Carbon Markets: international perspective

Carbon Finance Unit
The World Bank

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Carbon Credits and Finance Session
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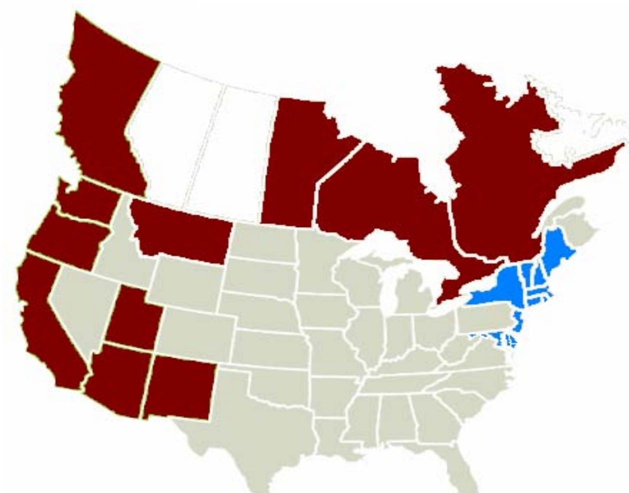
Scope of carbon markets

Kyoto framework

- EU ETS (domestic)
- Kyoto signatories outside EU ETS
- Annex I countries with economies in transition. Potential JI countries
- Non Annex I countries. Potential CDM host countries



Non-Kyoto initiatives

- Regional Greenhouse Gas Initiative (RGGI): States in the Northeastern United States have also passed carbon regulations for stationary sources
- Western Regional Climate Initiative: California is a leading participant in a regional initiative to reduce its emissions, along with several Canadian Provinces.

Source: Element Markets

Carbon markets could pass US$100 billion by the end of 2008…

Allowance markets (US$ million)

EU Emissions Trading Scheme
50,100 in 2007 alone
(more than double from previous year)

New South Wales Certificates
220

Project-based transactions (US$ million)

CDM
7,400 (30% over 2006)

JI
500

Secondary CDM
± 5,500

Voluntary market in 2007 – niche segments (US$ million)

