The World Bank

State and Trends of the Carbon Market *2007*

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Forolatinoamericano*del*carbono

Lima - September, 2007

Methodology

This study is based on the following:

- Analysis of the **World Bank's confidential project database**;
- **Interviews with market players** (natural buyers (Europe & Japan), fund managers, developers, sellers, DNAs, private equity funds, hedge funds, banks, traders & brokers), assisted by **Natsource**;
- A comprehensive **review** of published literature;
- Cross-reference with **IETA market sentiment survey**.

Project database includes:

- **More than 930 project-based transactions** (ERPAs signed)
- Completeness of information >90% in all fields except on exact terms and price of transaction >60%.

Aggregate data on allowance markets:

- From **major exchanges and OTC sources.**

Global Carbon Market Triples

Overall **US$ 30 billion (‘06)** > US$ 11 billion (’05)

EUAs market **US$ 24.4 billion (‘06)** > US$ 7.9 billion (’05)

Project Market doubles

US$ 4.8 billion (‘06) > US$ 2.4 billion (‘05)

CDM accounts for 88% of this value

Secondary market emerges

Portfolios of guaranteed compliance assets

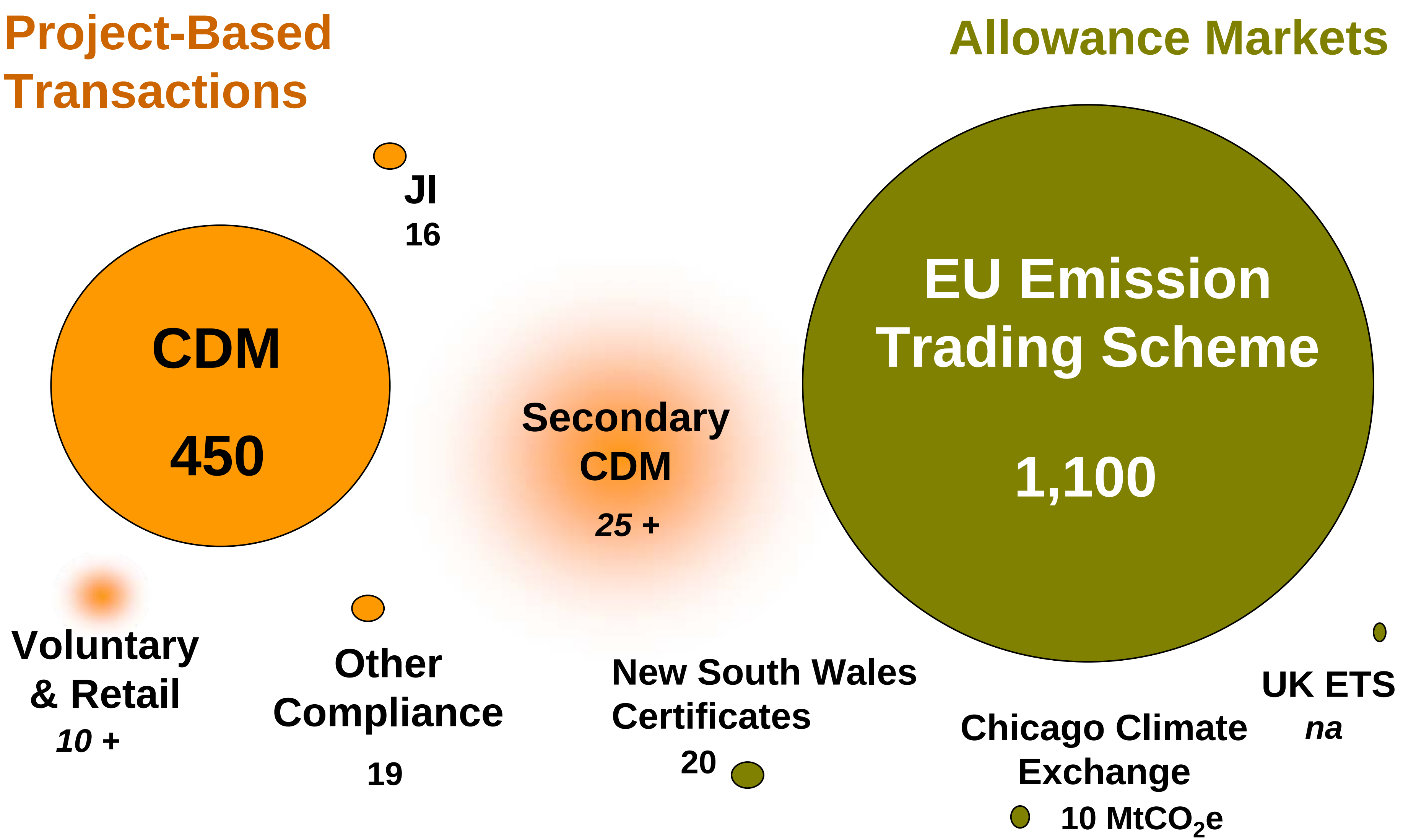
US$ 0.44 billion + (’06) through intermediaries

Voluntary Market expands **US$ 0.1 billion + (’06)** confirmed

Price Signal to Market Drives Capital Allocation

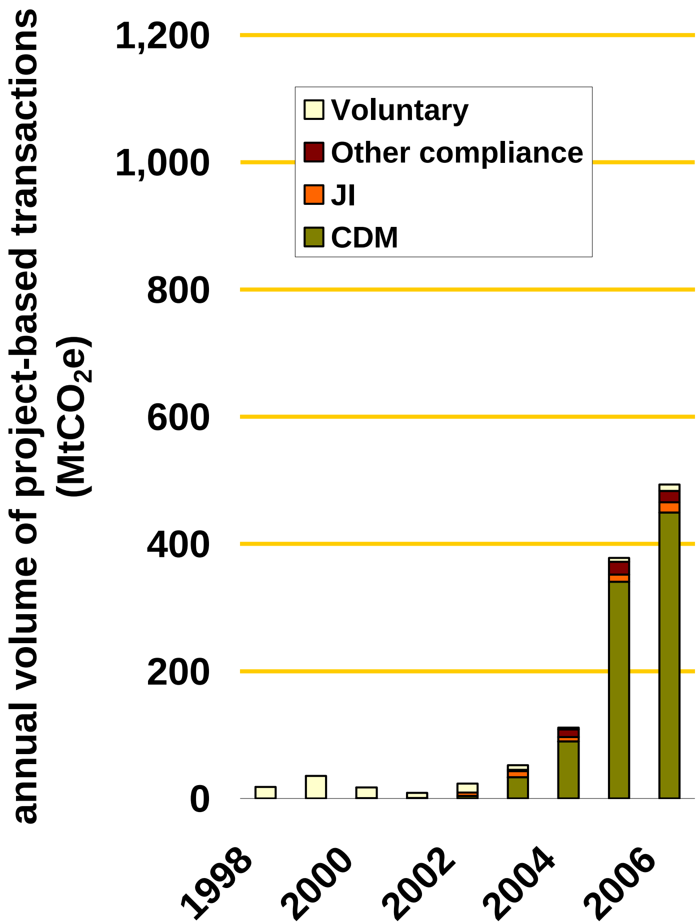
Volumes transacted in 2006

(in $MtCO_2e$)

