

State and Trends of the Carbon Market 2006

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CarbonExpo

Cologne, May 12, 2006

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A New Financial Market



Multi-Billion Dollar Overall Market Value

- Over **US\$ 10 billion (2005) and US\$ 7.5 billion (Q1 '06)**
- **EUA trades dominate market in value: 75% (2005); 87% (1Q '06)**
- Volumes and Prices **up across all segments**, including U.S./Aust.
- Carbon derivatives are now traded like **a financial commodity**
- Trade goes **well beyond physical trade** of emissions allowances
- **Policy-makers set emissions caps & market prices carbon**

Meaningful Participation of Developing Countries

- **EU and Japanese demand stimulates supply of credits**
- **CDM: 49.2% of total volume ('05) & 26.2% ('06)**
- Biggest **Sellers: China and Brazil**
- Biggest **Buyers: EU and Japanese private sector**
- **US\$ 4.6 billion committed to purchase CERs and ERUs.** Of this, Gov of Japan (100 MtCO₂e), EU Govs (365+ MtCO₂e).
- Project-based access to CCX and RGGI markets

Methodology



This study is based on the following:

- Analysis of the **World Bank's confidential project database**,
- Material from **Evolution Markets and Natsource**,
- **Interviews** with market players, and,
- A **review** of published literature.

Project database includes:

- **614 project-based transactions** (ERPAs signed)
- Completeness of information >90% in all fields except on exact terms and price of transaction >57%

