

Carbon Market Overview



Carbon Finance Training, Uganda, March 27, 2009
PCIA 2009 forum



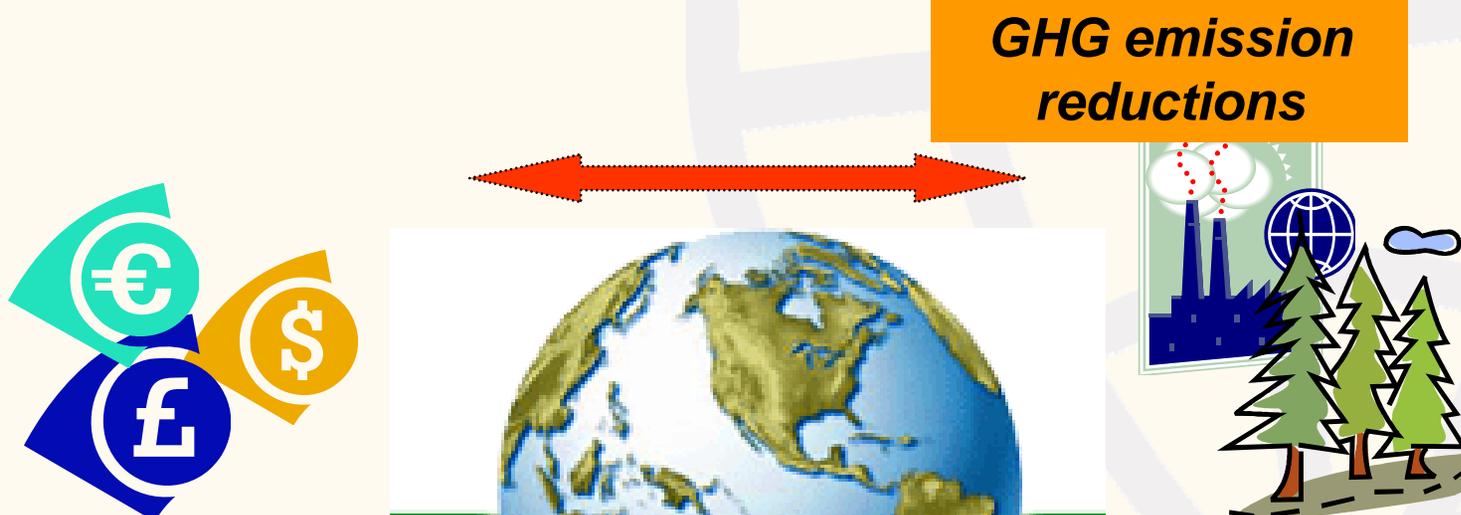
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I. Introduction to carbon market