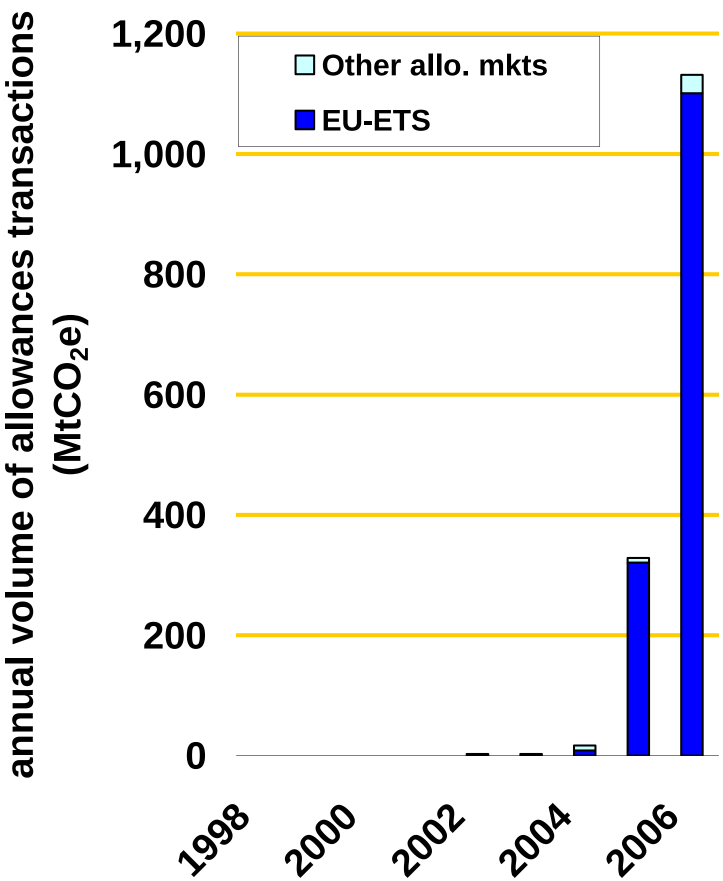


Evolution of largest C mkts.

Project-based transactions



Allowances transactions



Markets for Allowances

Disconnected EU ETS markets

PhI is <u>long</u> pushing <u>EUA prices < € 2</u>

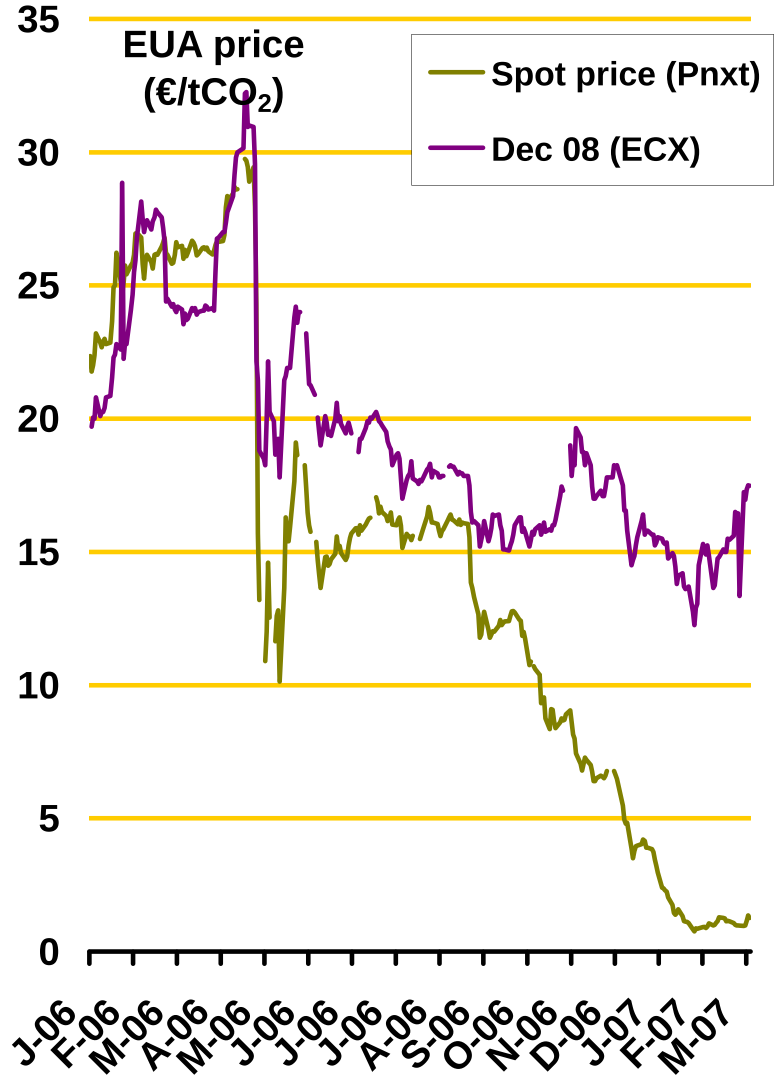
- Overall generous allocation, weather, energy price & no EUA banking
- Utilities have covered Ph I position
  - CERs to be banked to Ph II

PhII expected to be <u>short, > € 12</u>

EU: *"If more allowances were to be issued by Member States than the likely quantity of actual emissions in 2008-12 meeting the Kyoto commitments would be severely compromised and little or no environmental benefit would be provided."* *COM(2006) 725*

