

Overview of the Carbon Market

Discussion on the Kyoto Protocol And The Clean Development Mechanism

Asian Institute of Management Policy Center

29 May 2008



OUTLINE

- ❖ **Project Financing**
- ❖ **Carbon Financing**
- ❖ **Carbon market**



Different types of financing

- Project Financing
 - Underlying financing
 - Financing of investment and construction costs, operating and maintenance
- Carbon Financing
 - Revenue earned from the carbon credits
 - An enhancement
 - Typically 5 to 15 % of total project costs



Project Financing: Sources of Finance

Project Cost Includes

- Investment costs, development costs, all costs up to commissioning of project

Sources of Finance

- Debt or Equity
 - Typical sources of funding: international development banks, local banks, government funding, private financing, technology provider, supplier credit
- CER sales = typically 5-15% of total project costs



Carbon Financing: Options in a CDM Project

A. Carbon Funds

- Annex I investors contribute to a mutual fund
- Examples of carbon funds
 - **World Bank and Multilateral Carbon Funds**
 - BioCarbon Fund (USD53.8 M)
 - Community Development Carbon Fund (USD128.6 M)
 - Italian Carbon Fund (USD155.6 M)
 - The Netherlands CDM Facility (USD264.7 M)
 - Danish Carbon Fund (USD68.5 M)
 - Spanish Carbon Fund (USD278.6 M)
 - Umbrella Carbon Facility (USD719 M)
 - Carbon Fund for Europe



Carbon Financing: Options in a CDM Project

- **Government Carbon Funds**

- The Austrian JI/CDM Programme (36 M Euros annually)
- The Belgium Federal JI/CDM Tender (9.3 M Euros for 2005)
- The Danish Carbon Tender
- The EcoSecurities Standard Bank Carbon Facility
- The Finnish JI/CDM Pilot Programme (20 M Euros)
- The Flemish Government JI/CDM Tender (70 M Euros)
- The Rabobank-Dutch Government CDM Facility
- The SICLIP 2002 -2012



Carbon Financing: Options in a CDM Project

- Private Carbon Funds

- European Carbon Fund (105 M Euros)
- GG-CAP Greenhouse Gas Credit Aggregation Pool (72 M Euros)
- ICECAP (50 M Euros)
- Japan Carbon Finance Ltd (USD141.5 M)
- KfW Carbon Fund
- **Post 2012 Carbon Fund of the European Investment Bank (EUR 100 million) launched in September 2007 will support carbon credits generated in the period 2013-2022**



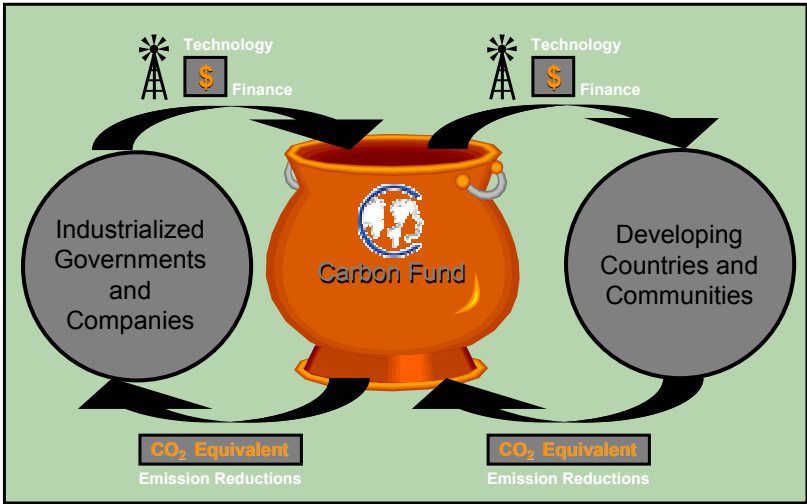
Carbon Financing: Options in a CDM Project

