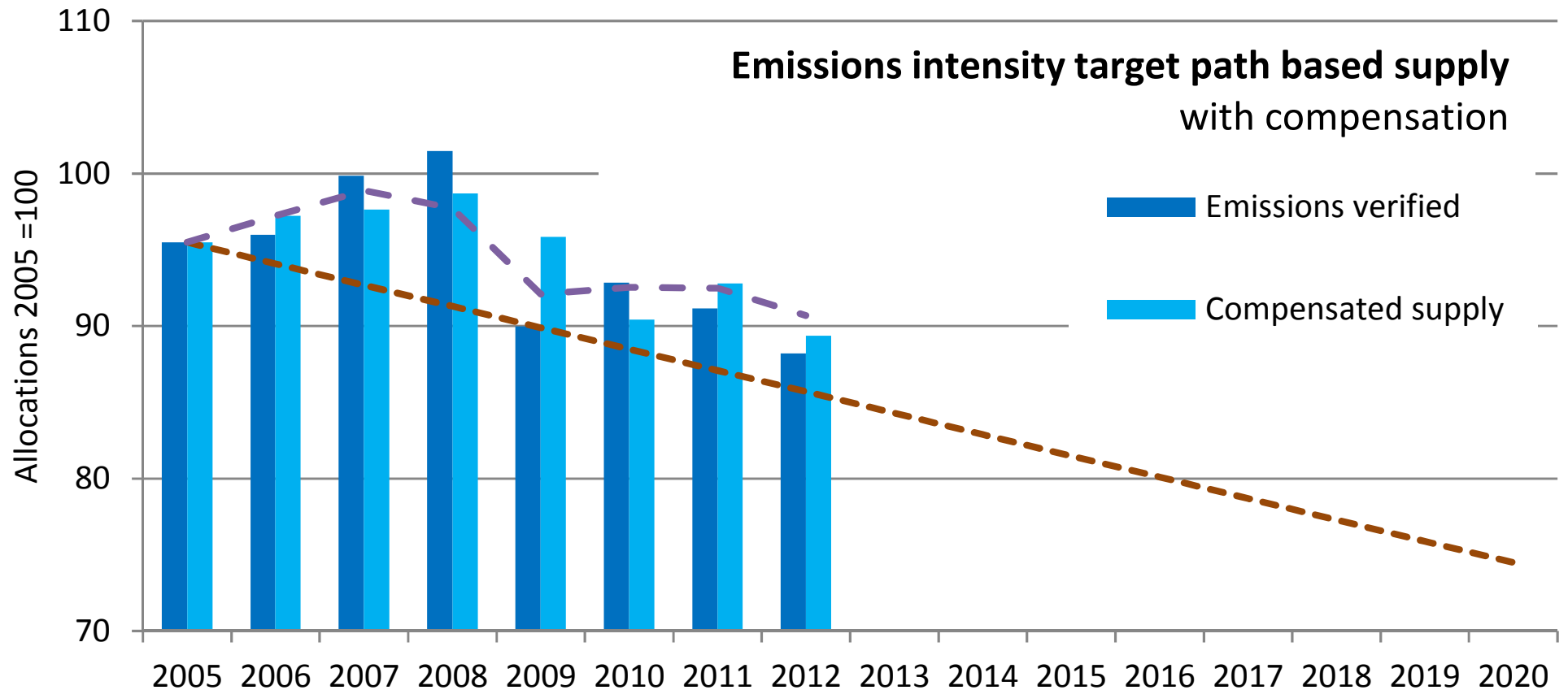
# Emissions intensity target path based mechanism (1)

Long-term emissions intensity path  
e.g. -1.4 % p.a.