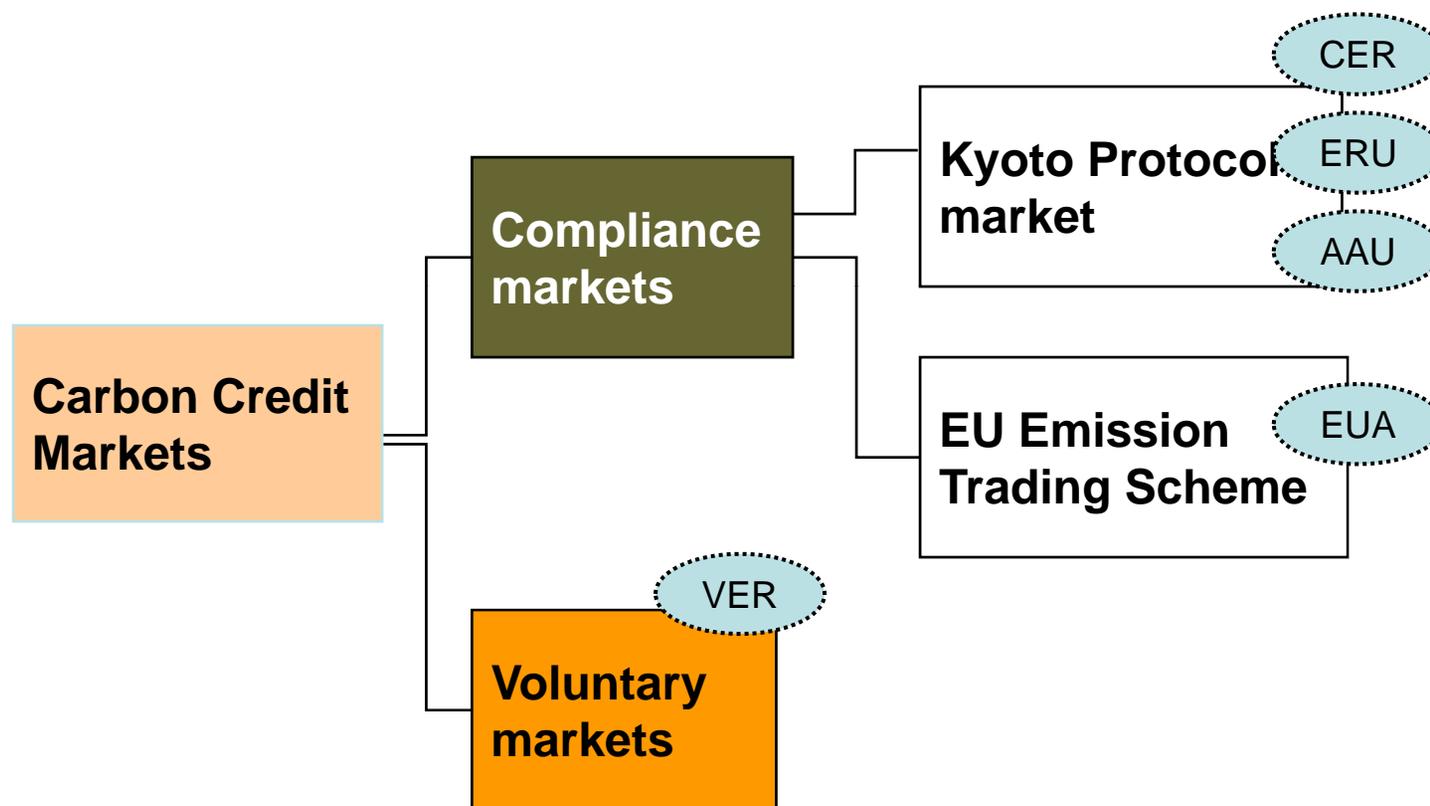
Basis for Carbon Market

- Climate Change is real and mostly caused by GHG from human activities leading to seriously adverse impacts on the world economy and environment
- Concerns over Climate Change have led to the Kyoto Protocol (1997), which mandates GHG emission reductions by industrialized countries
- Carbon Market is a trading system where countries and/or companies trade units of GHG emission reductions in order to meet targets under Kyoto Protocol and other such mechanisms.



II. Segments of the carbon market

Components of Carbon Market



Carbon “currencies”

- CER Certified Emission Reductions (CDM)
- ERU Emission Reduction Units (JI)
- AAU Assigned Amount Units (emission trading)
- EUA European CO2 Allowance (EU internal trading)
- VER Verified Emission Reduction (voluntary market)

II. Segments of the carbon market

Kyoto Protocol: The main market driver

- Announced in 1997, but came into force in 2005.
- included legally binding emission reduction targets for Annex-I countries (38 industrialized countries & economies in transition)
 - Its goal is to reduce GHG emissions by **5.2% below 1990** level during the commitment period 2008-12
- Targets would be achieved by:
 - Domestic Action; and
 - International transactions through Flexible Mechanisms
 - **Clean Development Mechanism**
 - **Joint Implementation**
 - **International Emissions Trading**