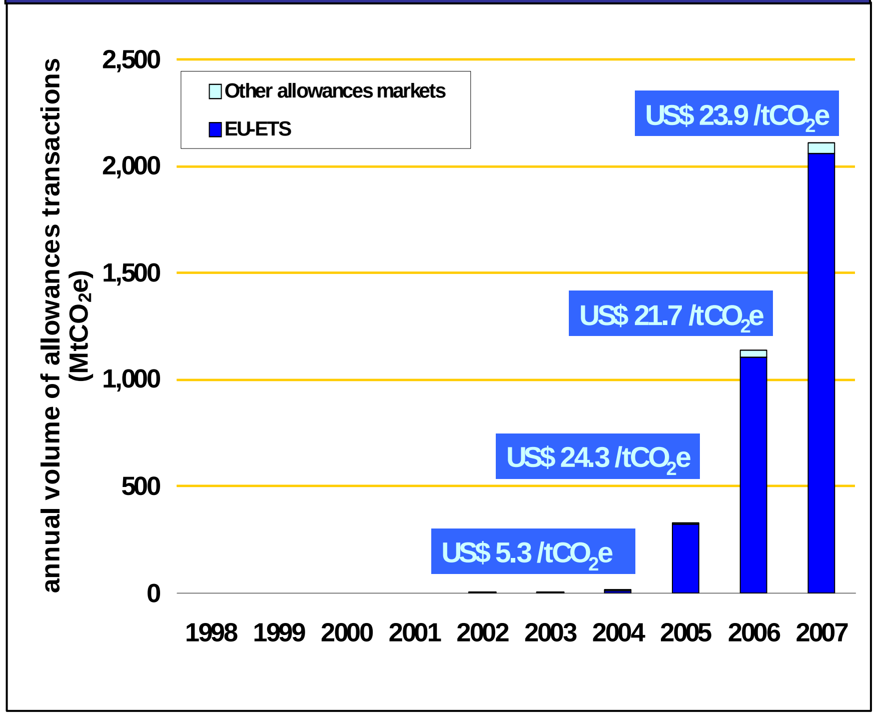
Chicago Climate Exchange
70

Voluntary & retail
270

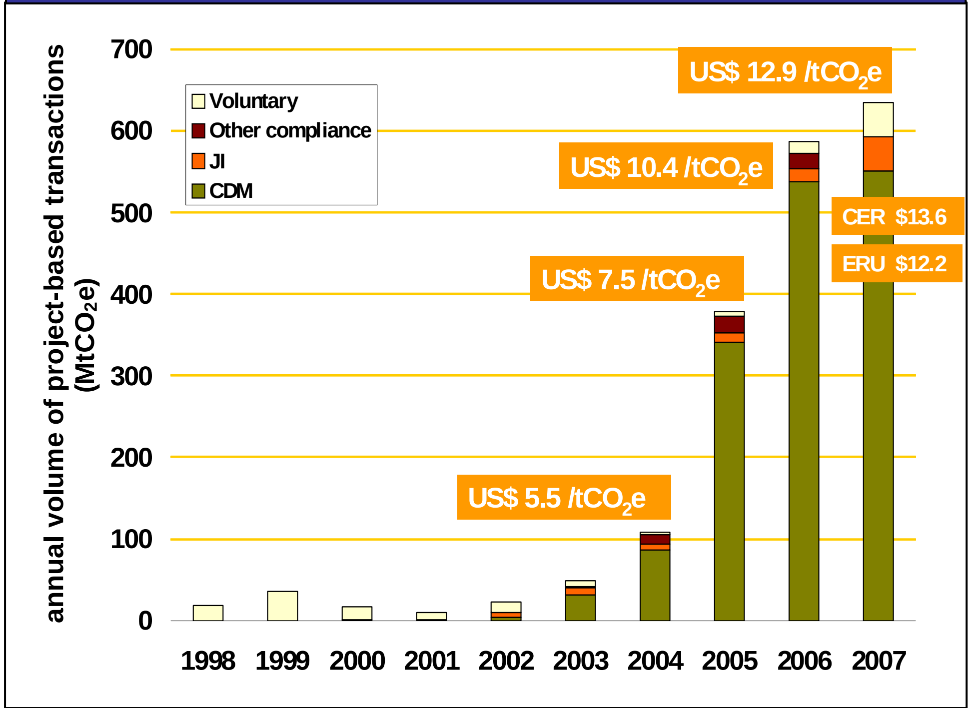
Source: WB State and Trends of the Carbon Market 2008, Reuters 2008

Allowances and project-based markets: rapid growth

Allowances market : EU ETS dominated



Projects market: CDM dominated

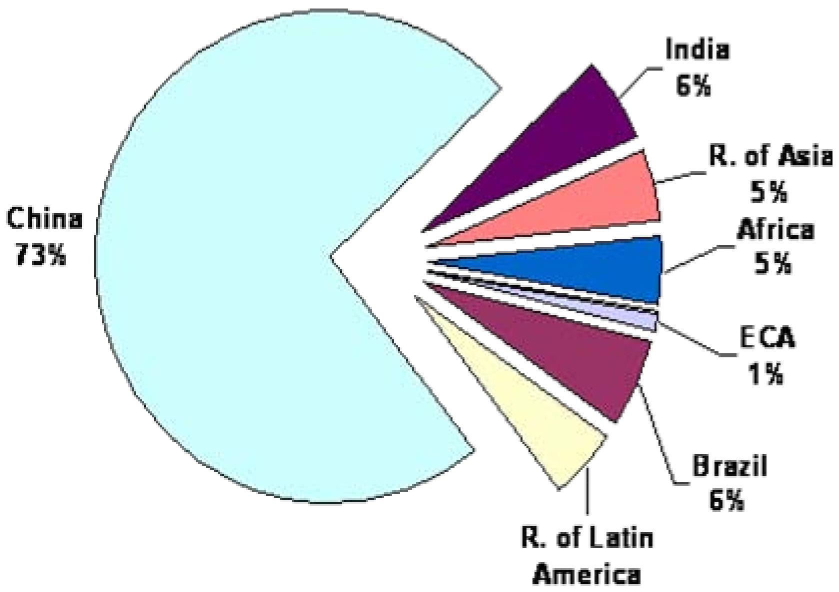


Source: WB State and Trends of the Carbon Market 2008

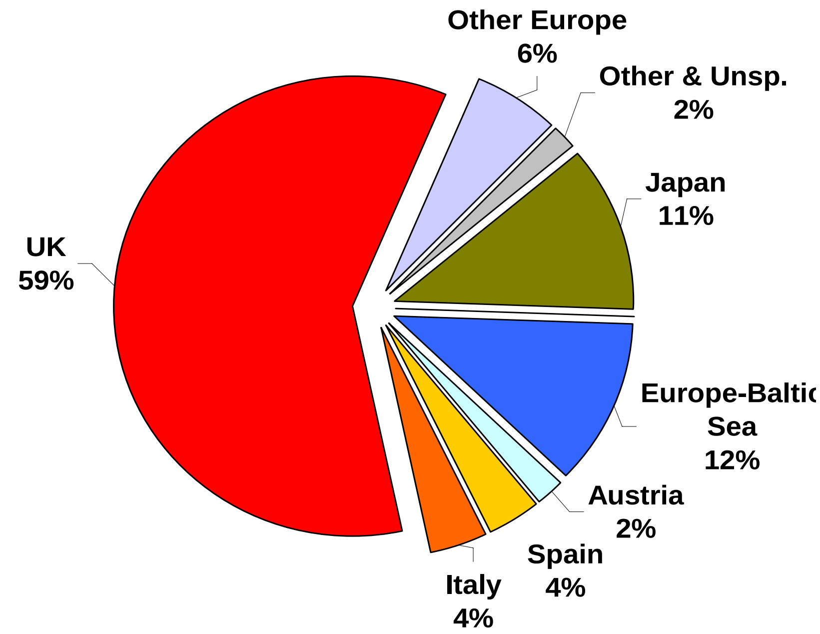
- EU allowances transactions dominate the market (US$23.9/tCO2 in 2007)
- Prices for primary CDM emission reductions increased up to US$13.5 in 2007
- About US$33 billion in clean energy investment was leveraged through CDM in 2007
- Carbon trading about 4GtCO2 in 2007 & physical ER about a half of it
- **Achieving GHG stabilization target requires a reduction of about 34 GtCO2/y by 2050**

