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Pricing Carbon and CDM Project Investment Analysis

Muyi Kazim – Head of African Carbon Origination

African Bankers' Carbon Fin and Inv Forum – 4 Nov 2010

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Agenda – Pricing carbon

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1. **Preamble**
2. CERs as a commodity
3. Risks Associated with CERs
4. Carbon Markets Pricing Trends - Factors Influencing Prices
5. Carbon Contracts and ERPAs
6. About Standard Bank/Stanbic

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Standard Bank in Carbon Finance

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- One of the first banks in the world to enter the carbon market (since 2002)
- Operate in both primary and secondary markets, with key focus on CDM:
  - Direct financing of individual CDM projects
  - Trading all compliance units
  - Structured CDM transactions
- Standard Bank is one of the most advanced banks in trading primary CERs
- Our structured transaction business has won multiple awards, including Carbon Finance Deal of the Year 2009
- Strong integration with other bank products, for example, corporate lending, trade finance, microfinance
- We are making a substantial commitment to the development of African carbon markets
  - Local carbon staff in Lagos and Johannesburg
  - Establishment of ACAD
  - Trading and structured transactions are completed from London
- 2009: Deals injecting approx. $700 million into abatement

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Preamble: Causes and Solutions

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Why has the Clean Development Mechanism and resulting carbon credits been slow to implement in Africa?

Lack of Knowledge – Generally amongst FIs project Owners, Govt

Restricted availability of finance (Lack of FI knowledge and understanding....)

Price of Certified Emission Reductions (CERs)? Unknown

Tax rules uncertainty

The Recent improvements – creating solutions 'THE OPPORTUNITY NOW'

Increased demand for African CERs generates stronger pricing

Increase in funding for capacity building and improved knowledge

Clarity on tax issues, government policy

Increase in funding availability for early stage CDM projects

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Carbon Credits are Like any Commodity – Price is Set by Demand and Supply Forces

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Energy Project

Sale of power and reactive power under PPA

Utility

Incorporation of Carbon Credits into Normal Finance Instruments

Securitising carbon credit contracts in USD and EUR

- Project Finance
- Structured Trade Finance
- Corporate Finance
- Etc.

Sale of carbon credits under ERPA

Compliance Buyer

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What Risks are there in a Carbon Project?

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- **Construction**
- **Performance**
- **Credit**
- **Country**
- **Market**
  - Carbon
  - Other
- **CDM**
  - Registration
  - Baseline
  - Performance/volume
  - Verification
  - Delay
  - Eligibility (Art.17)
  - Methodology

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Focusing on the CDM Risks

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- Registration: Whether the project will be registered
- Baseline: What emissions are being displaced by the project?
- Performance/volume: Will the project perform? What volume of CERs will it produce (versus PDD)
- Verification: Will it be done? Properly? On time? What volume? Will the verifier find any problems?
- Delay: Will registration, verification or issuance be delayed? Why? What impact?
- Eligibility: Will the country remain qualified for carbon trading under the Kyoto Protocol (eg Bulgaria)?
- Methodology: Will the methodology change? Eg., HFC23
- Market risk: Is the developer selling guaranteed volume or un-guaranteed volume?
- Pre-2013/Post-2012

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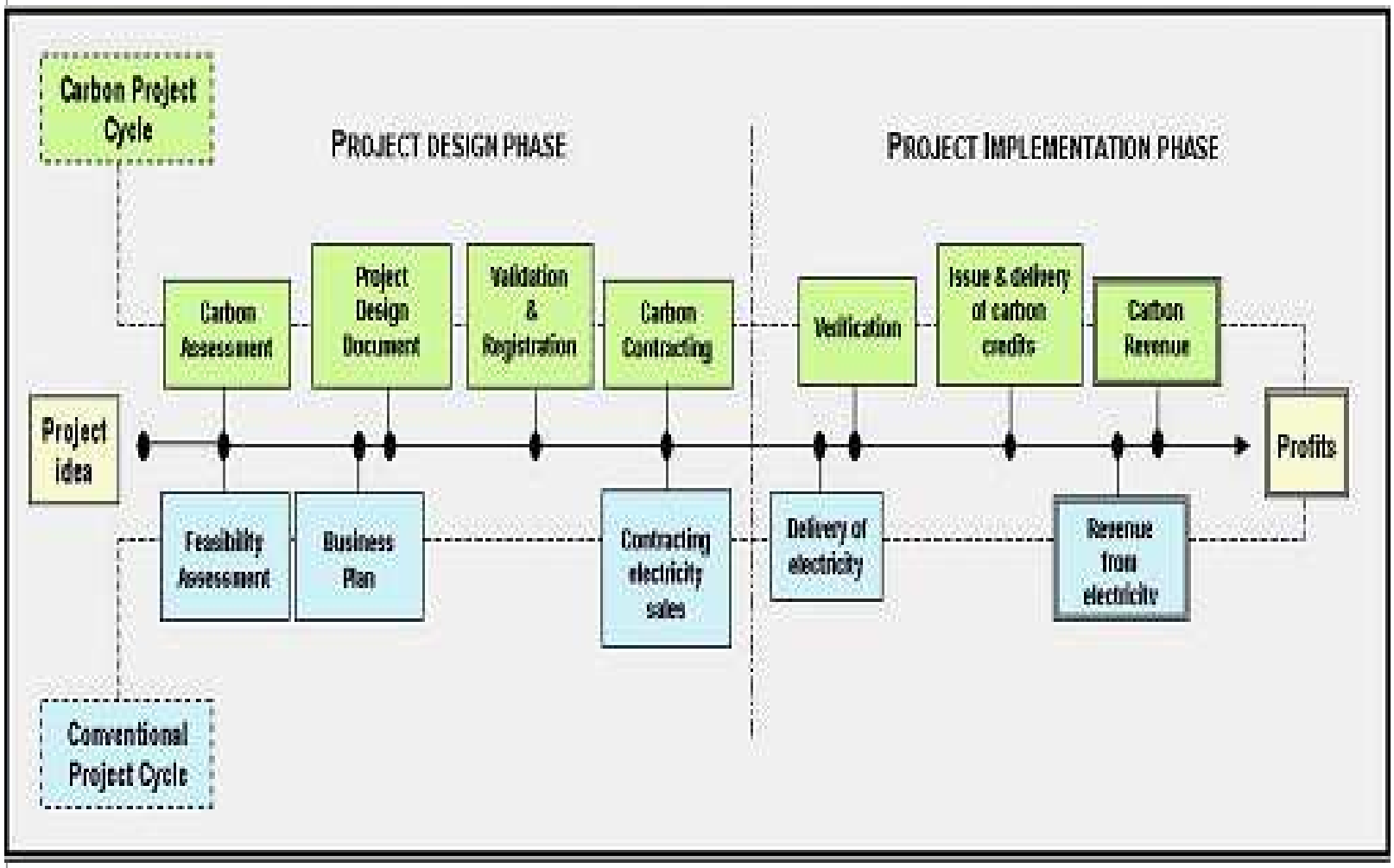
CDM and the Parallel Project Cycle