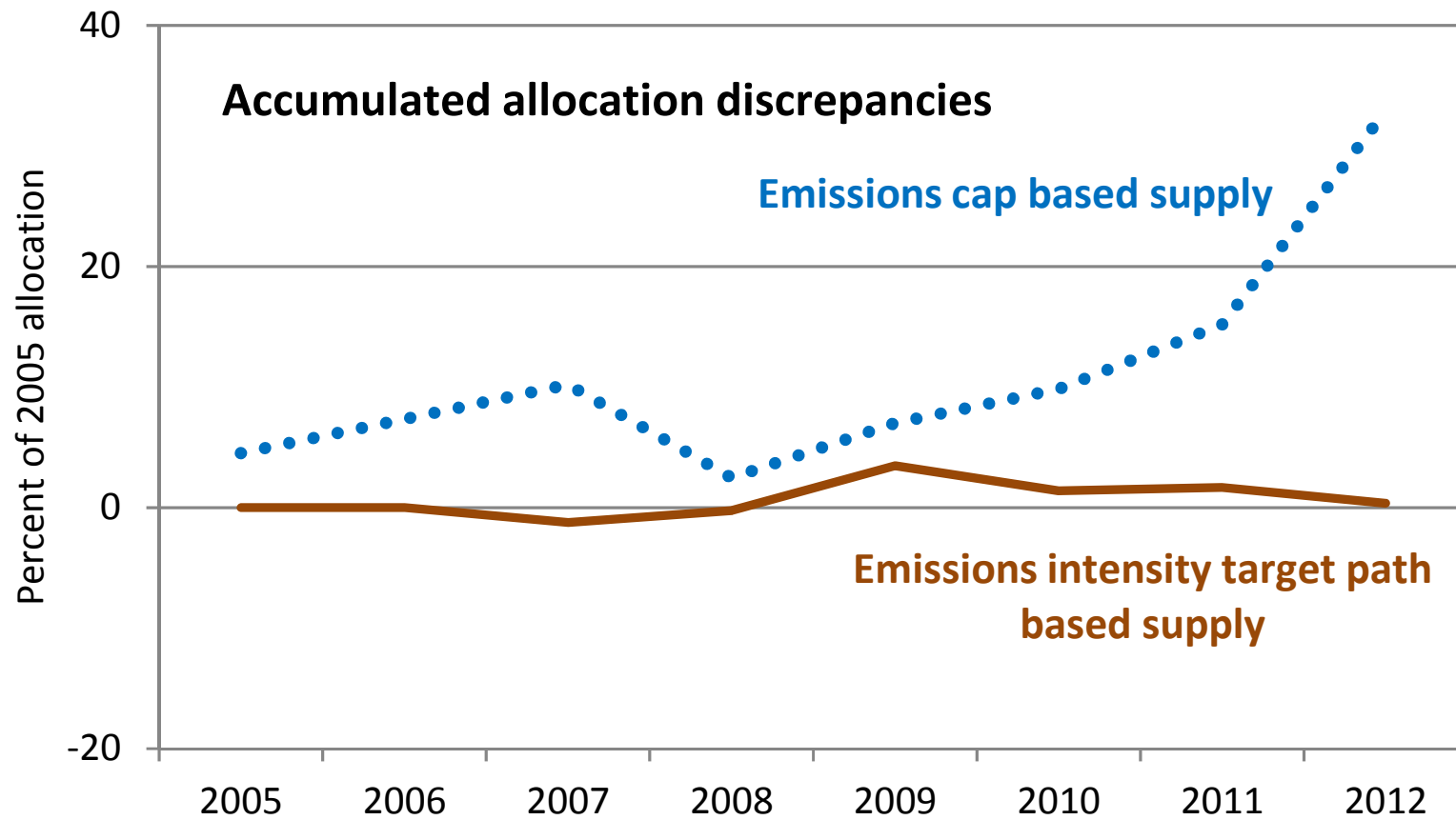
# Emissions intensity target path based mechanism (2)

## Simulated performance in two trading periods



# Emissions intensity target path based mechanism (3)

## Supply discrepancies



# Extensions of the compensated supply mechanisms

- **Different sector target paths**
  - e.g. power and heat and remaining sectors
- **Compensation for offsets**
  - Offsets shall not have an impact on stringency of supply
- **Corrections for forecast errors**
  - Updates depending on reported emissions and GDP figures