CDM by far dominates the primary market for project-based ER

Location of CDM projects (percentage of volume, 2007)



CDM/JI buyers (percentage of volume, 2007)



Source: WB State and Trends of the Carbon Market 2008

- China consolidates lead, Africa emerges
- Smaller projects and aggregation opportunities bypassed
- Many countries with high emissions have relatively low presence in carbon markets

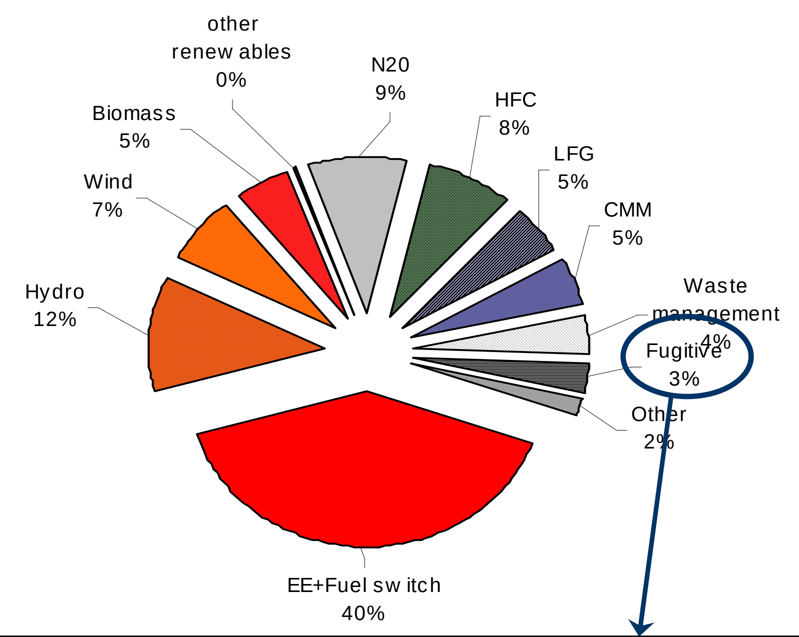
CH_4 emissions from Natural Gas&Oil: Untapped CDM/JI opportunity

- 10 top emitters: about 67% of worldwide CH4 emissions in 2005
- Up to 795 MtCO2e by 2015 for key countries (+27% or a growth by about 170 MtCO2e/y)

Country	Emissions, $MtCO_2e$
Russia	172.7
Unites States	127.6
Ukraine	90.8
Mexico	77.2
Iran	58.7
Rest of Middle East	51.4
Nigeria	51.3
Turkey	50.9
Indonesia	48.6
Turkmenistan	46.2
Top 10	775.4
World	1,165.0

Country	Emissions, $MtCO_2e$
Venezuela	45.4
United Arab Emirates	39.8
Uzbekistan	39.7
Canada	38.3
India	26.0
Rest of SE Asia	19.7
Algeria	15.1
Argentina	15.1
Romania	9.3
Kuwait	8.9
Colombia	1.9

Source: Global Anthropogenic Emissions of Non-CO2 GHG 1990-2020, US EPA, June 2006



- Fugitive emission reductions represent only 3% of contracted CDM volumes in 2007
- Share of fugitives JI market is relatively bigger, but unevenly distributed

CDM/JI fugitive emission reductions: Challenges & Opportunities

Barriers for fugitives emission reductions

- Regulatory & market structures
- Technology risks
- Market structure/ price structure
- Involvement of multiple actors: coordination & management issue
- Budgetary constraints for state-owned companies
- Low priorities due to lack of incentives/ low awareness
- Highly-integrated measures
- Small-scale multiple measures: high transaction costs

Carbon Finance contribution

- Enhance financial viability of projects
- Risks mitigation through capacity building & technology transfer

BUT:

- Significant time and effort needed to develop carbon assets (data gathering, limited scope of methodologies)
- Largely limited to stand-alone projects, though door for “programmatic” CDM is now open
- Uncertainty and delays in the regulatory regime

Next steps to scale-up Carbon Finance contribution

- Providing continuity of carbon market
- Engage on a scaled up basis through programmatic /sectoral approaches
- Simplifying methodologies and auditing process based on industrial practices
- Improving institutional capacity