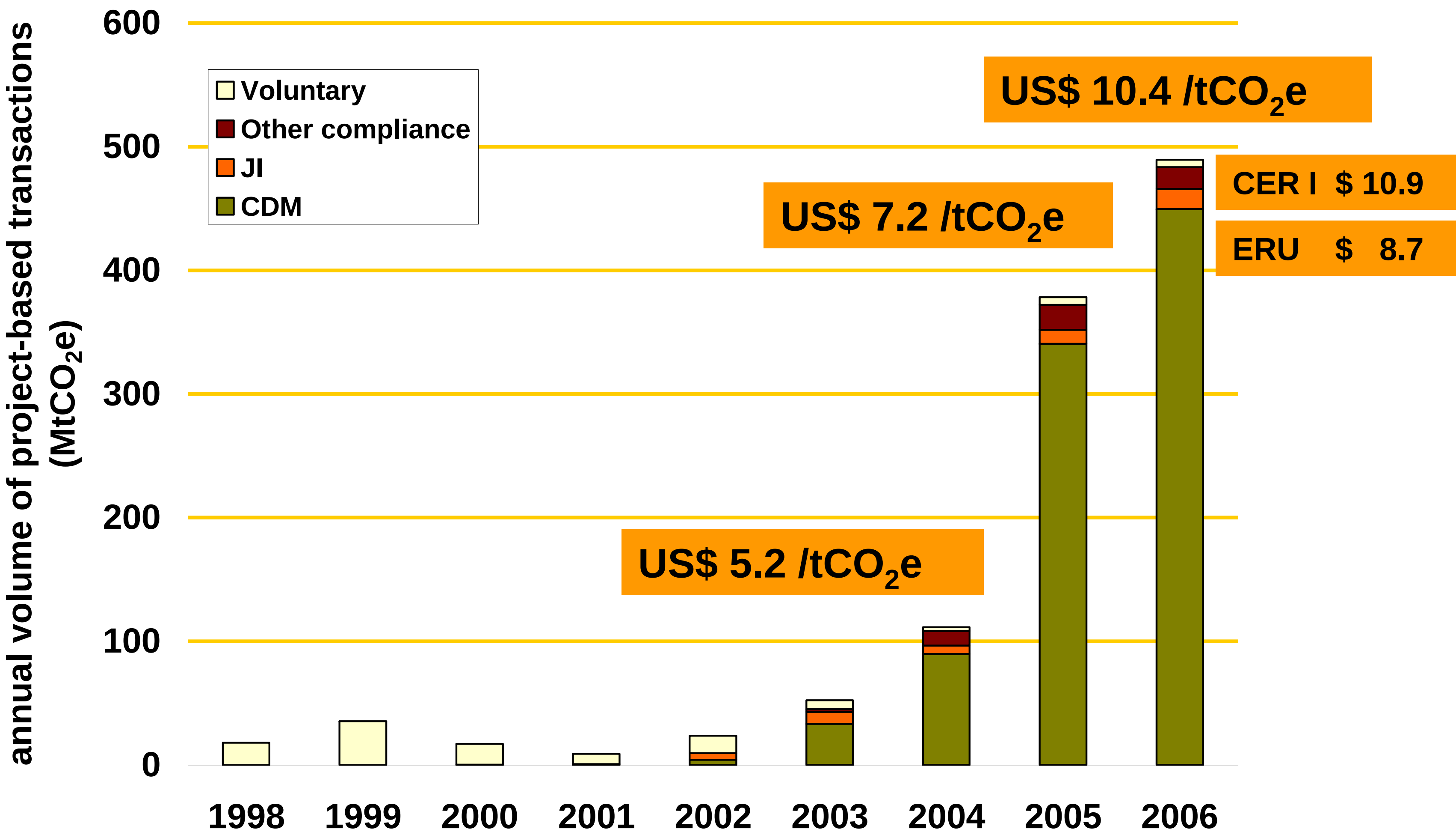
- Market prices reflect analysts' **shortfall consensus:**
  900-1,500 $MtCO_2e$
  (level of effort required = 8-10 %)