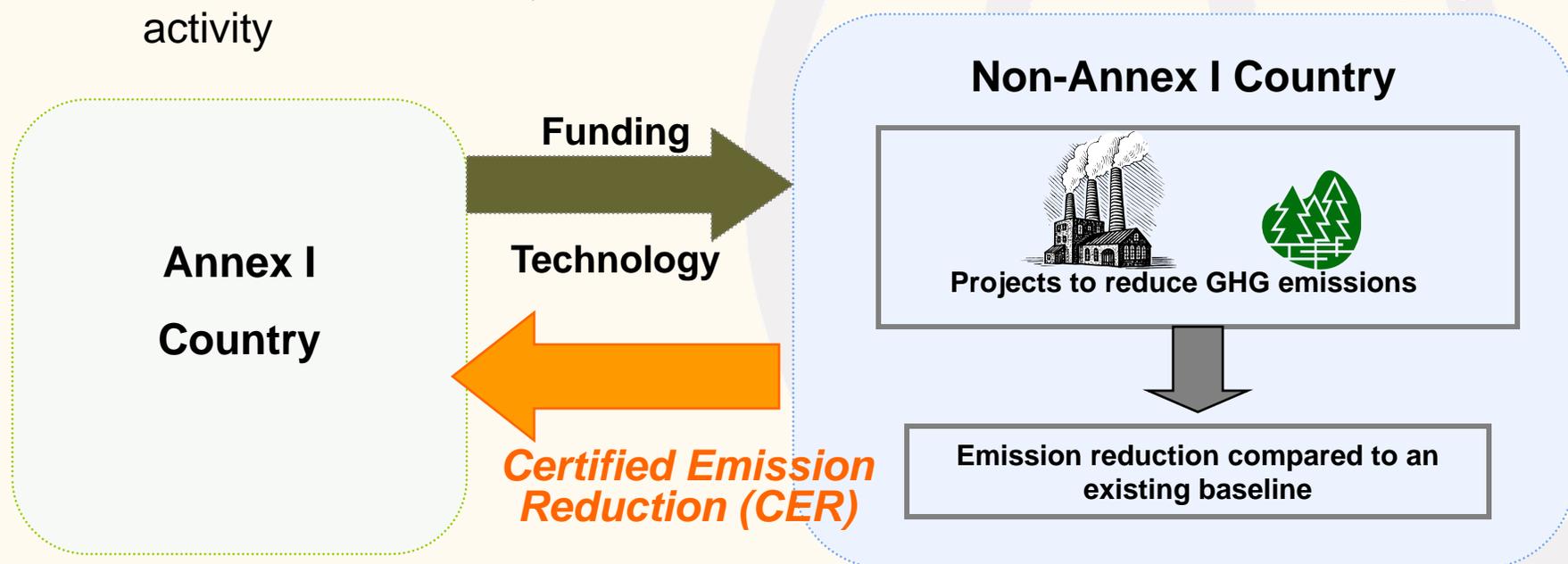
II. Segments of the carbon market

Clean Development Mechanism

CDM allows industrialized countries to purchase certified emission reduction (CER) from projects installed in developing countries and use the credits against the Kyoto targets

Certified Emission Reductions (CERs) must:

- Create **real, measurable, and long-term** benefits related to the mitigation of CC
- Be **additional** to any that would occur in the *absence* of the CDM project activity



II. Segments of the carbon market

Voluntary Market

Buyers:

- **Who's buying?** : Private businesses, NGOs, Governments, individuals,...
- **What motivates buyers to engage in the voluntary carbon Market?:**
 - Fulfilling voluntary corporate GHG reduction targets
 - Preparing for potential regulatory requirements
 - Enhancing brands and differentiating products
 - Attracting investors

Sellers:

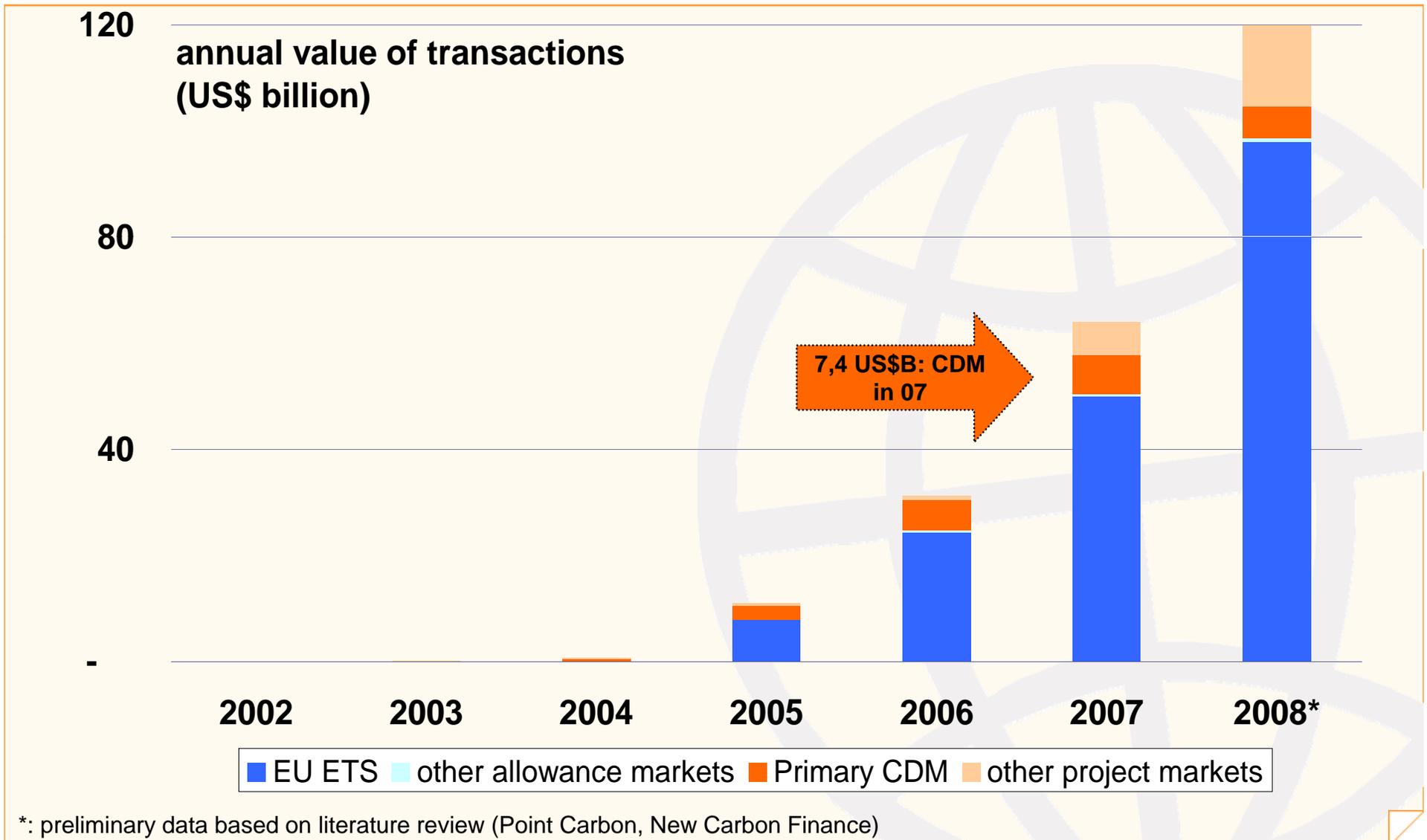
CDM not possible for formal reasons not related to quality, e.g.:

- Host country has not ratified the Kyoto Protocol
- Host country does not have operating DNA
- Host country has introduced restrictive formal criteria
- No applicable approved CDM methodology available
- Cost savings for small-scale projects

III. Trends of the Carbon Market



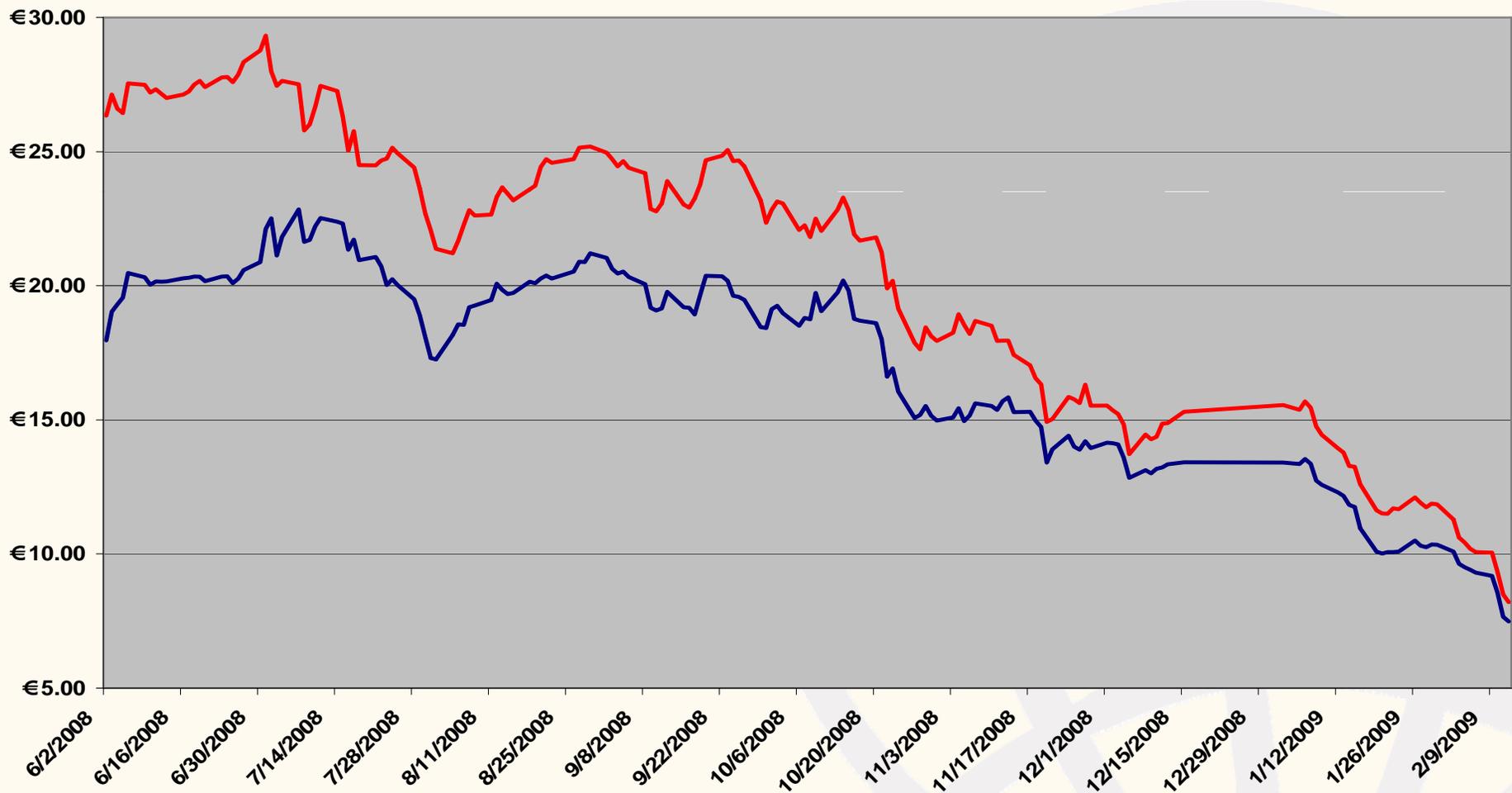
The Evolution of the global Market



III. Trends of the Carbon Market



Compliance Market: Carbon price falls as economic crisis deepens



Spot EUA and sCER (€/per tCO₂e)

