

# **Is there a room for a CO<sub>2</sub> Central Bank ?**

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1. Do we need more carbon market regulation ?
2. The components of a carbon market regulation
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4. Promoting Carbon Market transparency
5. Helping Carbon Price discovery : the case for a CO<sub>2</sub> Central Bank.

ANNEXES

# Do we need more carbon market regulation? (1)

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- According to textbook theory, the public authority sets up the cap => trading will spontaneously emerge
- The European carbon market is functioning:
  - For almost 12000 industrial plants, emitting CO<sub>2</sub> now has a cost
  - This cost is an international reference
  - It reflects market fundamentals (See Graph 1 in annex).
- A large part of the market is already under regulation :
  - The largest part of derivatives transactions (80-90% of the market) is already under European financial regulation
  - There will be significant extension of harmonized regulation as of Phase 3 with large scale auctions on the primary market.
- VAT frauds or Cyber criminality are not specific to carbon markets

# Do we need more carbon market regulation? (2)

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- The EU carbon market was essentially created as a result of a regulation aimed at reducing GHG emissions. It features :
  - A new class of assets : the right to emit  $\text{CO}_2$  in the atmosphere
  - A compliance market on which industries have to trade this new asset.
- The value of the associated carbon asset relies on the credibility of the regulation.
- Disturbances on this market, due to weak regulation, undermine confidence, credibility and reputation.
- Without appropriate and credible regulation, this market could simply disappear.

# The components of a carbon market regulation (1)

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- Using existing regulation :
  - Financial regulation covers already most of the trading
  - Energy regulation helps but is not effectively harmonized among European Union
- No basic conflict between a “tailor-made” regulation and a “financial based” regulation :
  - In a tailor-made regulation, 80 to 90 % of trading would be covered by the financial regulation under ESMA supervision
  - In a “financial based” regulation, EUA would be qualified as “financial instruments”, but most of the compliance players would be exempted of standard obligations
  - In both cases it is necessary to define specific rules tailored to a new compliance market.
- A governance challenge: The EU-ETS has been established in a very decentralized framework. Enhanced regulation requires more coordination and some centralization.

# The components of a carbon market regulation (2)

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- Enhanced market security (on implementation)
  - Security of market infrastructures is essential for confidence.
  - Confidence of market players is a prerequisite.
- Greater market transparency (on process)
  - Preventing market abuses and manipulations
  - Market transparency with release of information understandable by the public is a condition of political acceptance.
- Facilitated carbon price discovery (to be discussed)
  - Reducing volatility and avoiding price shocks
  - Primary and secondary market regulations have to be linked
  - Towards a quantitative regulation (similar to a Central Bank) ?

- At the launching of carbon markets, main concerns were on derivative markets (risks of “speculation”, manipulation ...).
- So far, the main difficulties have appeared on the spot market.
- What is at stake ?
  - Carbon assets worth 30-50 Bn €
  - Carbon transactions valuing more than 70 Bn € per year
  - High costs of regulation failures : VAT frauds = 5 Bn € ; EUA-thefts = 50 Mn € compared to the cost of regulation.
- The real challenge is not the cost but a new governance to find with 27 State members :
  - stronger coordination and centralization in registries management;
  - Harmonized legal status of Allowances and liabilities among EU.

# Market Transparency: The information challenge

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- A lot of partial data is available, generally at a price:
  - Pre-trade and post-trade data on trading platforms
  - Private data providers : Point Carbon, Reuters, etc.
  - Brokers, banks analysts, consultants, etc.
- A huge quantity of information is sleeping in registries
  - Each spot transaction in the EU is registered in two accounts
  - It is technically possible to get rapidly exhaustive, reliable and traceable information via registries on the carbon spot market
  - This information is not released to the public before 5 years, and has been marginally used for market oversight by public authorities.
- Crucial need of information consolidation:
  - There is a lack of information on the fundamentals of the market (links with energy markets, CER and ERU entering the market, etc. )
  - Market oversight needs greater consolidation of information and clear interpretation by public authorities in charge of regulation.