- EU Directive allows EUAs banking

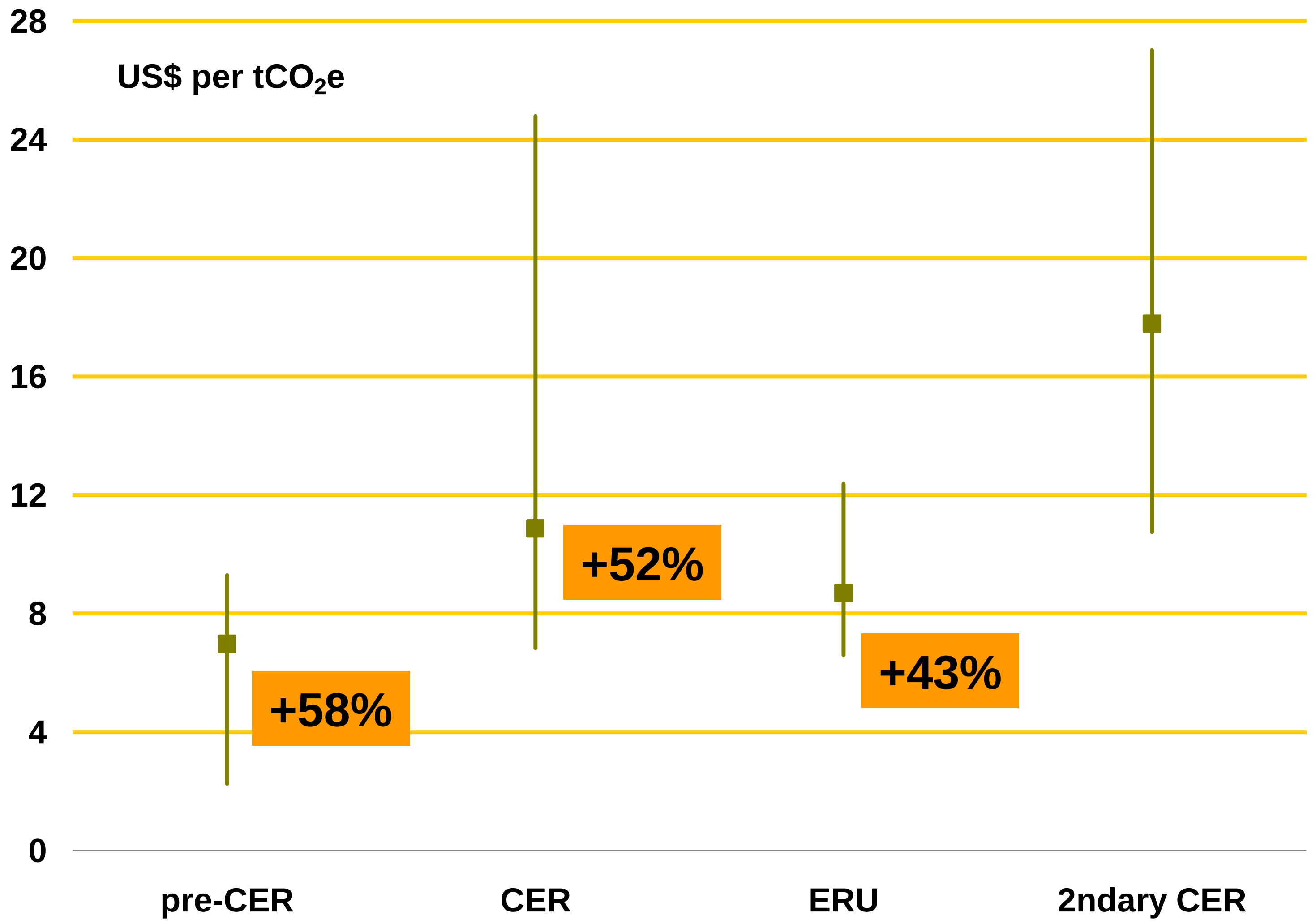


Project-based transactions

Project-based Credits:
Volumes and prices up

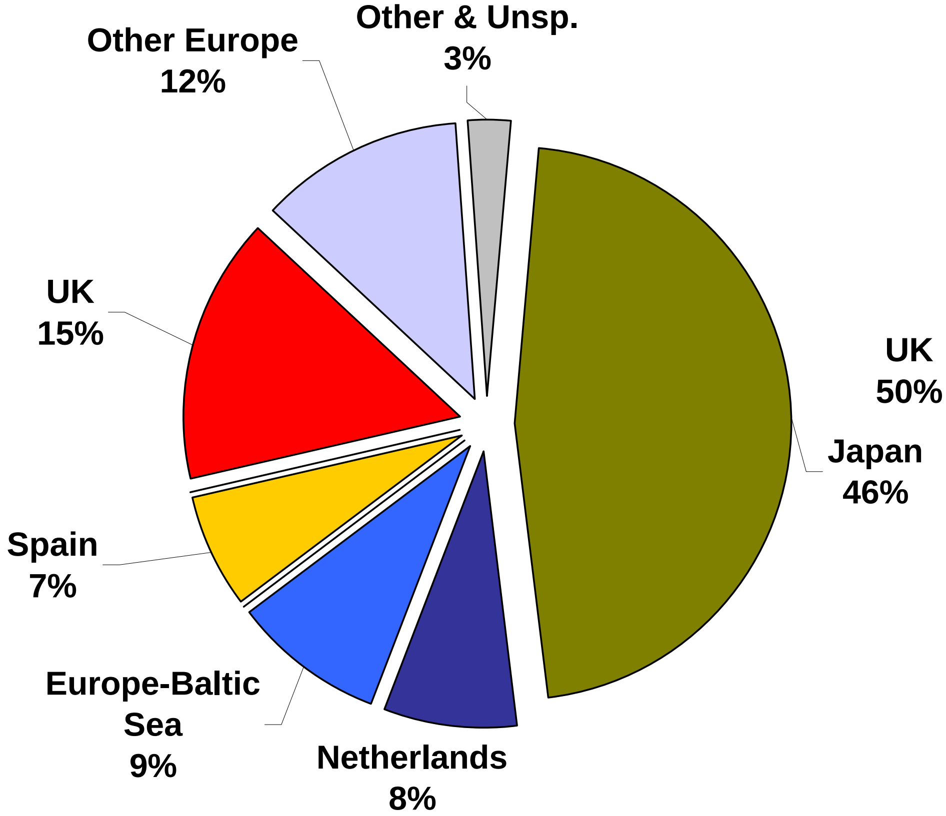


Prices up across segments

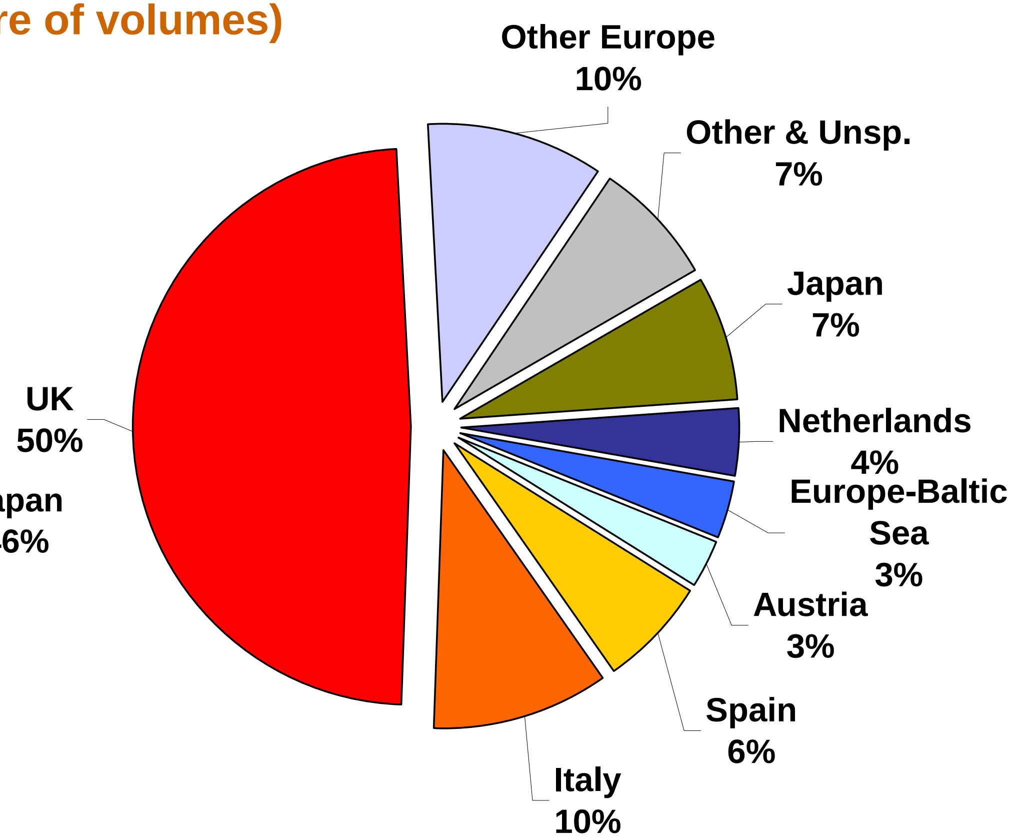


CDM&JI Buyers
EU Private Sector 75% of demand

(share of volumes)