— Price sCERs — Price EUAs

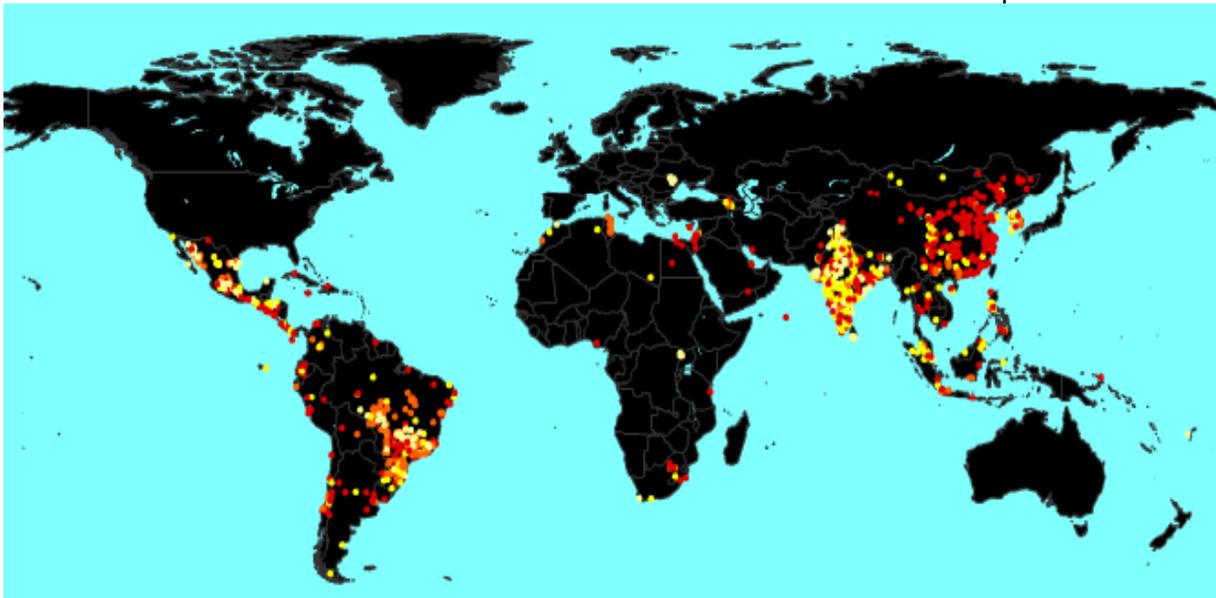
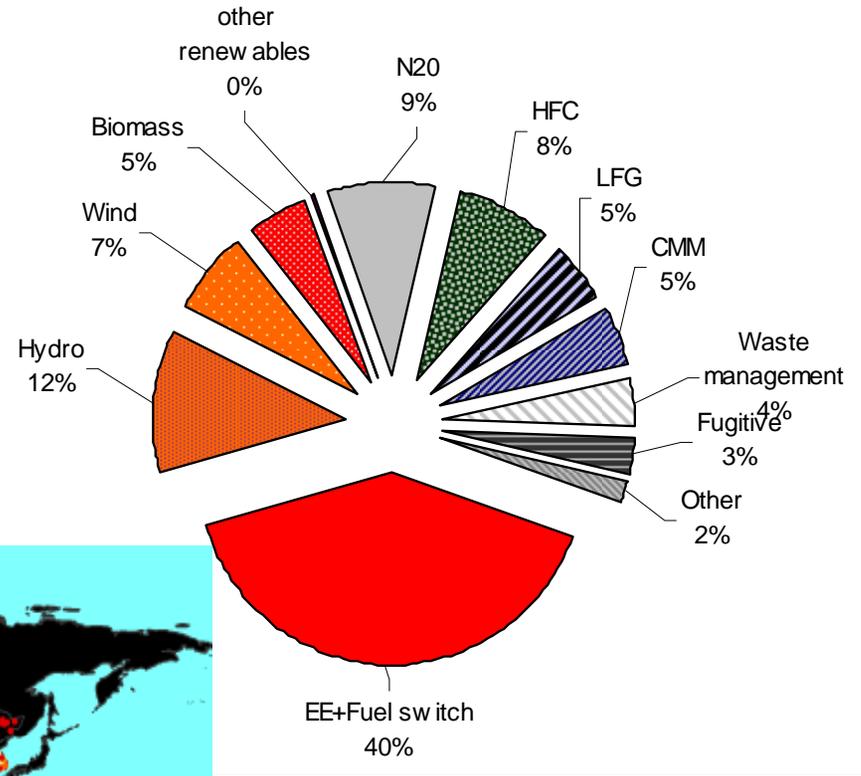
Sources: ECX & Bluenext

III. Trends of the Carbon Market



CDM Market: Location and type of projects

- **Uneven regional focus;** China, India and Brazil = 85% of CDM market share;
- **Africa still emerging,** some successes in 2007;
- **Smaller projects** and aggregation opportunities **bypassed;**
- Reductions from **reforestation and deforestation** largely absent.

