



Arnaud Brohé,
CO2Logic

The Kyoto Protocol

- Protocol to the UNFCCC
- First Draft of a Global Emissions Trading System
- Cap and Trade system
 - Target emission level: 5.2% below 1990 emissions on average during “First Commitment period” 2008 – 2012
- Two categories of countries:
 - Capped countries** (developed countries) a/o all EU members, Russia, Ukraine, Japan, Canada, New Zealand, Australia:
 - Targets to reduce emissions
 - Non-capped countries** (a/o Brazil, China, India):
 - No obligation to reduce, but incentive to do so through the “Clean Development Mechanism”....

The Kyoto Protocol



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Examples of some targets

Country (Annex I)	Target
EU-15, new EU states, and Switzerland	8% decrease
Canada, Japan	6% decrease
New Zealand, Russia, Ukraine	0 - emissions constant
USA	7% decrease
Norway	1% increase
Australia	8% increase

The Kyoto Protocol

Six Kyoto Greenhouse Gases

Greenhouse Gas	CO ₂ Equivalent
1. Carbon dioxide (CO ₂)	1
2. Methane (CH ₄)	21
3. Nitrous oxide (N ₂ O)	310
4. Hydrofluorocarbons (HFC's)	150 – 11,700
5. Perfluorocarbons (PFC's)	6,500 – 9,200
6. Sulphur hexafluoride (SF ₆)	23,900

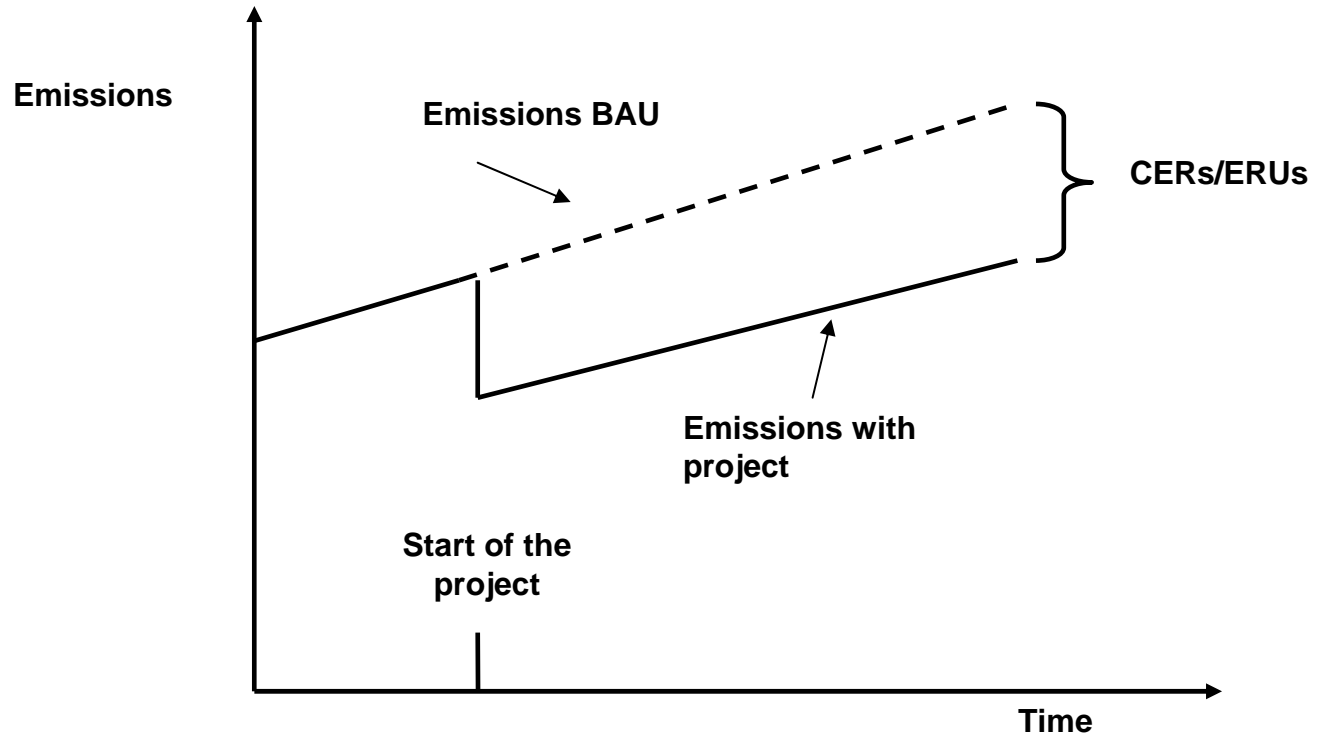


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The Kyoto Protocol Project-based mechanism