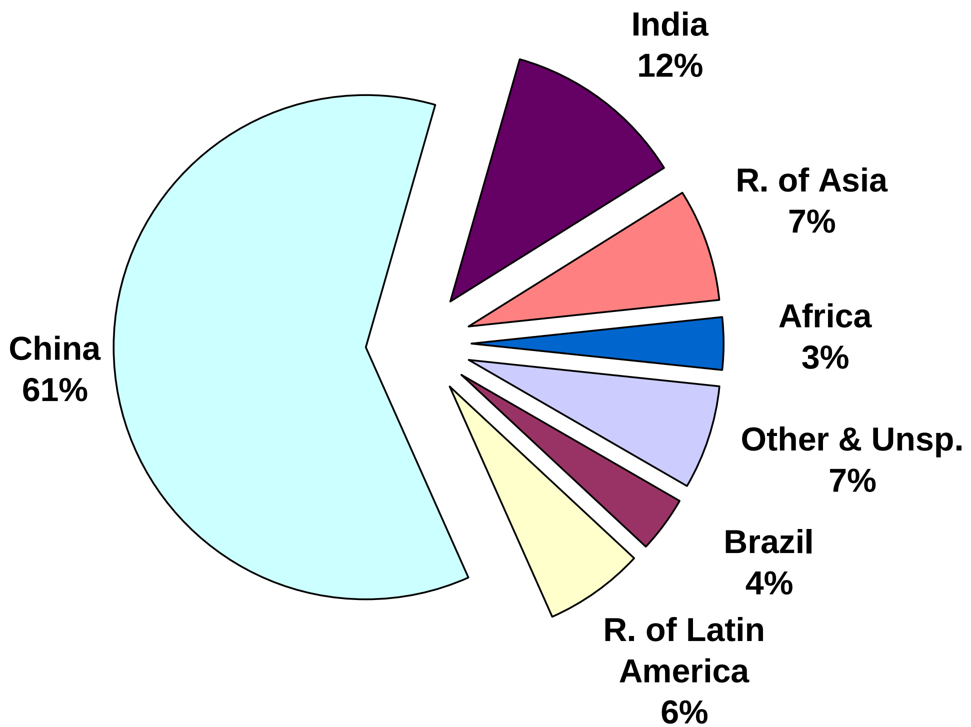
Jan. 2005 to Dec. 2005

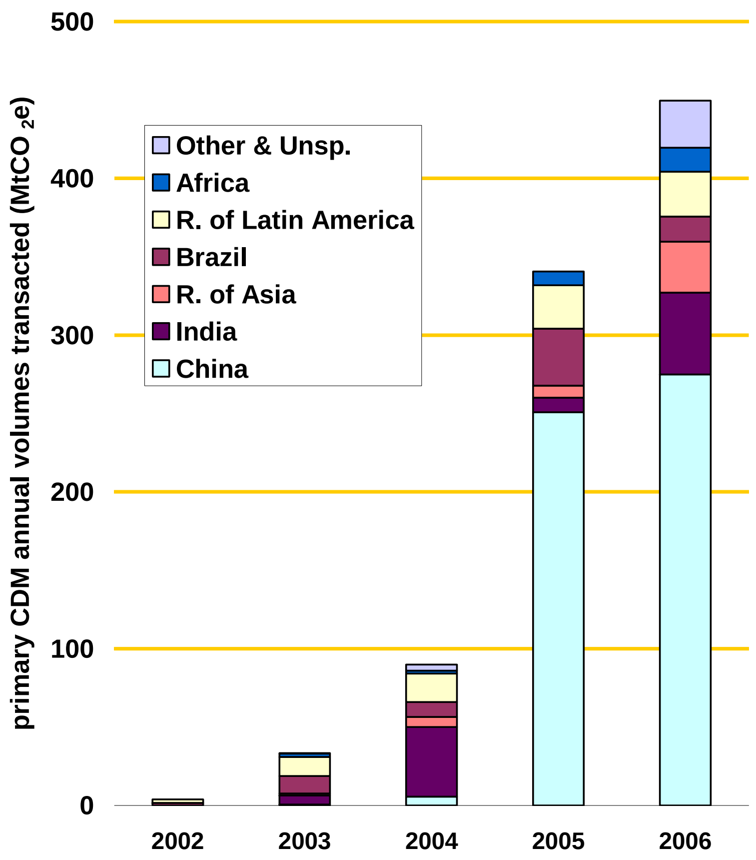


Jan. 2006 to Dec. 2006

CDM Sellers
China leads supply

(share of volumes)





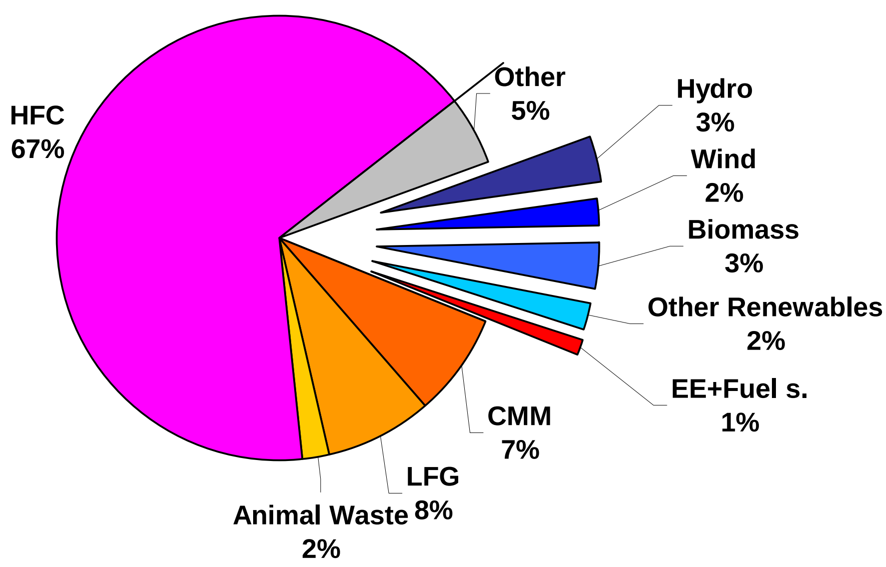
Jan. 2006 to Dec. 2006

CDM Asset classes

Share of Clean Energy Rises

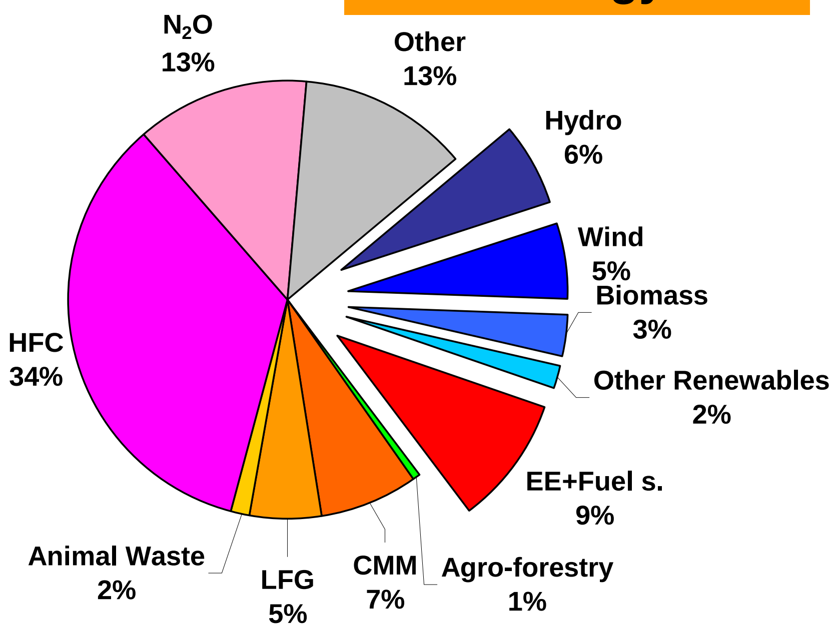
(share of volumes)