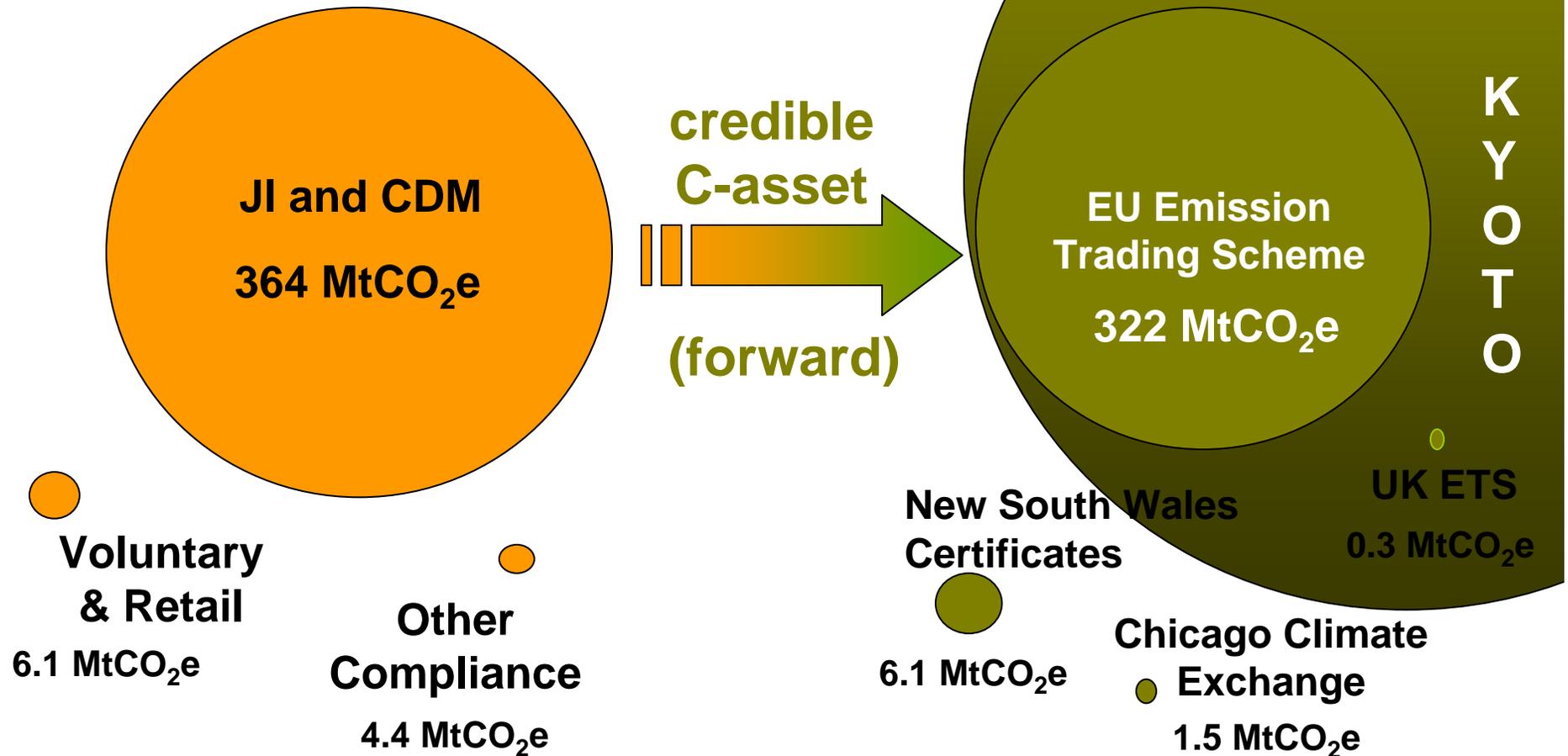
Aggregate data on allowance markets

- From **major exchanges and OTC sources**

Structure of the Market 2005



Project-Based Transactions



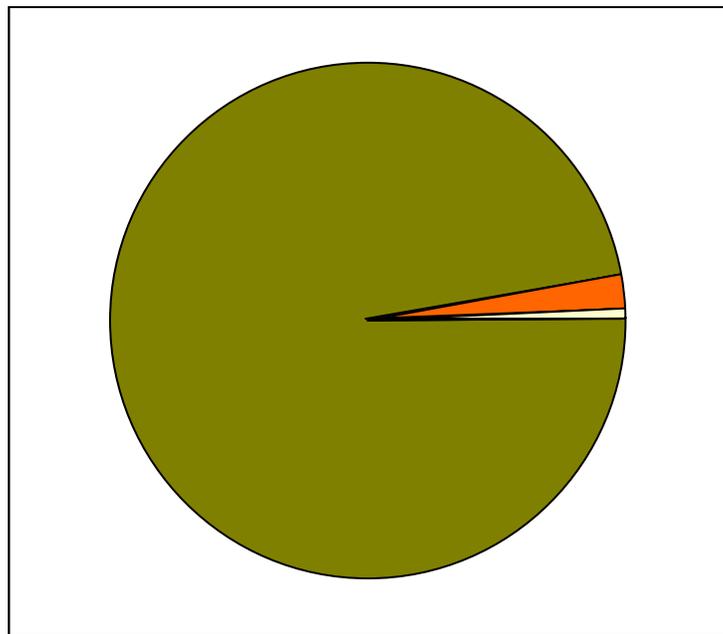


Markets for Allowances

Explosive Growth in Allowance Markets (2005)



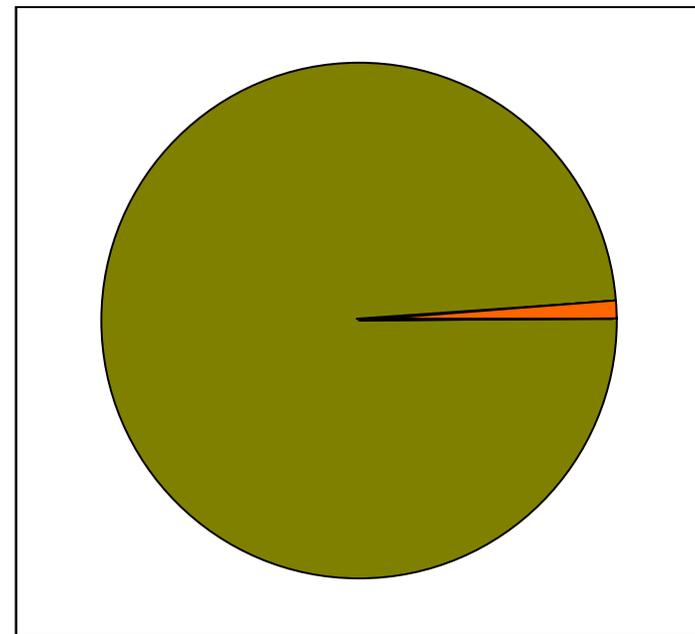
Volume of allowance transactions



volume (MtCO₂e)

EU-ETS: 322.0 **CCX: 1.5**
NSW: 6.1 **UK: 0.3**

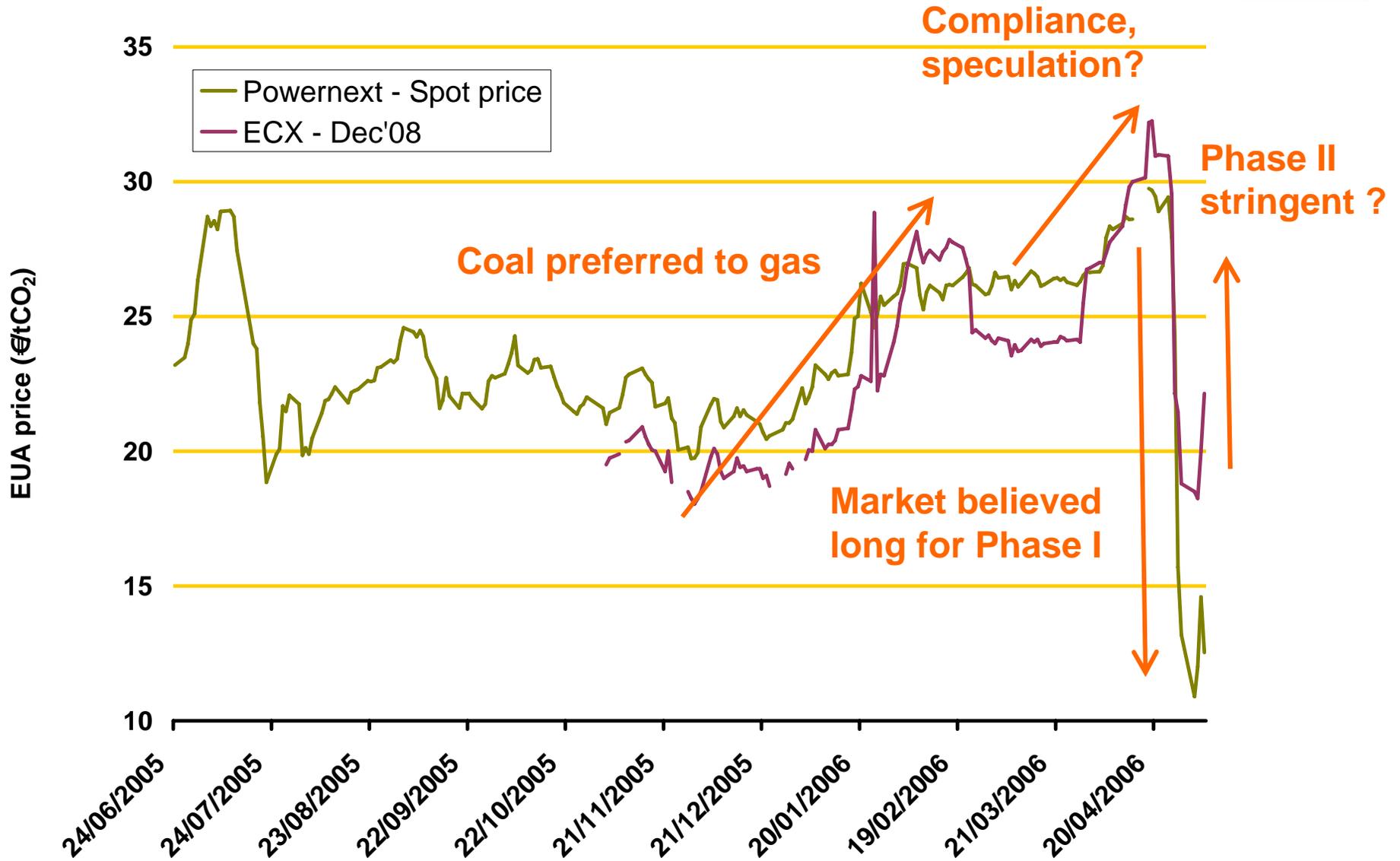
Value of allowance transactions



value (US\$ million)