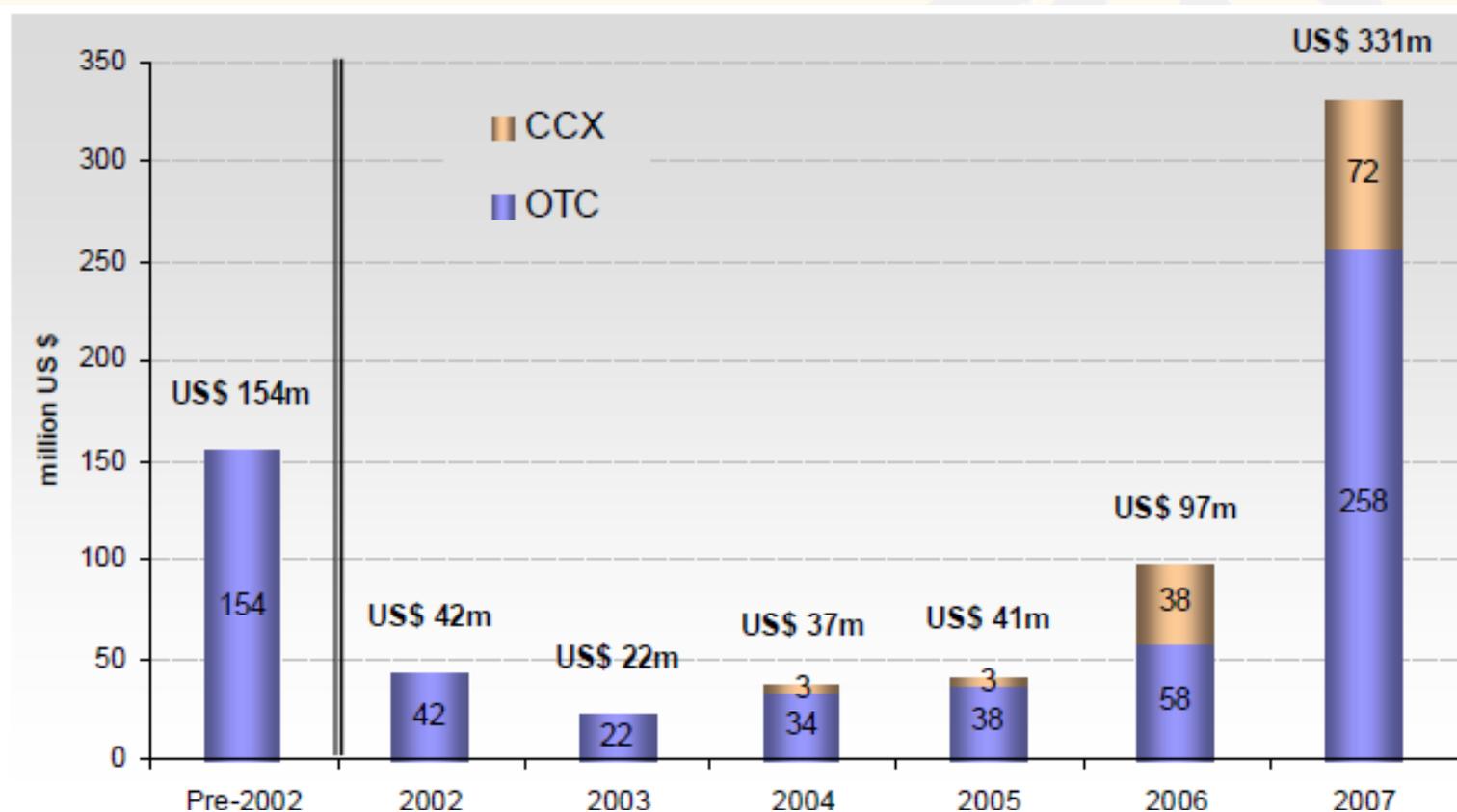


Source: WB State&Trends of the Carbon Market 2008

III. Trends of the Carbon Market

The Evolution of the Voluntary Market

Transaction values

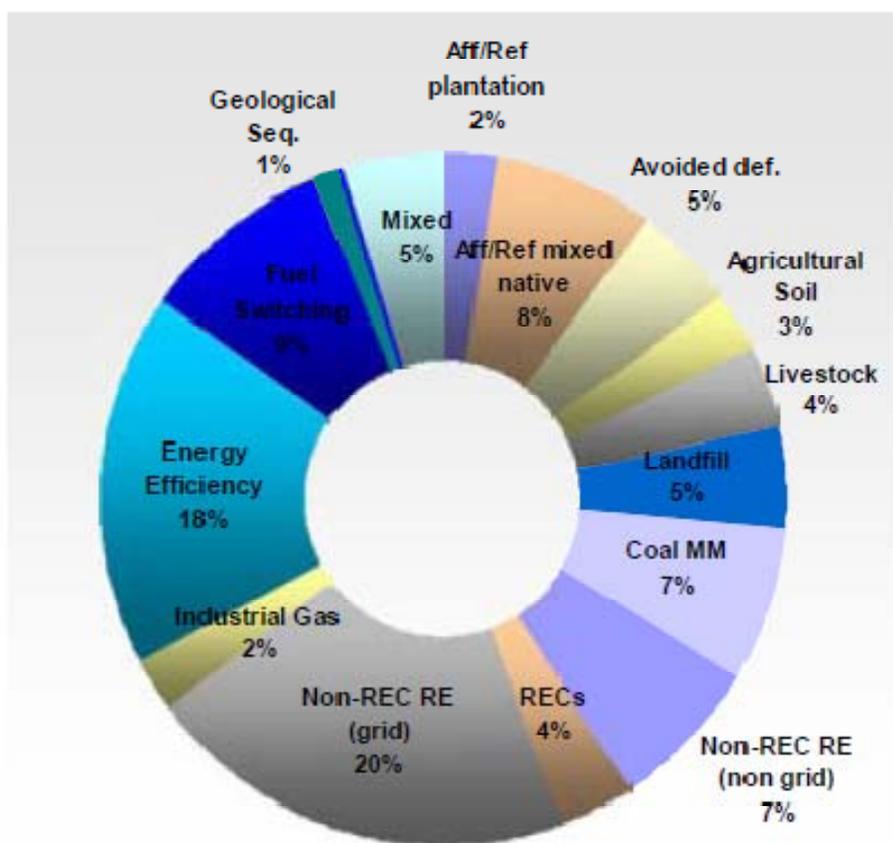


Source: Ecosystem Marketplace, New Carbon Finance

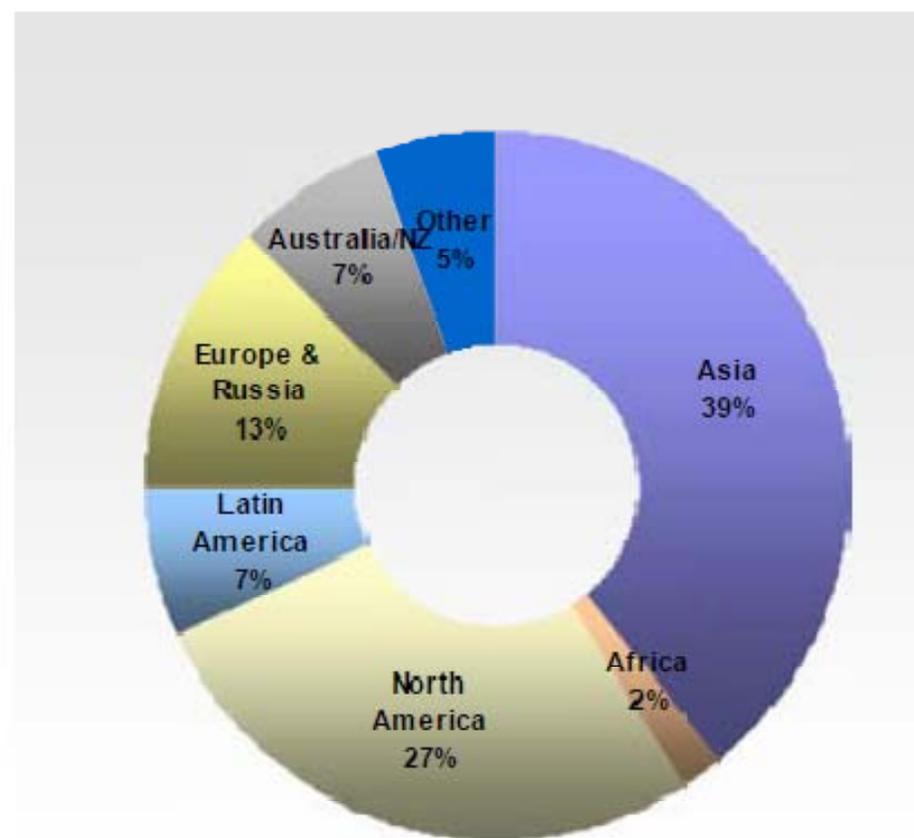
III. Trends of the Carbon Market

The Voluntary Market: location and type of projects

Transaction Volume by Project Type, OTC 2007



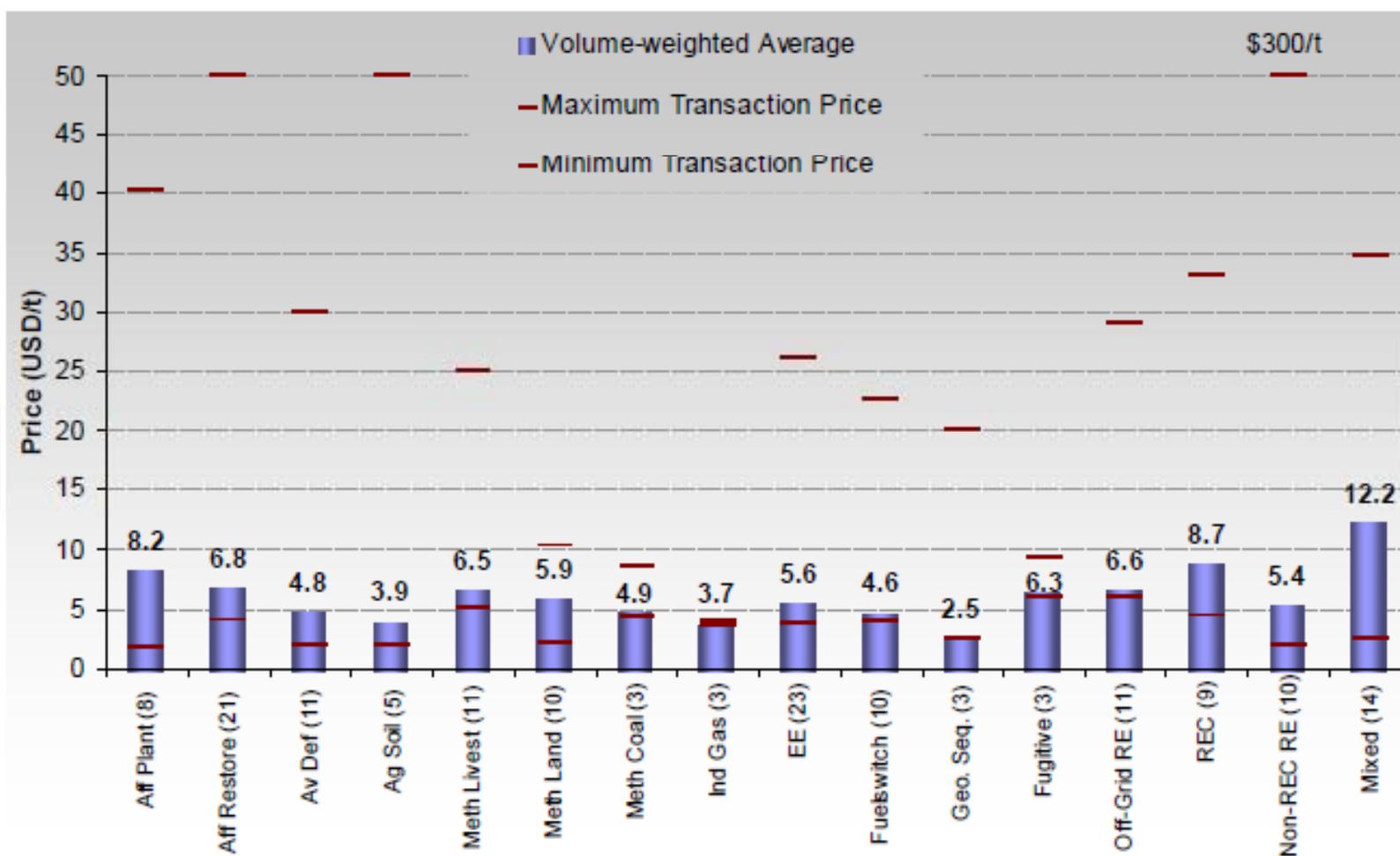
Transaction Volume by Project Location, OTC 2007



III. Trends of the Carbon Market

The Voluntary Market: prices

Credit Prices by Project Type, OTC 2007



IV. Household energy projects in carbon markets

The CDM Market

- CDM EB approved 2 methodologies could be used for :
 - Switch from NRB to renewable technologies (biogas/ solar cooker/ RB)
 - Energy efficiency measures in thermal applications (improved cook stoves)

Examples of projects in the UNFCCC pipeline:

Switch to the use of bio-fuel is not allowed under CDM, e.g.. Jatropha Oil