Clean energy: 11%



Jan. 2005 to Dec. 2005

Clean energy: 25%



Jan. 2006 to Dec. 2006

CDM & Clean Energy

Investment leverage 2002-2006

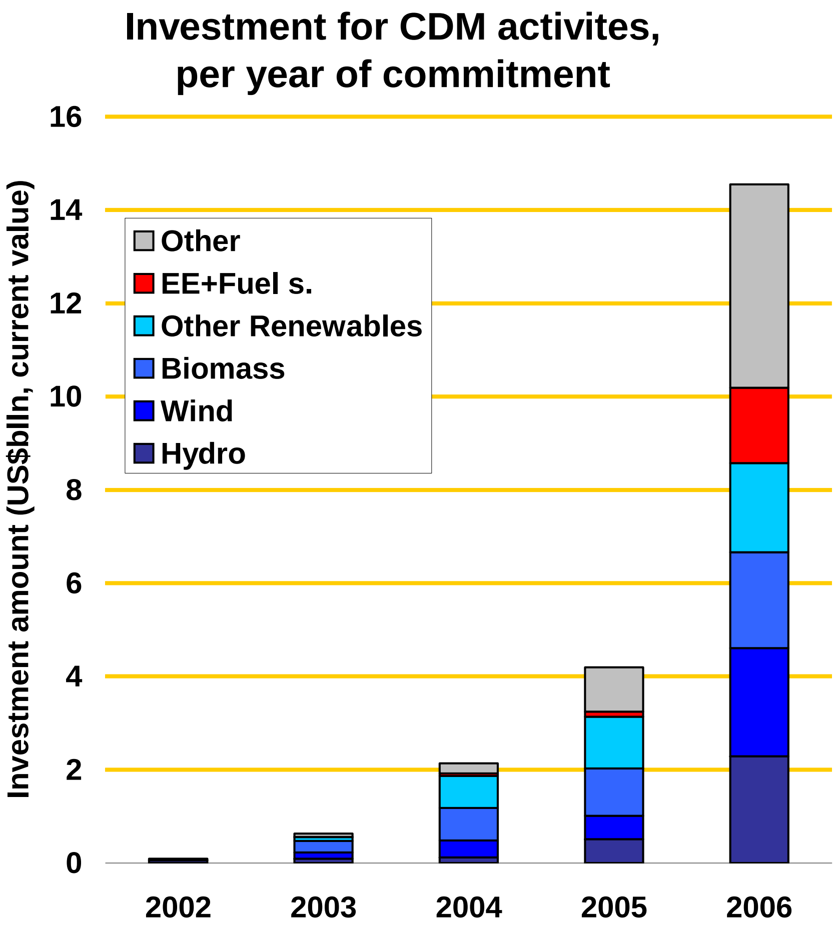
Cumulative CDM deals = US$ 7.8 billion

US$ ~2.7 billion for clean energy (current prices)

$1 carbon =~$8 invested for clean energy

US$ 16 billion leveraged for clean energy in developing countries since 2002

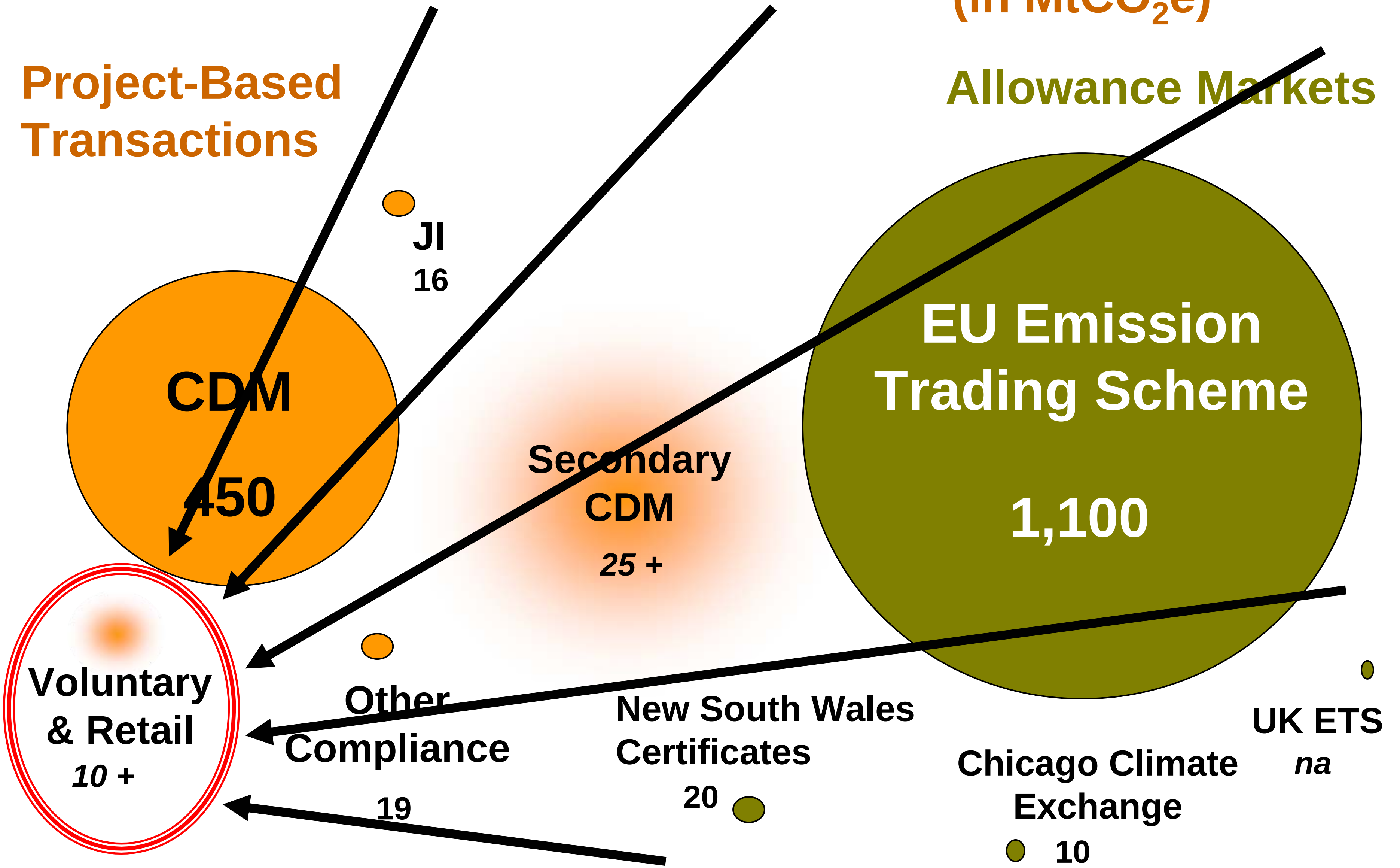
US$100 billion invested for clean tech globally in 2006



Voluntary Carbon Compensation

Volumes transacted in 2006

(in $MtCO_2e$)



A fragmented, but growing mkt

Who's buying?

Entities not under compliance (Europe, w/ recent push in the US)

- **companies** C-neutral for PR or "capacity building"
- **good & service providers**: C-free shipping, event organizers, *etc*.
- **individuals**: commuting, travels, housing, *etc*.
- **intermediaries** (retailers).

Who's selling?

Africa, but also **local offsets** in North America.

Steady growth in the next few years?

From 10+ $MtCO_2e$ in 2006 to 400 $MtCO_2e$ by '10 (60% in the US)

Smaller w/ strong SD attributes

Why selling?