EU-ETS: 8,220.2 **CCX: 2.8**
NSW: 57.2 **UK: 1.3**

Great (Un)Expectations



EU-ETS Observations



Market internalizes carbon constraint

- Level of Cap sets out desired **environmental performance**
- Cap + trade on exchanges = **transparent price discovery**
- Set **Credible** constraints in line with KP commitments
- Price signal (e.g. on power) likely to encourage **conservation**

Caps + Flexibility + Compliance = environmental results

- Price signal **stimulates CDM** from developing world
- **Limited CERs delivery** for '05-'07 (only 4 million issued in 2005)
- Installations likely to **bank CERs for Ph. II** (supplementarity?)

**Time flexibility (e.g. banking) and Place flexibility (e.g. CDM)
can encourage stronger caps and reduce volatility**

Policy Opportunities: Market Policy and Design Issues



Send policy signal **NOW** for:

- post-2012
- NAPS-3 & beyond
- Long-term signal with short-term true-ups

Consider **interaction with related markets**. Consider **auctioning** as well as **grandfathering** allowances.

Release **accurate baseline emissions data** from installations and consider requesting “**quarterly emission estimates**” from installations/operators

Insist on **full compliance**, impose **penalties** when deserved

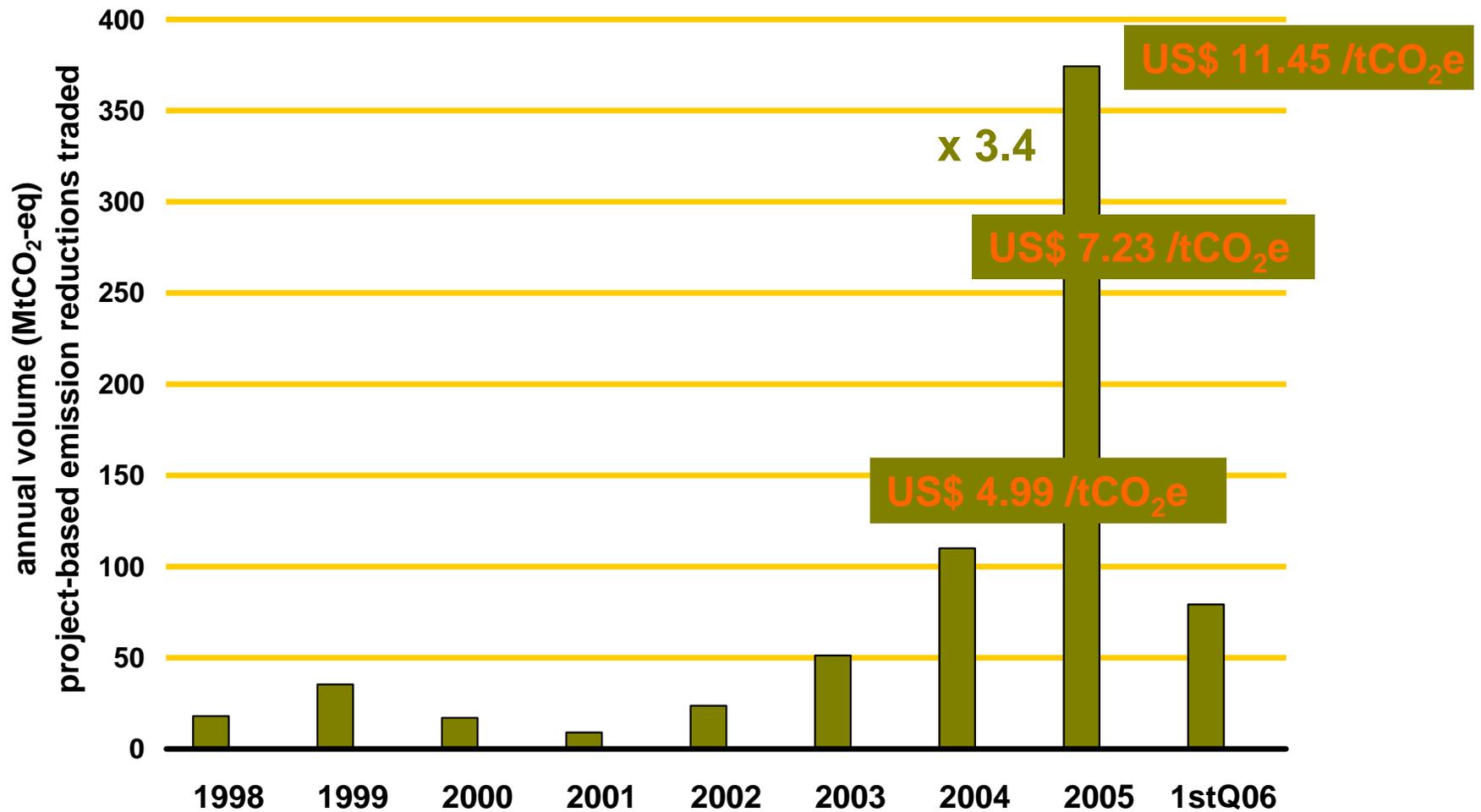
Encourage developing countries to continue momentum to mitigate climate change with full market access (supplementarity)