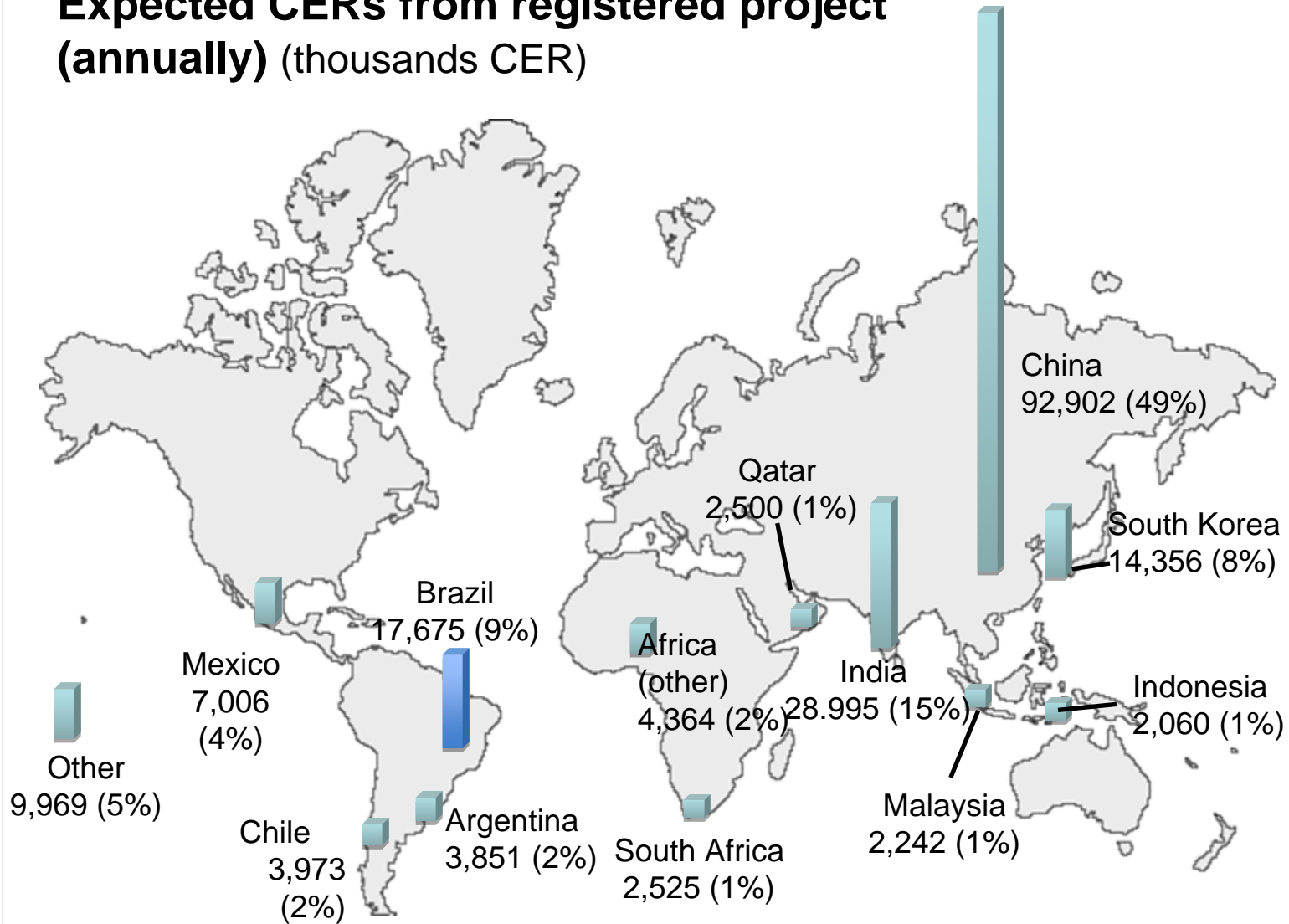


Source: *Carbon Markets. An International Business Guide*



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Expected CERs from registered project (annually) (thousands CER)



Source: CO2logic (raw data: UNFCCC)



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The EU ETS

The principal response from the EU to achieve Kyoto targets in EU MS

- EU has passed through its obligations and imposed limits for greenhouse gas emissions on site level.
- The EU ETS is therefore a sub-market of the Kyoto market.
 - 11,000 installations in the EU (main emitters)
 - Cap and Trade system:
 - Installations are entitled EU Allowances (EUA)
 - At the end of each year, companies have to surrender an EUA for each ton of emissions (CO₂) they emit
 - High penalty for non compliance - EUR 100/ton CO₂
 - 3 phases/ periods: 2005 - 2007 / 2008 - 2012 / 2012 – 2020, more to follow



Arnaud Brohé,
CO2Logic

The EU ETS



Company A (in EU)

Allowance: 100 tCO₂

Real Emissions: **110 tCO₂**

Shortage: 10 tCO₂



Company B (in EU)