Small projects, methodology issues, outside Kyoto

Asset classes

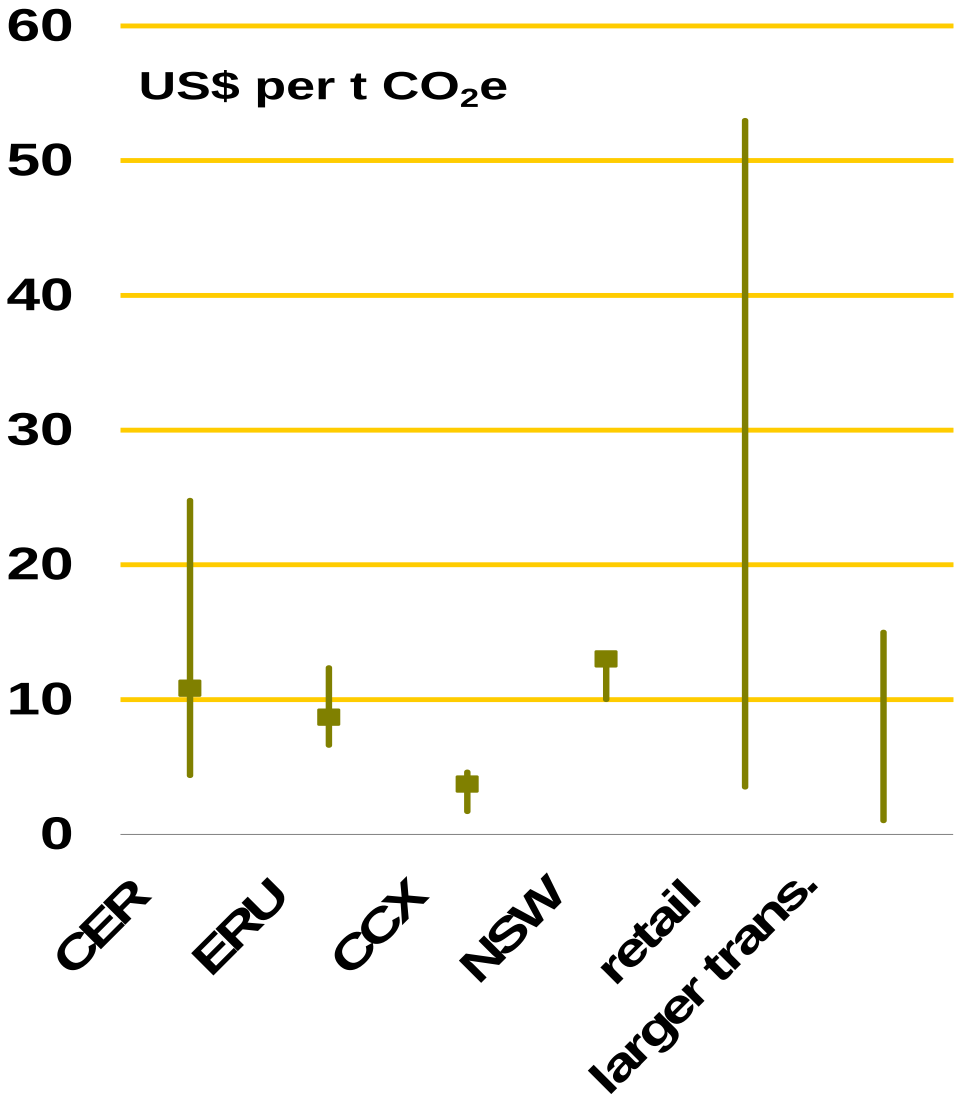
Typically small **forestry** projects, w/ **SD & community benefits**

Now, more on Energy Efficiency and Renewable Energies

Examples

- Kuyasa low-cost urban housing energy upgrade (7k tCO2e/yr)
- Avoided deforestation in Mozambique (100 tCO2e/yr)
- Ecuadorian Rain Forest Restoration (650 tCO2e/yr)
- A/R activities at Scolel Te (Mexico) (30 tCO2e/yr)
- Wind farm in China and Turkey (>50k tCO2e/yr each)

Prices: sustainability commands premium



Looking for a standard

Projects selection criteria:

Credible tCO2e w/ SD and community benefits > prices

More than 15 standards addressing diversely:

Additionality, Verification, Registration, Permanence

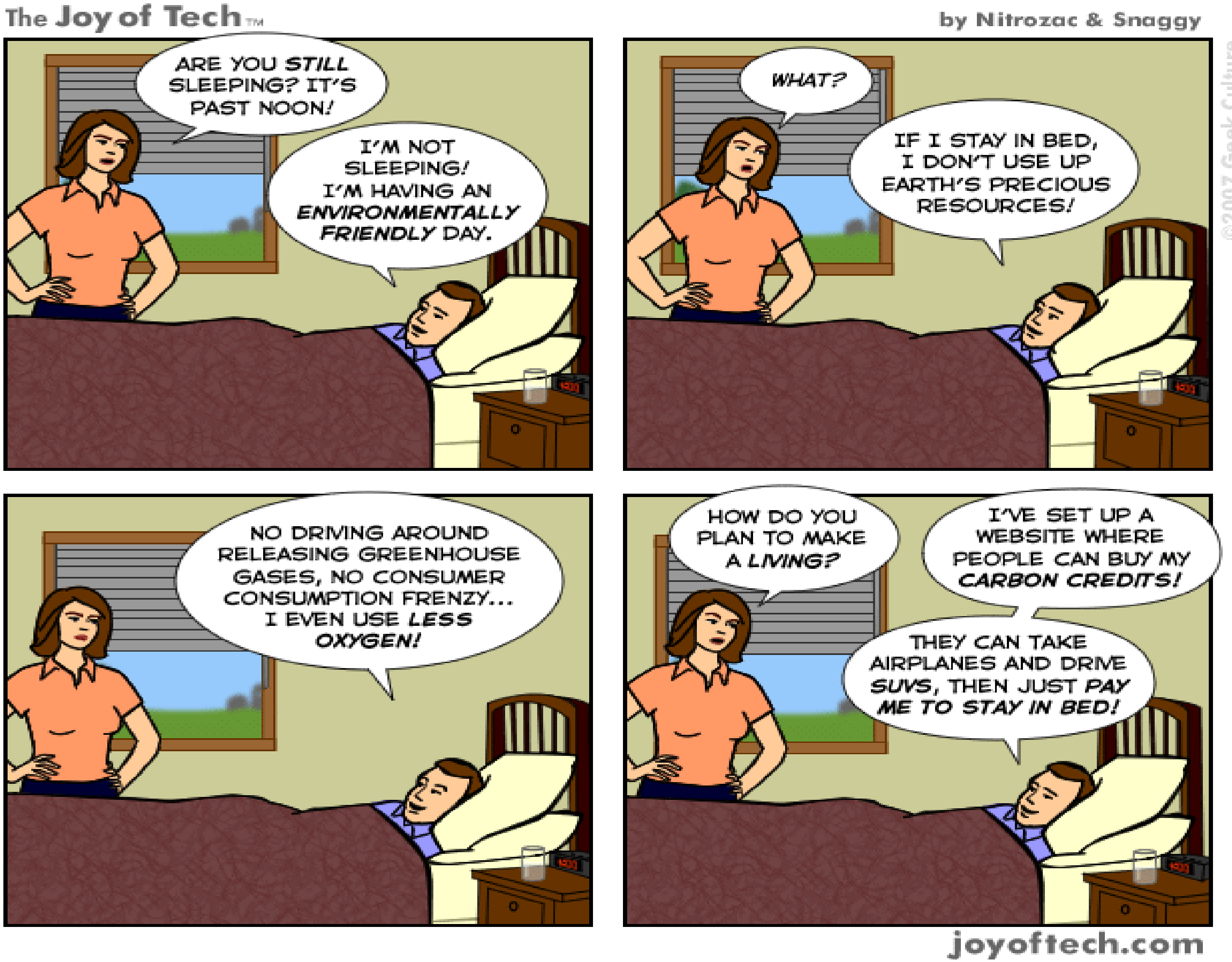
Credible **compliance units received strong interest**