Strong caps and policy certainty help to mobilize new capital for sustainable development

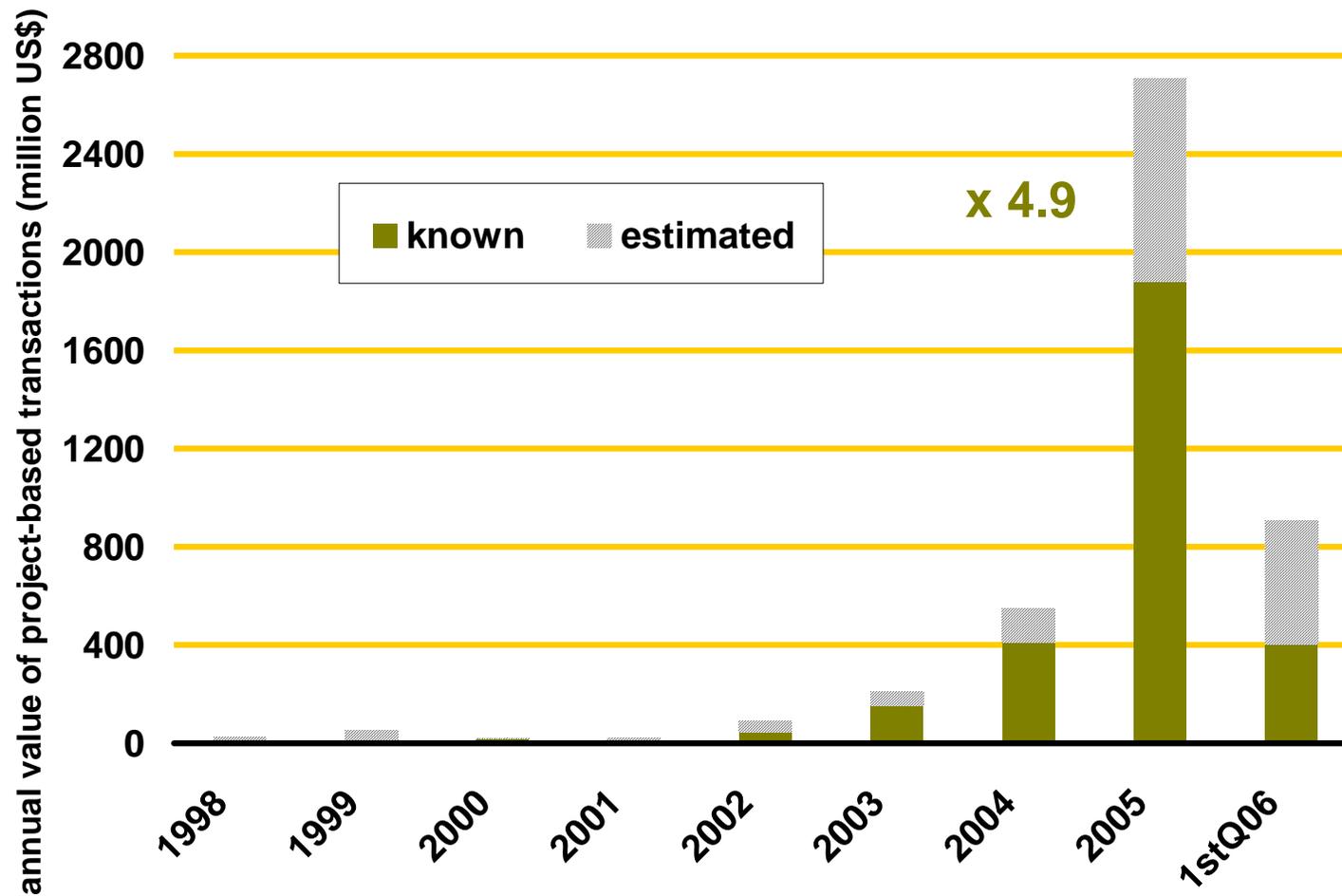


Project-based transactions

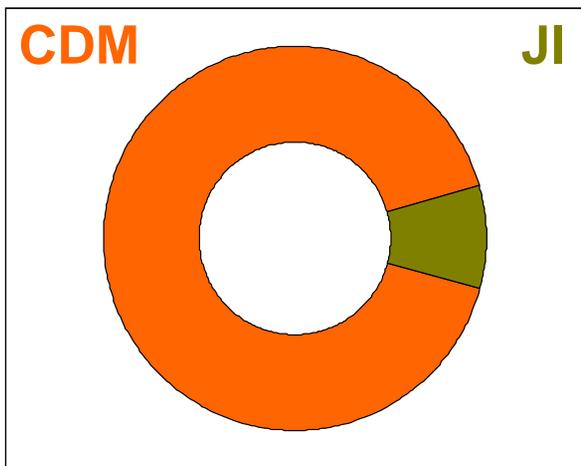
Project-based Credits: Sharp Increase (in Volumes traded and Prices)