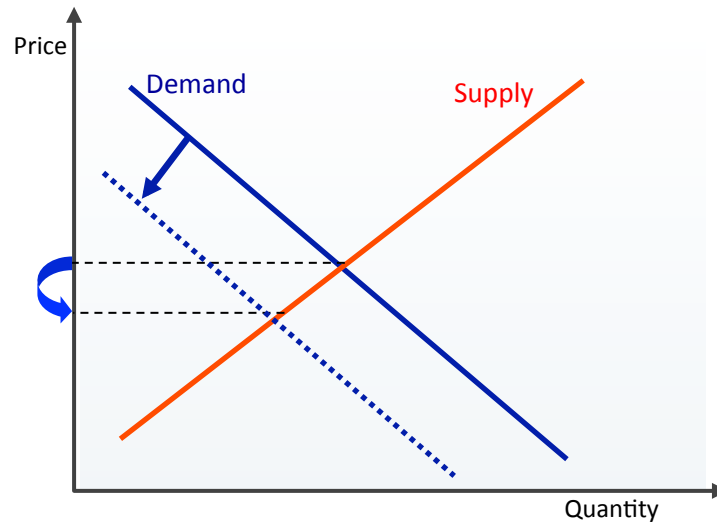
# Facilitated carbon price discovery: An initial observation

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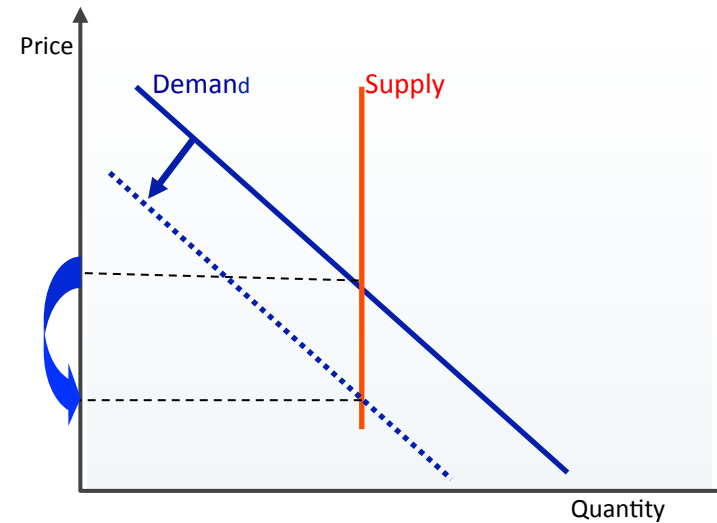
- Before the implementation of a carbon market, the main concern is the risk of excessive prices:
  - Theoretical approach on cost-containment in the case of imperfect information (Weitzman)
  - “Safety valves” debates in the US
  - Over-allocation during the first period of EU-ETS and discussions during the Energy-Climate Package negotiation.
- When observed *Ex Post*, there is also a risk of carbon price collapse, which could undermine the environmental goals of the market : EU-ETS; regional & voluntary markets in the US
- A more general rule : usually an over-evaluation of the costs of environmental policies by *Ex Ante* assessments.

# Facilitated carbon price discovery : The risk of market instability

Demand change on a standard  
Market:



Demand change on a cap and trade  
market:



# Facilitated carbon price discovery : standard decisions

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- To reach its goals, the carbon market regulator has to:
  - Create scarcity on the present rights to emit CO<sub>2</sub> (short term emission cap)
  - Create scarcity on the future rights to emit CO<sub>2</sub> (long term emission goals)
  - Organize the market such that players face a price signal in line with short and long term emission/abatement targets.
- Standard answers to avoid market instability :
  - Full banking (avoiding a price collapse in case of surplus of allowances)
  - Some borrowing (covering actual emission with future rights is a “safety valve” with some risks for the future compliance periods)
  - Use of offsets to supplement allowances makes the supply curve more elastic in the short run.
- Achieving the full effect of these measures implies :
  - Availability of perfect information on the CO<sub>2</sub> market (present and future) ;
  - Long term anticipation by market players (implicit condition of perfect capital market, without any liquidity constraint).