CDM/JI, CCX, NSW

New standards being developed, **capitalizing on CDM**

Standard	Gold Standard	VCS	VER+
Sponsors	WWF, SSN, Helio International	the Climate Group, IETA, World Economic Forum	3C and Tuev Sued
Status	2003 for CDM and JI May 2006 for Voluntary	final by Dec 07	active
Offset types	EE (demand side) & RE w/ **community benefits**	all project types	all project types
Website	cdmgoldstandard.org	v-c-s.org	tuev-sued.de

Without standard…



Outlook

Market balance 2008-2012

2008-12 demand for Kyoto mechanisms (Analysts' expectations)

Demand from EU ETS = 1,140 $MtCO_2e$ (900 -1,400 $MtCO_2e$)

Based on varying assumptions of growth adjusted for improvement in carbon intensity

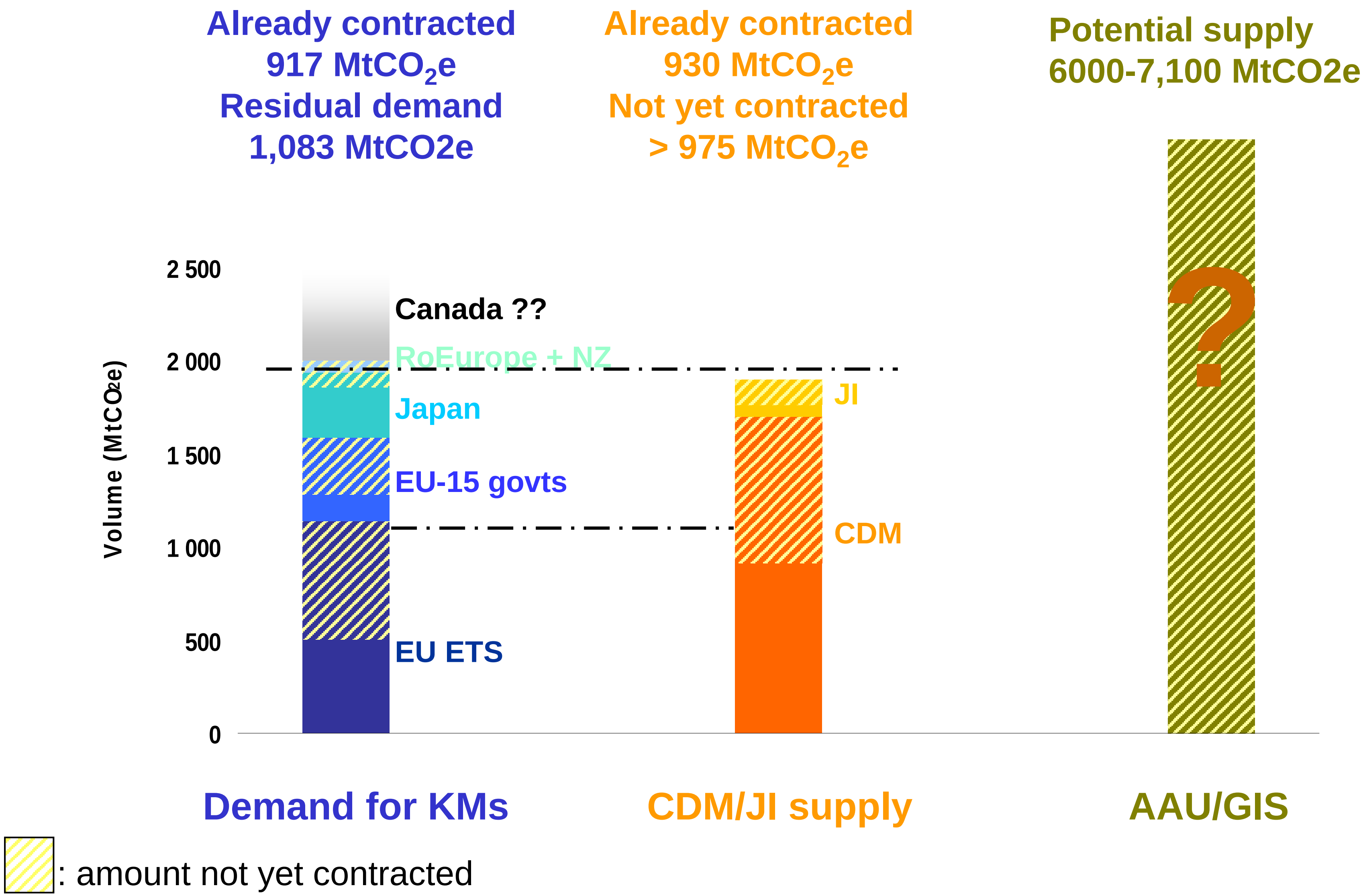
Expected demand from EU Governments: 450 $MtCO_2e$
Expected demand from Japan: 100-500 $MtCO_2e$ (avg: 350$MtCO_2e$)
Expected demand from Ro Europe and NZ: 200 $MtCO_2e$

Based on varying assumptions of Parties about performance of additional (and existing) policies and measures

Will sufficient supply be stimulated, contracted and delivered?

- **CDM/JI: How many reductions will they deliver** on time? At what price?
- AAU/GIS: How many, when and at what price? **Some host countries have expressed their interest in setting GIS** (Ukraine, Latvia)

Expected Kyoto Balance



Beyond 2012:
A bridge to a safe climate future ?

- Developing countries and EITs have strongly responded to EU and Japan demand.
- Markets to manage GHG emissions have demonstrated their ability to source ERs.
- Experience should encourage countries considering ambitious targets to "avoid dangerous climate change".
- This requires efforts in all sectors, including those not easily reached by the carbon market.

Without ambitious targets…,

“the development and deployment of existing and new clean technologies would stall, and the evolution of a dynamic and liquid global market would be severely undermined”.

EU Commission, October 2006
COM(2006) 725

Thank you

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Full report available at

www.carbonfinance.org