Sharp Acceleration in Value Transacted

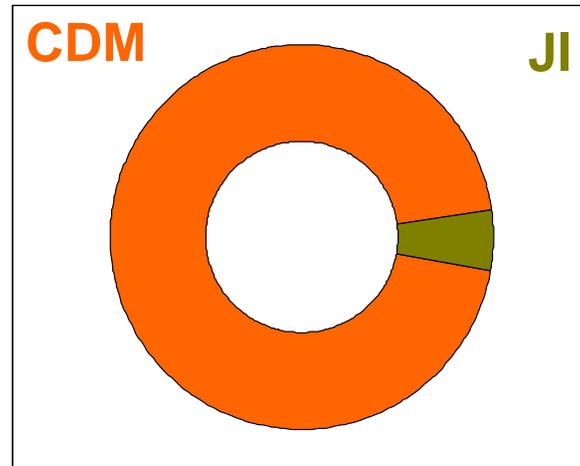


Market Differentiates between JI & CDM



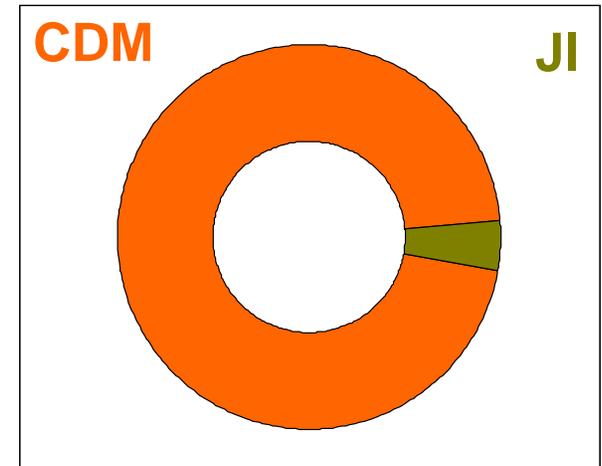
2004

CER	ERU
5.2	6.0
US\$/tCO ₂ e	US\$/tCO ₂ e



2005

CER	ERU
7.0	4.6
US\$/tCO ₂ e	US\$/tCO ₂ e



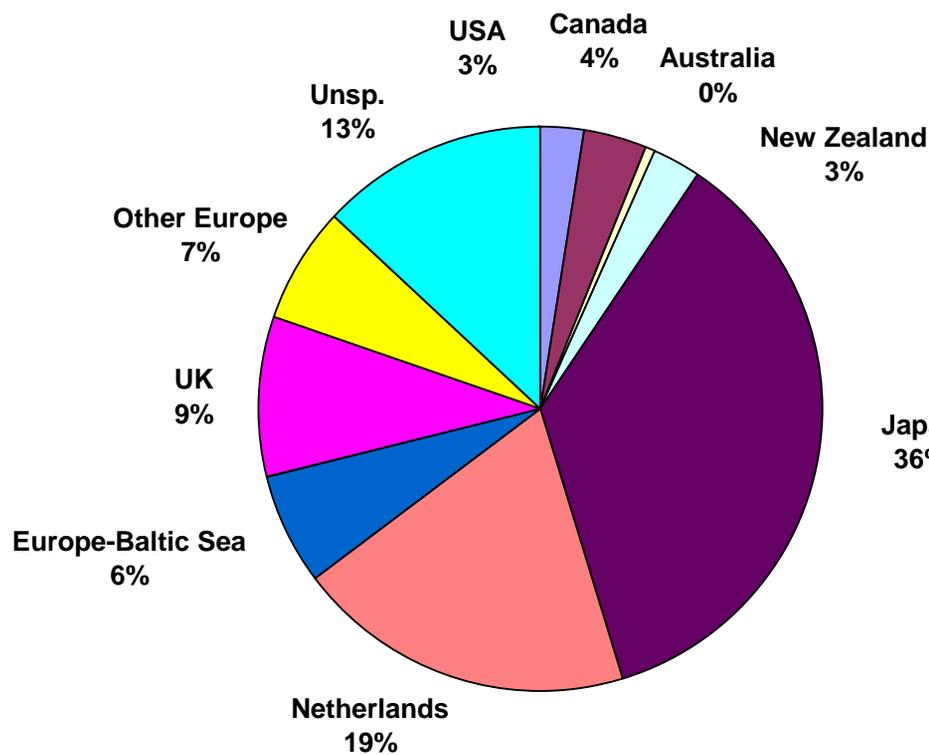
2006

CER	ERU
11.6	7.2
US\$/tCO ₂ e	US\$/tCO ₂ e

Market Share: Buyers Private firms (Japan and EU)

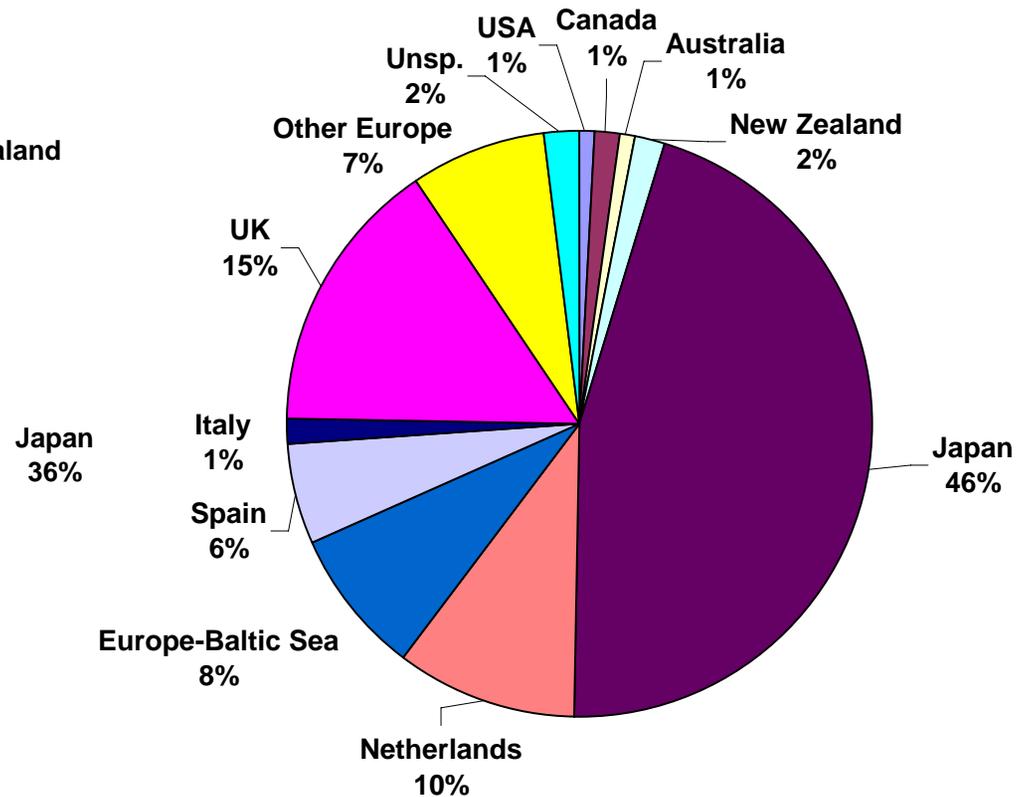


(share in volume)