**(4)**

**Auctioning revenues may serve  
for stimulating technical innovation**

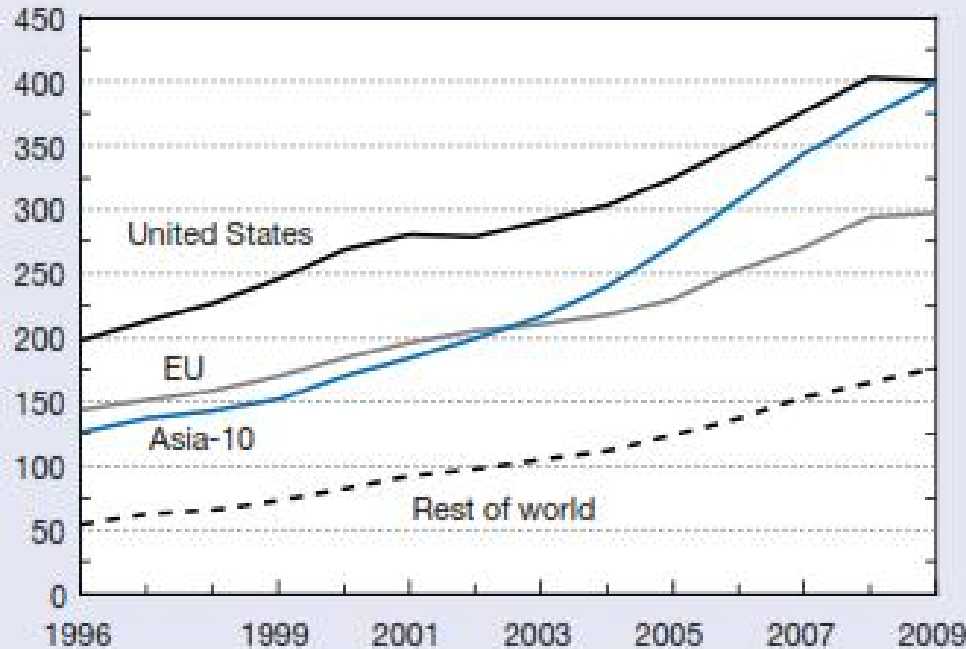
**This can be done via a technology fund for  
targeted technology policies**

# EU needs to become aware of loosing in the global technology competition

## National Science Board (2012): Science and Engineering Indicators

**R&D expenditures for United States, EU, and 10 Asian economies: 1996–2009**

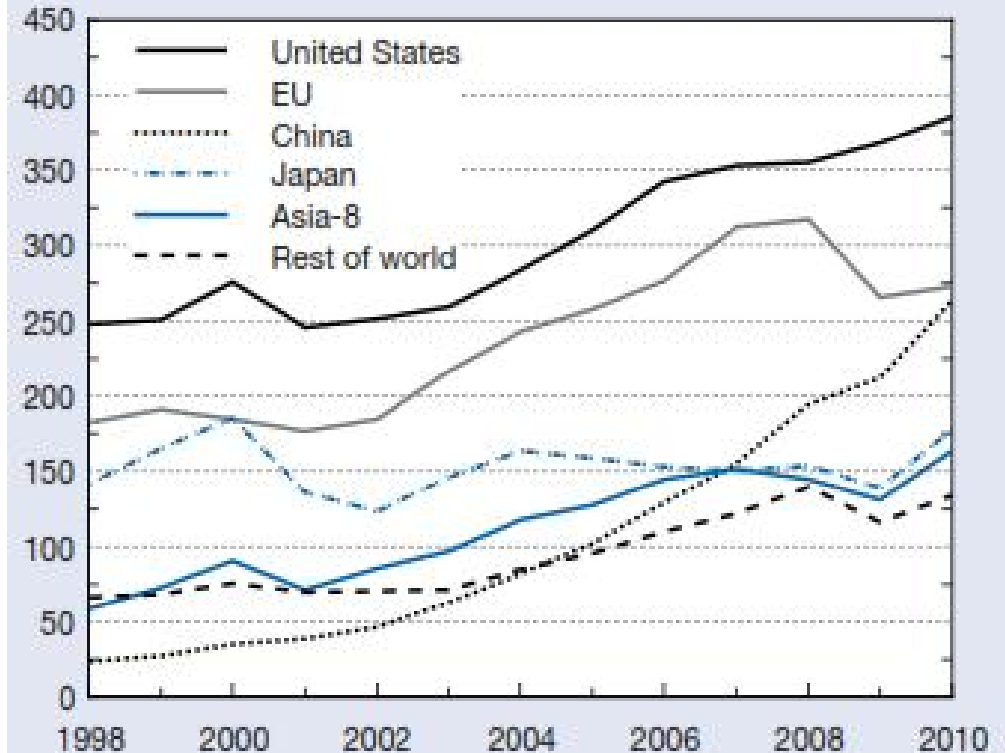
Dollars (billions)



Asia-10 = China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand; EU = European Union

**Value added of high-technology manufacturing industries, by selected region/country: 1998–2010**

Dollars (billions)