Allowance: 100 tCO₂

Real Emission: **90 tCO₂**

Surplus: 10 tCO₂



Company C

(OUTSIDE THE EU)

Allowance: NA

Emissions before: 100 tCO₂

Project reduces emissions:

-10 tCO₂

Emissions after: **90 tCO₂**

CERs: 10 tonne CO₂

Option 1:

Company A reduces its own emissions by 10 tonnes

Option 2:

Company A buys 10 tonnes of Allowances from company B

Option 3:

Company A buys 10 Certified Emission Reductions (CER's) from company C

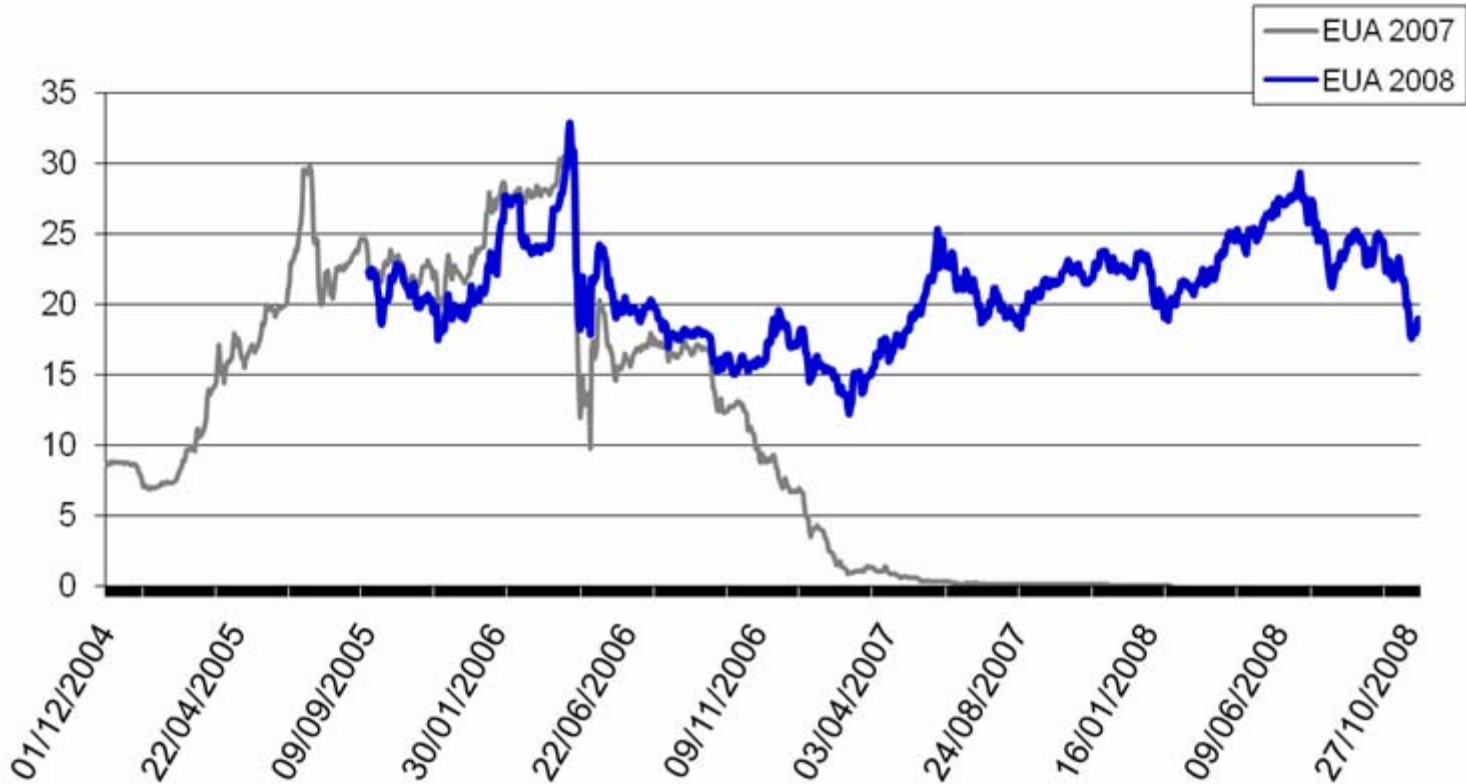
Evolution of EUA prices

EUA 2009 spot price (08/17/09): €14.4



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EUAs 2007 and EUAs 2008 prices (in euros)



Source: Carbon Markets. An International Business Guide



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Recent EU ETS developments

- Enlargement to other countries (EEA)
- Inclusion of the aviation sector
- Expansion to other gases (NO_x, PFCs)
- Exclusion for smaller installations
- EU wide cap
- New project mechanism
- Flexibility with a future international agreement