B. Other Buyers

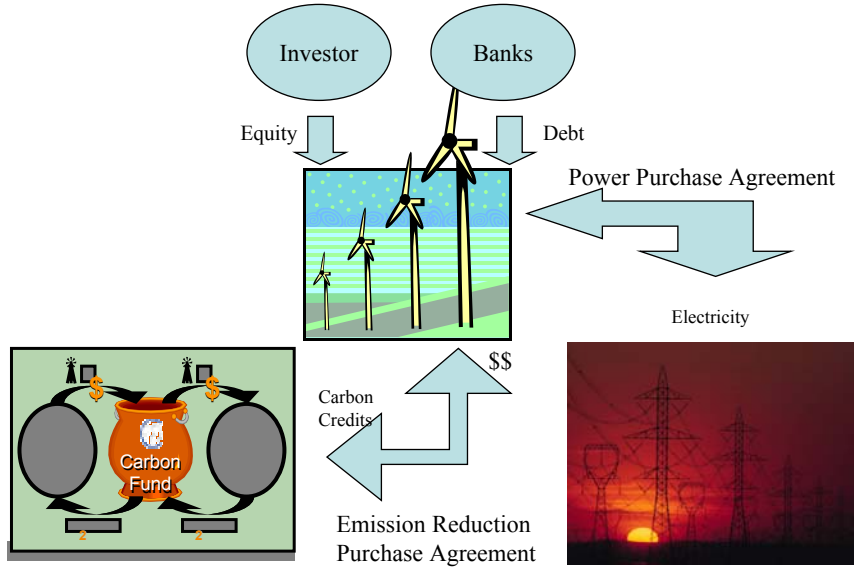
- Private companies from Annex I countries will directly negotiate for carbon credits
 - ❖ Tokyo Electric
 - ❖ British Petroleum
- Carbon brokers/aggregators- They pool carbon credits
 - ❖ Development Bank of the Philippines (*Carbon Investment Banking Facility*)
 - ❖ CDM Consultants
 - ❖ CarbonAided, www.carbonaided.com (sells carbon off-set)
 - ❖ Encore Carbon Ltd , China
 - ❖ Carbon Asset Management, Stockholm, Sweden



How Carbon Funds Work..



Nature of Carbon Financing Contract





Carbon Market



What is the carbon market?

- ❑ It is a market where greenhouse gas emission reduction units are bought and sold.
- ❑ The currency used is tonne carbon dioxide equivalent or **tCO₂e**.



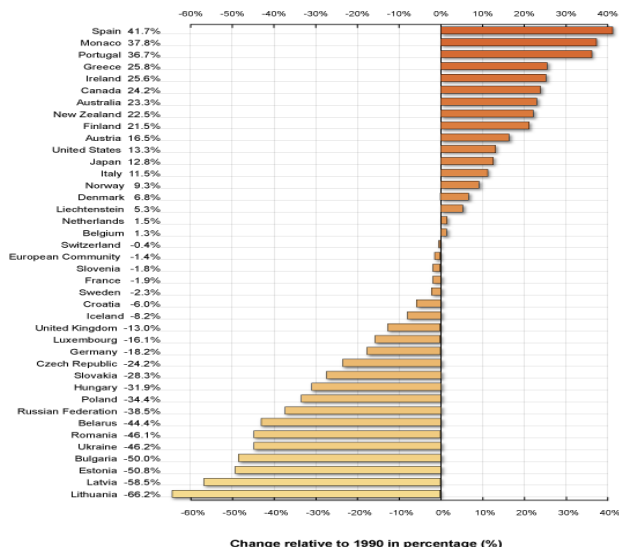
Why is there a need for carbon market?

- 38 countries faced reduction /limitation commitments with an overall reduction of 5.2% from 1990 emission levels.
- The commitments respond to a GHG reduction of 30% - 40% below business as usual forecasts over period 2008 - 2012



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Total aggregate greenhouse gas emissions of individual Annex I Parties, 1990-2003*



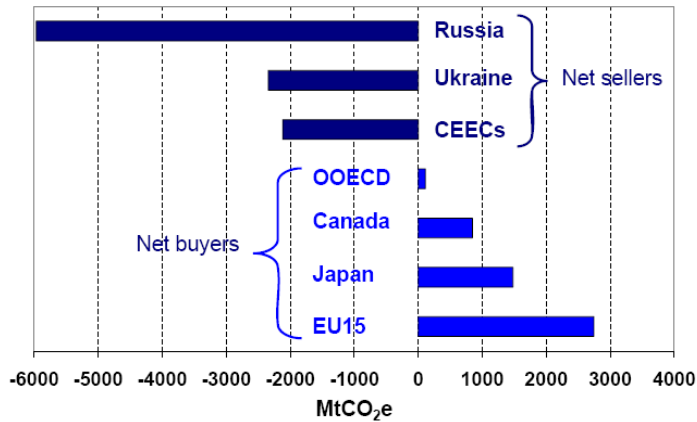
* The change related to 1990 shown here is for 2002 except for Liechtenstein (1990), Poland (2001) and Russian Federation (1999)

Source: Earth News, www.earthportal.org

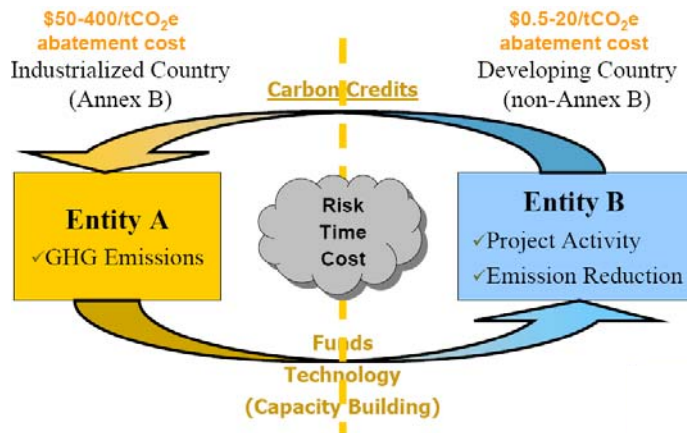


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Annex B target vs. Business-as-Usual trends



Why trade carbon?