The technology gap of EU vs. US and China is widening

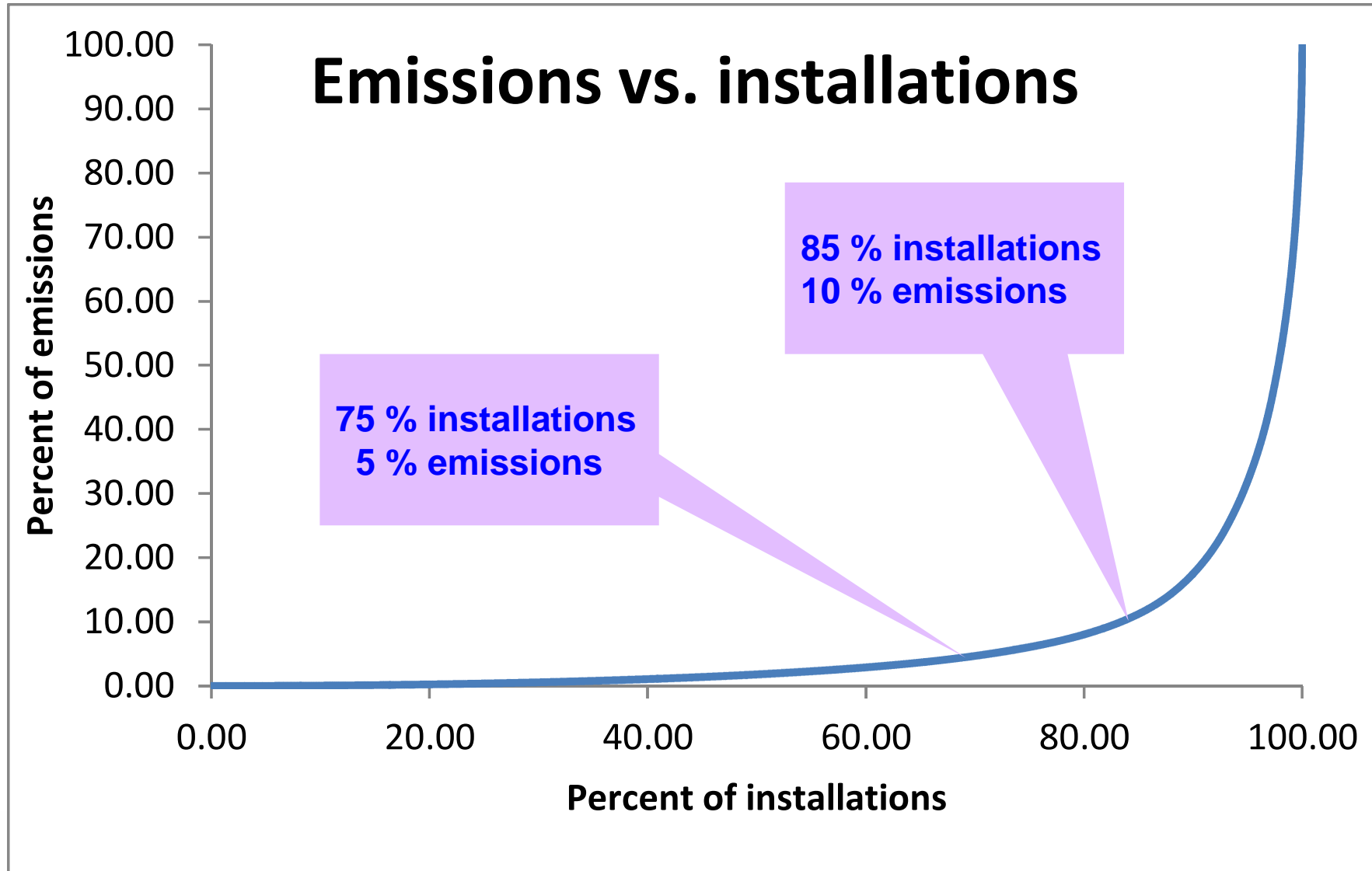
**(5)**

**Small emitters  
may be considered for a different instrument**

**85 % of installations account for  
only 10 % of total emissions**

# Highly unequal size distribution of installations

## 85 % installations account for only 10 % emissions



# Not back to square one but opening the mindset for a structural reform

- **Embedding EU ETS into a targeted technology package**
- **Focusing on big emitters and long-term emissions targets**
- **Maintaining the stringency of the targets independent of output fluctuations by an enhanced supply mechanism**

**Thank you.**

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