Nigeria	Dissemination of 11,000 efficient fuel wood stoves. validated	30,820 TCO ₂ /year
Zambia	Replacement with efficient cooking stoves using charcoal in 30,000households. Validation.	15,000 TCO ₂ /year
Indonesia	Dissemination of 1,000 solar cookers avoiding the use of non renewable fuel wool. Registered	3,500 TcO ₂ / year
China	Installation of 17,000 solar cookers for rural residents replacing coal used in cooking	35,723TCO ₂ /year
Nepal	Biogas support program (Activity2): Dissemination of 9,688 small biogas digesters for cooking and replacing non renewable fuel wood and kerosene.	46,893TCO ₂ /year

IV. Household energy projects in carbon markets



The Voluntary Market

- **Plurality of standards available:** Standards most commonly adopted in the US mkt are weaker than standards required by European buyers (more interested in high quality VERs)

Examples of projects in the voluntary market:

Combdia	Non renewable fuel wood saving with imroved cookstoves.	182,402TCO2 for the period (May2003-Jnuary 2007)
Uganda	Dissemination of efficient cook stoves	15,000 TCO2/year
Mali	Dissemination of efficient cook stoves	More than 10,000 TCO2

Conclusion:

Voluntary market or CDM market?



- Besides reducing emissions of CO₂, efficient or clean cook stoves have enormous benefits: health, environment, forest conservation, social/ community...
- The voluntary market works in parallel with the CDM

Voluntary market	CDM market
More flexibility: various more or less effective standards -> difficult to determine the quality	Less flexibility: to comply with variety of different rules -> high quality
Less transparency: VERs are not registered with a central index make the VER, high risk of double counting.	More transparency: CDM has one authority that sets standards and regulates the market
Lower transactions costs: Possibility of development of too small projects, which tend to have the highest co-benefits concerning poverty reduction and development	High transactions costs that occur before any certificate is issued



Thank you

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