What are the examples of Carbon Markets?

Regulatory regime:

- 1) **Kyoto** (2008-12), which includes allowance trading and project based transactions through **the Clean Development Mechanism (CDM)** and **Joint Implementation (JI)**
- 2) **European Union Emissions Trading Scheme (EU ETS)** (2005-8), EU-wide pilot scheme to help EU nations meet Kyoto targets, allows credits from CDM and JI projects to be imported into the market
- 3) **The New South Wales GHG Abatement scheme (2003-12)** in Australia, regulated by the state of New South Wales, creates emissions benchmarks for electricity retailers



What are the examples of Carbon Markets?

Voluntary regime:

- 1) **United Kingdom Emissions Trading Scheme (UK ETS)**, companies can opt into scheme and receive financial incentives
- 2) **Chicago Climate Exchange**, a voluntary trading scheme in the US
- 3) **Retail market**, which generally consists of small project-based emissions reductions not used for compliance or trading



What are the carbon units available in the market?



Assigned Amount Unit– from Annex 1 party
Example: European Union Allowances (EUAs)



Emission Reduction Unit
- Generated by JI projects



Certified Emissions Reduction
- Generated by CDM projects



What are the carbon units available in the market?



Removal units Emissions stored in forest projects, generated and traded under CDM and JI



Temporary CER – generated by forest projects wherein the expiration is based on the commitment period



Long-term CER– generated by forest projects wherein the expiration is based on the crediting period



What are the carbon units available in the market?

Verified Emission Reduction units



or



Generated by projects not necessarily compliant with the Kyoto Protocol; pre-registration stage

Emission offsets are verified by independent agents but not necessarily certified by a regulatory authority

Unit of measurement:

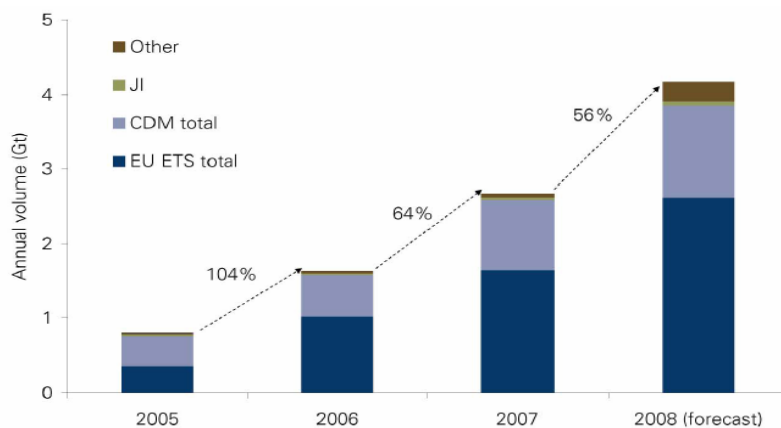


= 1 tonne of CO₂ equivalent (tCO₂e)



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What is the size of the carbon market?



Source: Point Carbon



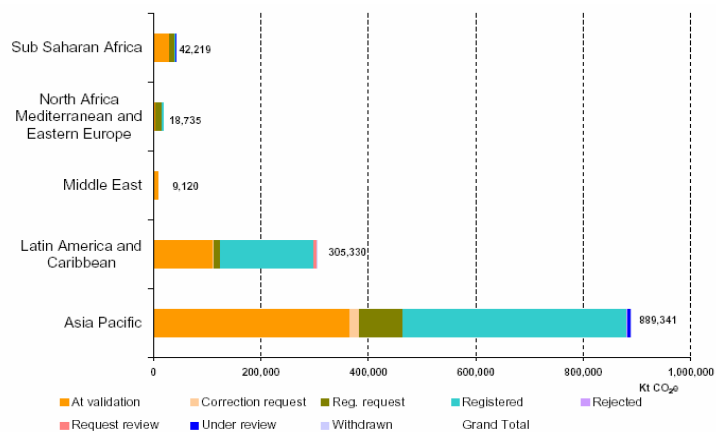
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What is the size of the carbon market?

- ❖ 2007 carbon market valued at 40 billion Euros
- ❖ Nearly 1 billion project credits traded in 2007
- ❖ The market is still dominated by CDM
- ❖ Secondary market rising rapidly



Who are selling?