Jan. 2004 to Dec. 2004

110.0 MtCO₂e



Jan. 2005 to Dec. 2005

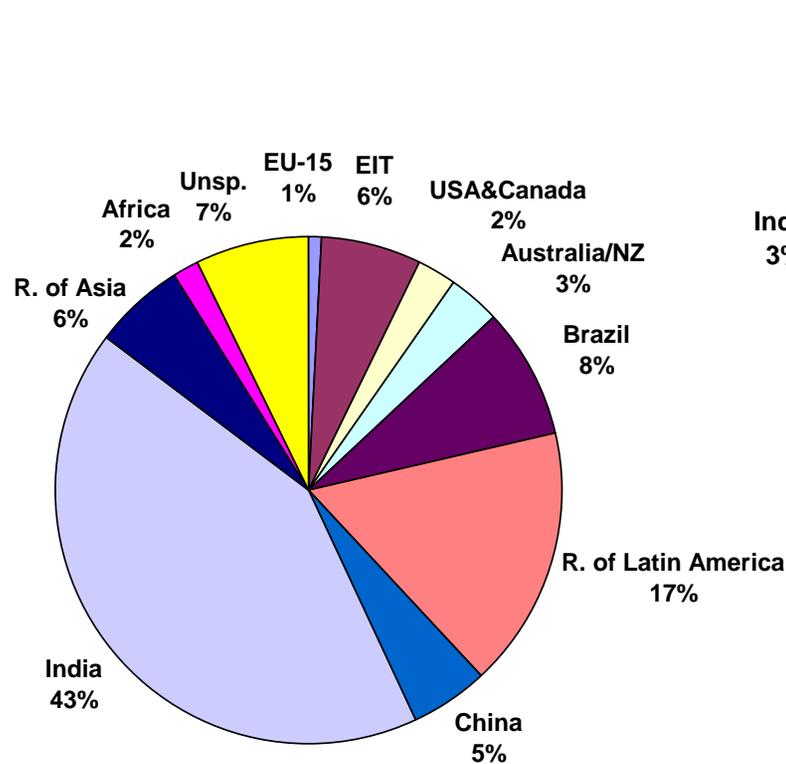
374.3 MtCO₂e

Market Share: Sellers

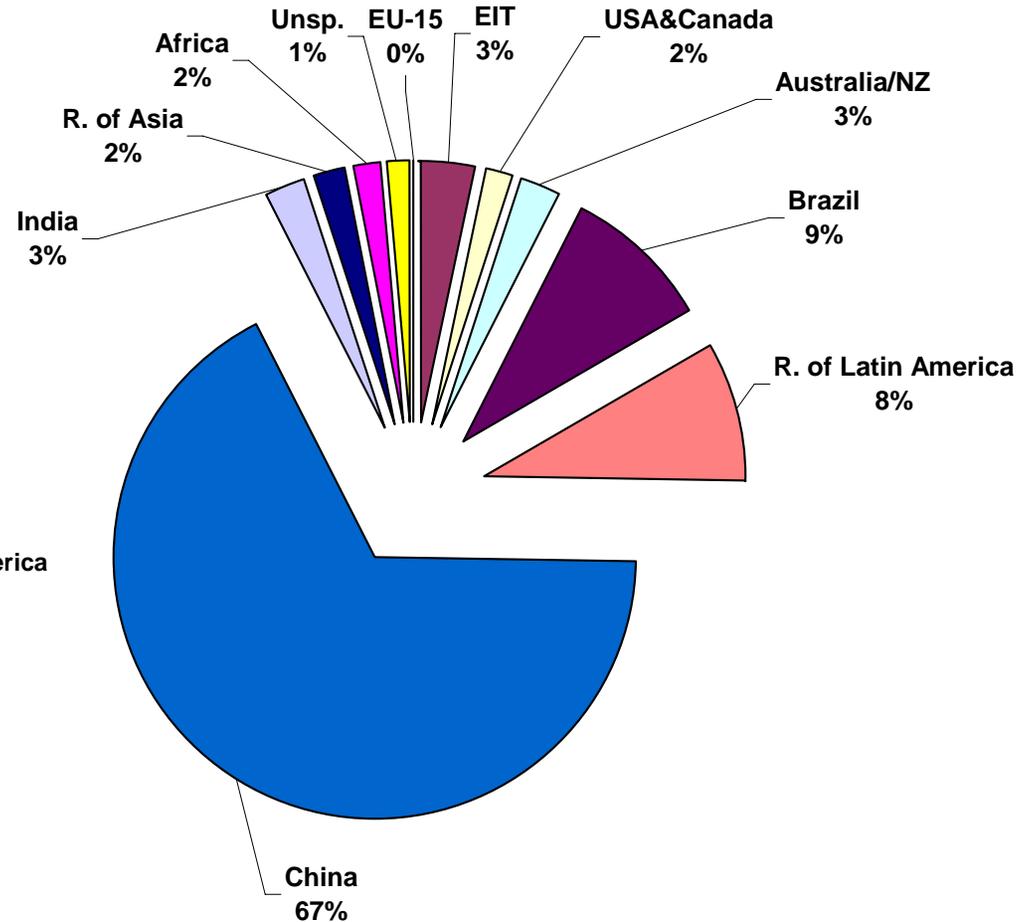
China-Brazil-India (BrIC)



(share in volume)