## Facilitated carbon price discovery: the case for a CO<sub>2</sub> European Central Bank (ECB)

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- So far important decisions (banking, borrowing, offsets) are taken without explicit assessments of their economic implications;  
=> a CO<sub>2</sub> ECB could do the job with insight.
- The introduction of a large primary market in 2013 with harmonized regulation enlarges the scope of the market under regulation;  
=> This provides the CO<sub>2</sub> ECB with the means of adjusting the supply of carbon currency to market conditions.
- There is a risk of decisions by Member States to intervene at national levels on carbon prices undermining collective efficiency.  
=> Better to delegate all the market intervention prerogatives to a European CO<sub>2</sub> ECB.
- EU-ETS is an instrument helping the public authority to find the right carbon price to reach its short and long term goals;  
=> a CO<sub>2</sub> ECB would help this long term discovery process.

# The job of an independent European CO<sub>2</sub> Central Bank

	Monetary Market	Carbon Market
<b>Final target</b>	Long term monetary stability	Long term emissions reduction trajectory
<b>Market oversight</b>	Integrity and liquidity of transactions	Integrity and liquidity of transactions
<b>Price instrument</b>	Interest rates	Carbon prices
<b>Quantitative regulation</b>		
• <b>Primary market</b>	Supply of central money ( $M_0$ )	Allowances auctioning
• <b>Secondary market</b>	- Open Market (sell and buy monetary assets) Exchange rate	- Sell, buy, set aside carbon assets - Links with other markets (offsets, other cap & trades, ...)
<b>Reporting to public authorities</b>	Impacts of monetary policy on inflation and economics performances	Impacts of carbon market on transition toward low carbon economy

- The three main issues of a carbon market regulation :
  - Security of transactions : an information challenge which are tackled by new rules on registries and private initiative to secure the market
  - Transparency and fairness of transactions : the main challenge of the market oversight currently discussed, which raises a complex governance and legal challenge
  - Carbon price discovery :
    - in case of perfect information and perfect capital market the market would deliver the “right carbon price”
    - In the real world many market imperfections justify the existence of an independent CO<sub>2</sub> ECB whose job id to help the collectivity to find the “right price”.