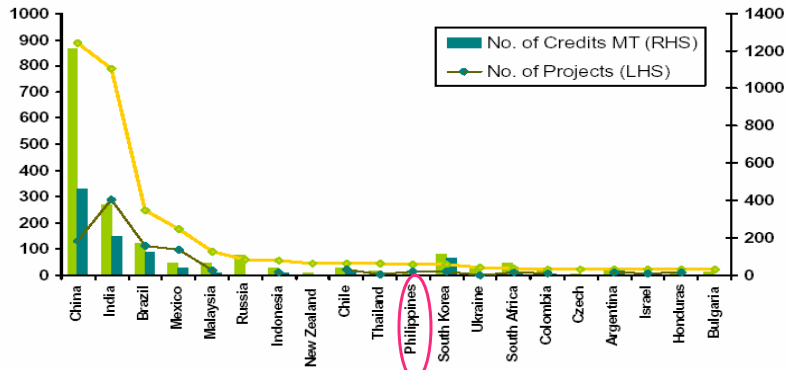


Source: Ecosecurities



Who are selling?

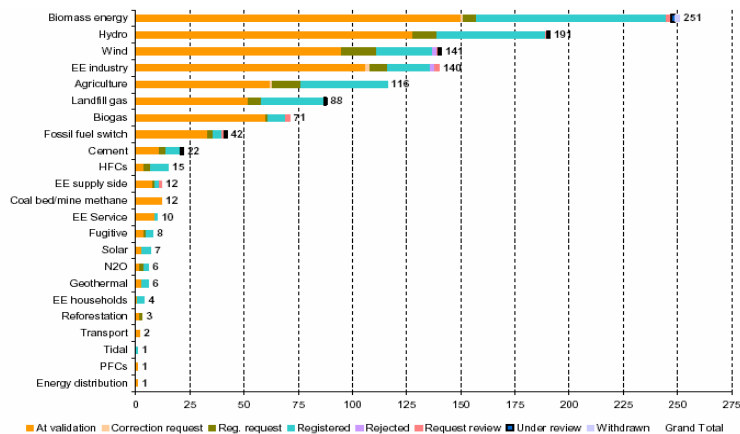
- 2,728 MT credits to end-2012 from 3,016 projects in 84 countries
- REG: 1,118 MT credits from 848 projects in 50 countries



Source: ABN AMRO Bank N.V. data



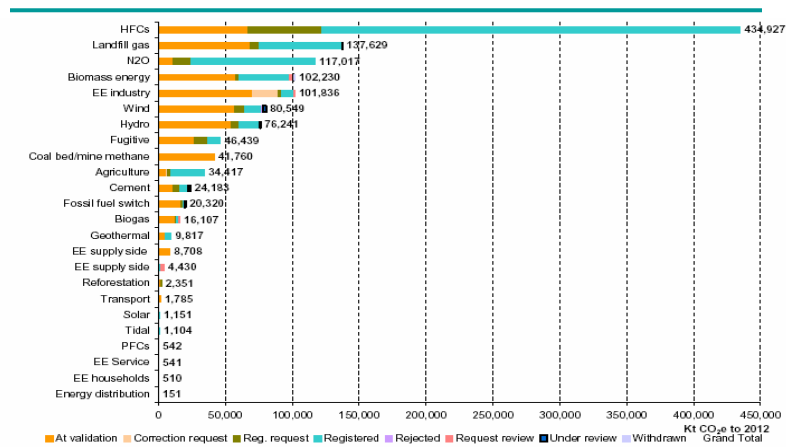
What project types are being sold?



Source: Ecosecurities



What project types are being sold?



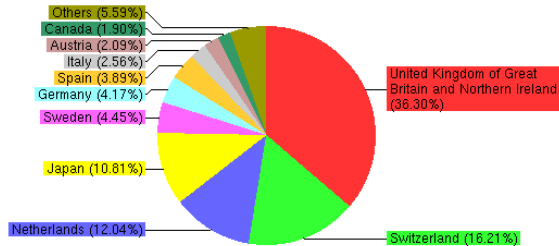
What is the market profile?

- The market is presently dominated by Asia Pacific (China and India)
- This is followed by Latin America (Brazil, Mexico and Chile)
- Biomass and Hydro projects dominate the number of projects.
- But HFC projects represent the most number of CERs



Who are buying?

Registered projects by AI and NAI investor parties



<http://cdm.unfccc.int> (c) 20.05.2008 11:53



What is the indicative price for carbon?

Secondary CER assessment

Contract	Low	High
Dec-08	15.90	16.00
Dec-08-12	16.00	16.10

Quoted prices are for euros per CER, at close of market 29 April, according to Point Carbon's methodology. For methodology, see www.pointcarbon.com.



Maraming Salamat!

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