Jan. 2004 to Dec. 2004

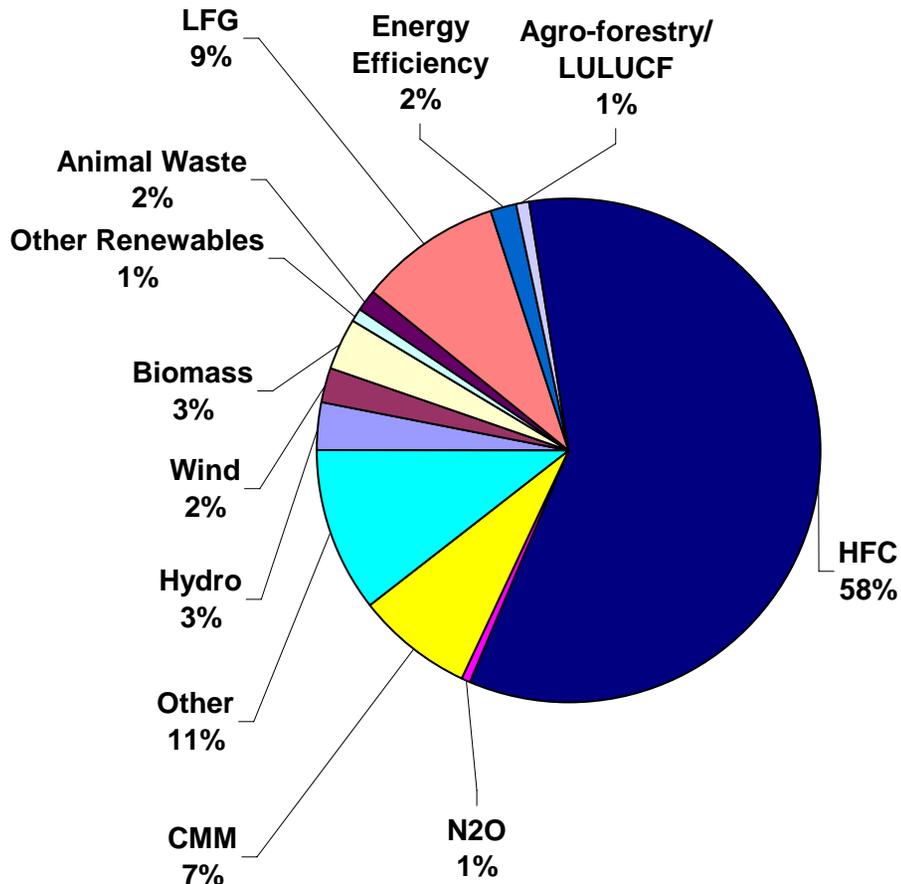


Jan. 2005 to Dec. 2005

Market Share across Asset Classes

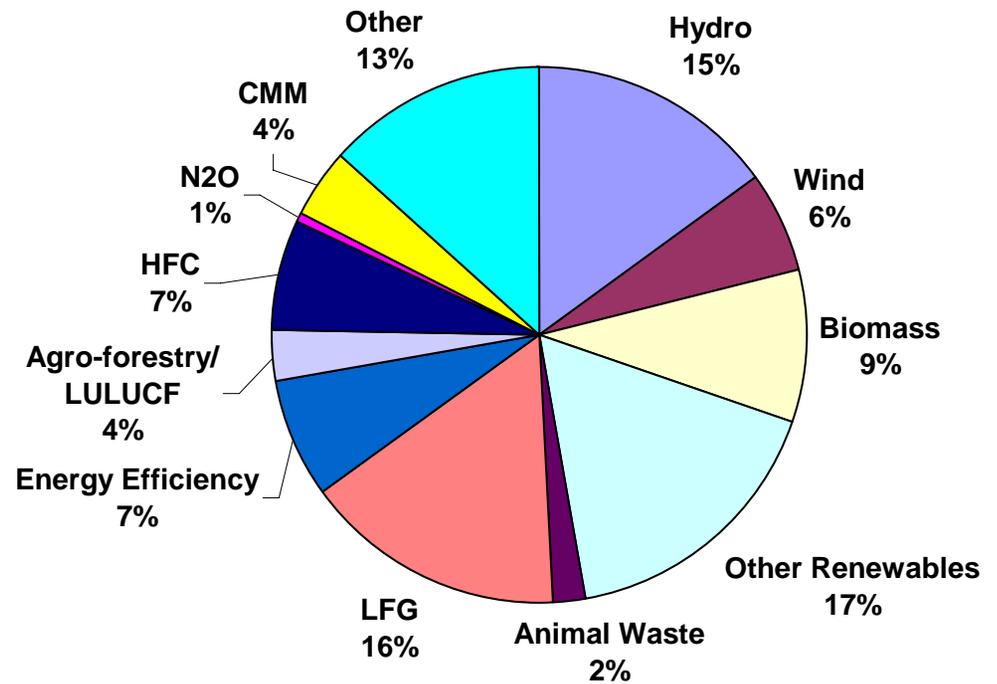


Share in volume



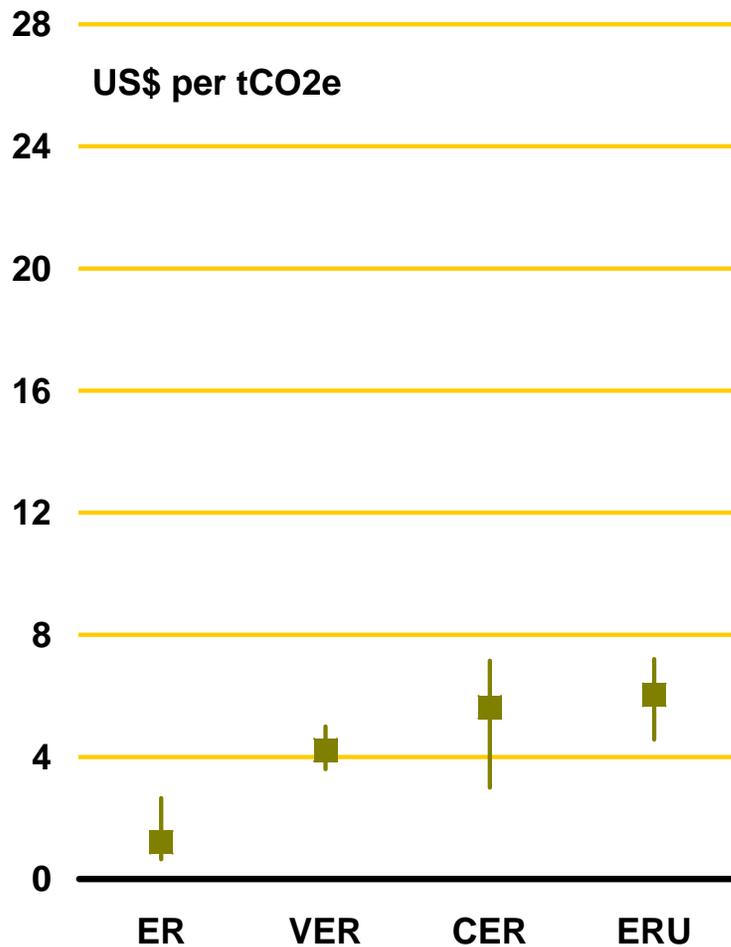
Jan. 2005 to Dec. 2005

Share in number of projects

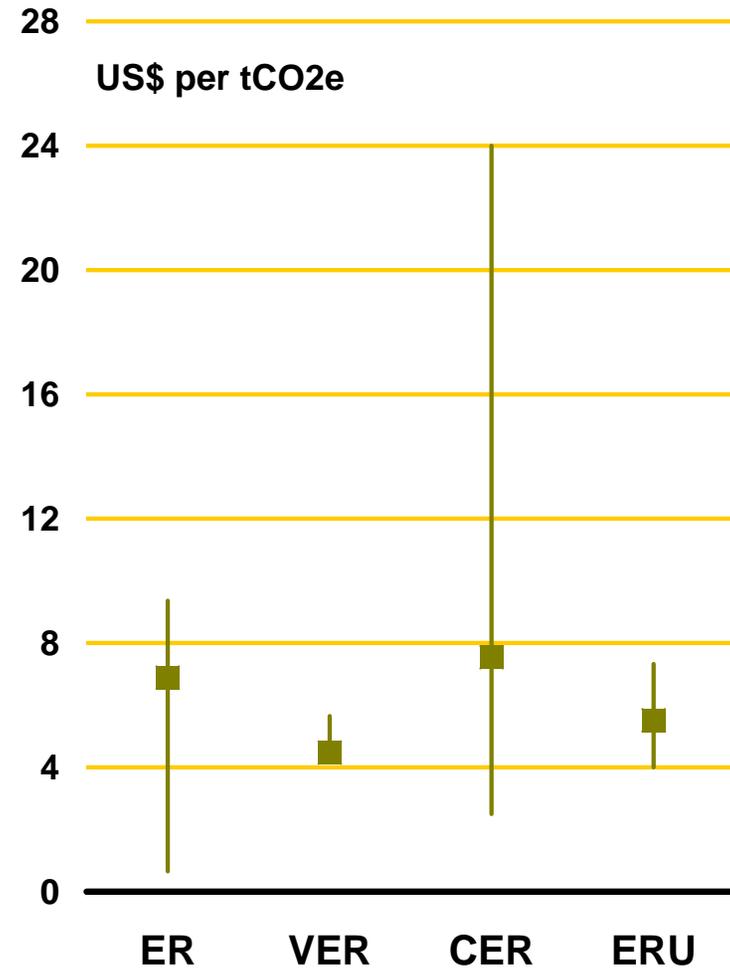


Jan. 2005 to Dec. 2005

Prices: Up across the Board



Jan. 04 – Mar. 05



Jan. 05 – Mar. 06

Managing Risk: Structuring CER Contracts



Primary Contracts

- Japan: **US\$6-10 /tCO₂e** for CERs with **no liquidated damages**
- EU Buyers: **fixed forward prices from US\$8-24 /tCO₂e** on liquidated damages/mark-to-market terms for firm delivery
- **Up to 80% of forward EUA-indexed price** on date of delivery/terms
- **Share in the upside: If index-based payment is above US\$15, then Buyer and Seller share upside**
- **Early vintage Premium: US\$13.23 /tCO₂e ('05-'07) vs US\$11.23 /tCO₂e ('08-'12)**

Secondary Contracts = Guaranteed Compliance Assets

- Secondary Sellers guaranteed delivery except ITL risk (bank guarantee or secure seller): priced in range of **US\$22.80 – 27.01 / tCO₂e** in 2006.
- Many Buyers hedged their risk by signing CER contracts after securing puts on secondary sales. Others signed back-to-back contracts

Other Features

- Buyers brought technology/upfront financing/equity to projects or sought operating agreements to manage delivery and performance risk
- Some Sellers reported that they did not sufficiently examine the **credit-worthiness of Buyers** with whom they had entered into contracts

Concluding observations



Strong linkage between energy, environmental and financial markets
(share prices, investments)

Environmental performance can be achieved through trading or through high quality projects

Solid residual demand for project-based credits from Kyoto Protocol & EU-ETS 2

Future Demand/Supply will depend on:

- **Phase II choices:** level of **cap**, efforts required from **other sectors**, **supplementarity caps**
- Role of **Canada**
- Possibility of **unlocking Unused AAUs (with link to project-based GIS scheme to provide environmental credibility)**
- **Development of U.S. markets, including RGGI, CCX etc.**
- **Longer-term policy signals – post-2012**



Thank you

Full report available at

www.carbonfinance.org

www.ieta.org