**Thank you for your attention!**

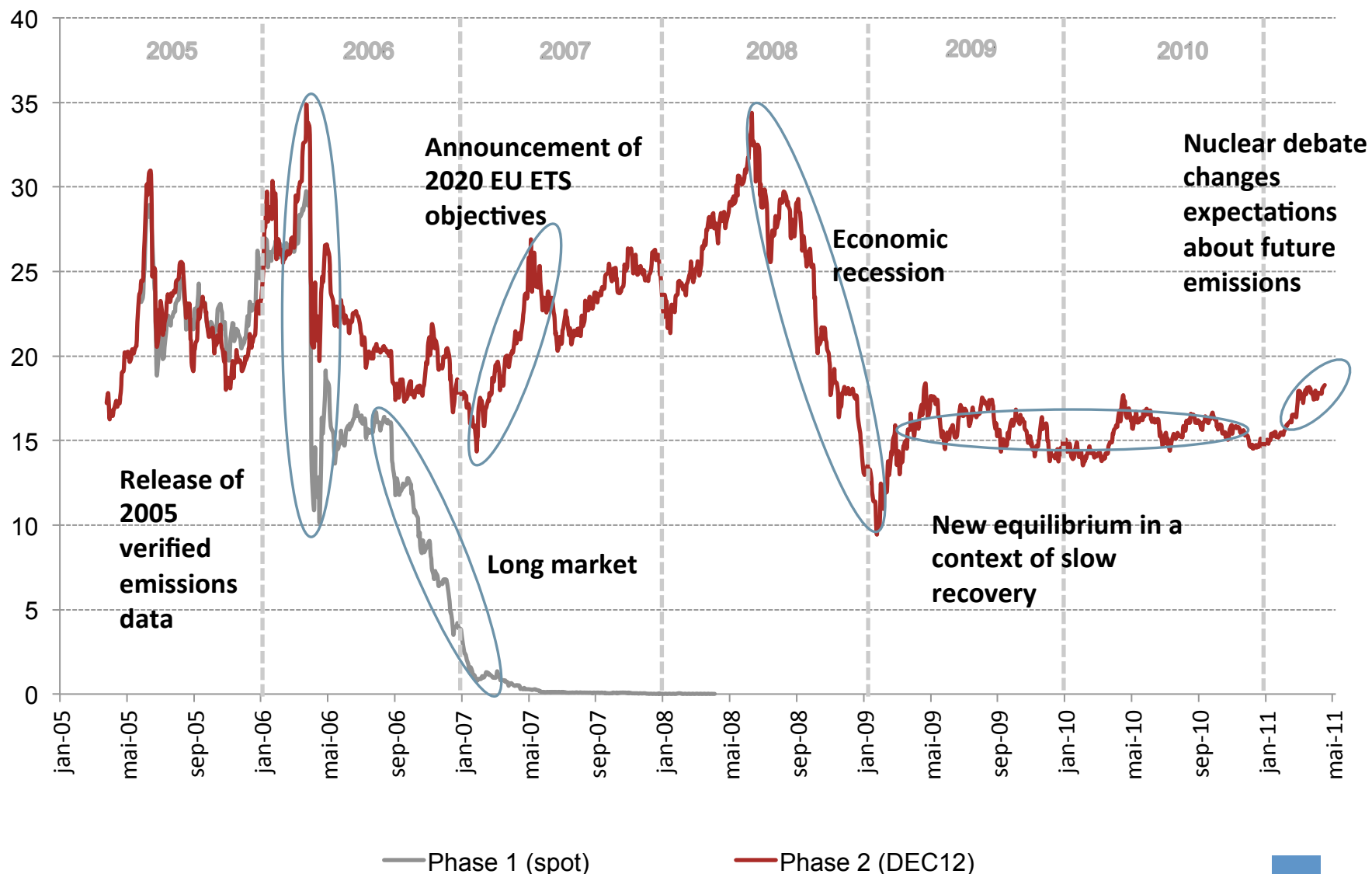
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- Annex 1 : Carbon price on EU-ETS
- Annex 2 : Transaction on the market
- Annex 3 : prices volatility



# What does the allowance price reflect?



## EUA transaction volumes and values

	<b>Volumes exchanged (millions of EUAs)</b>	<b>Value exchanged (millions of euros)</b>	<b>Average EUA spot price, €/t</b>	<b>Average EUA price, period 2 (Dec. 2012 contract, €/t)</b>
<b>2005</b>	262	5,659	22.5	21.6
<b>2006</b>	809	18,283	17.3	22.6
<b>2007</b>	1,455	31,574	0.7	21.7
<b>2008</b>	2,713	69,724	22,33	25.7
<b>2009</b>	4,952	75,766	13,15	15.3
<b>2010</b>	4,834	74,444	14,34	15.4

Source : Author's calculations using data from Point Carbon, BlueNext and ECX.

# An unstable price?

Volatility of energy commodities (in %, 15-day moving average)

	<b>EUA spot period 1</b>	<b>EUA spot period 2</b>	<b>EUA Dec. 2012</b>	<b>Gas (Month ahead)</b>	<b>Coal (Month ahead)</b>	<b>Oil (Month ahead)</b>
<b>2005</b>	39	-	43	83	13	29
<b>2006</b>	57	-	44	102	16	25
<b>2007</b>	160	-	34	88	15	25
<b>2008</b>	-	37	33	51	34	49
<b>2009</b>	-	44	43	73	28	44
<b>2010</b>	-	26	26	50	23	25
<b>Range</b>	39-160	26-44	26-44	50-102	13-34	25-49

Source : Climate Economics Chair calculations