CER Price – Registration Risk

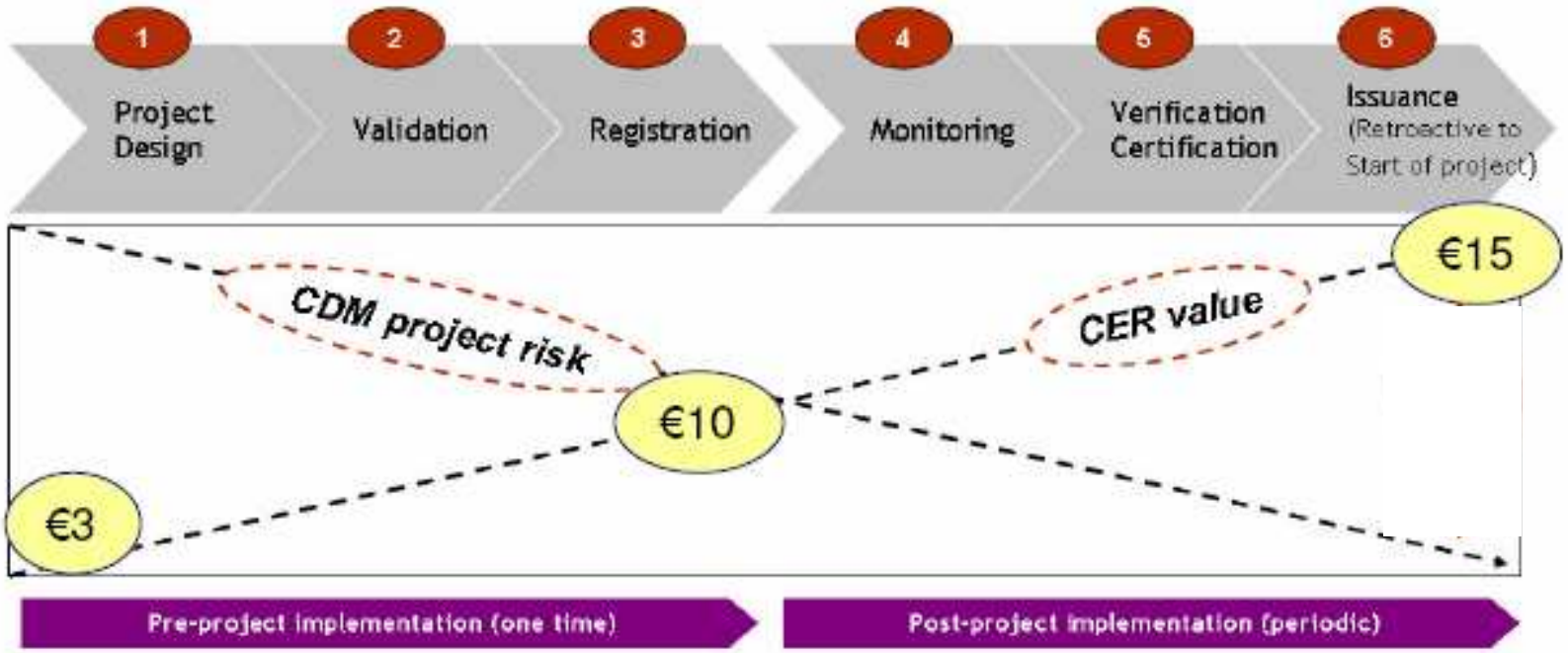


Diagram source: Carbon Capital Markets. Prices indicative only and may not be accurate

Risks Associated with Carbon Credit Projects

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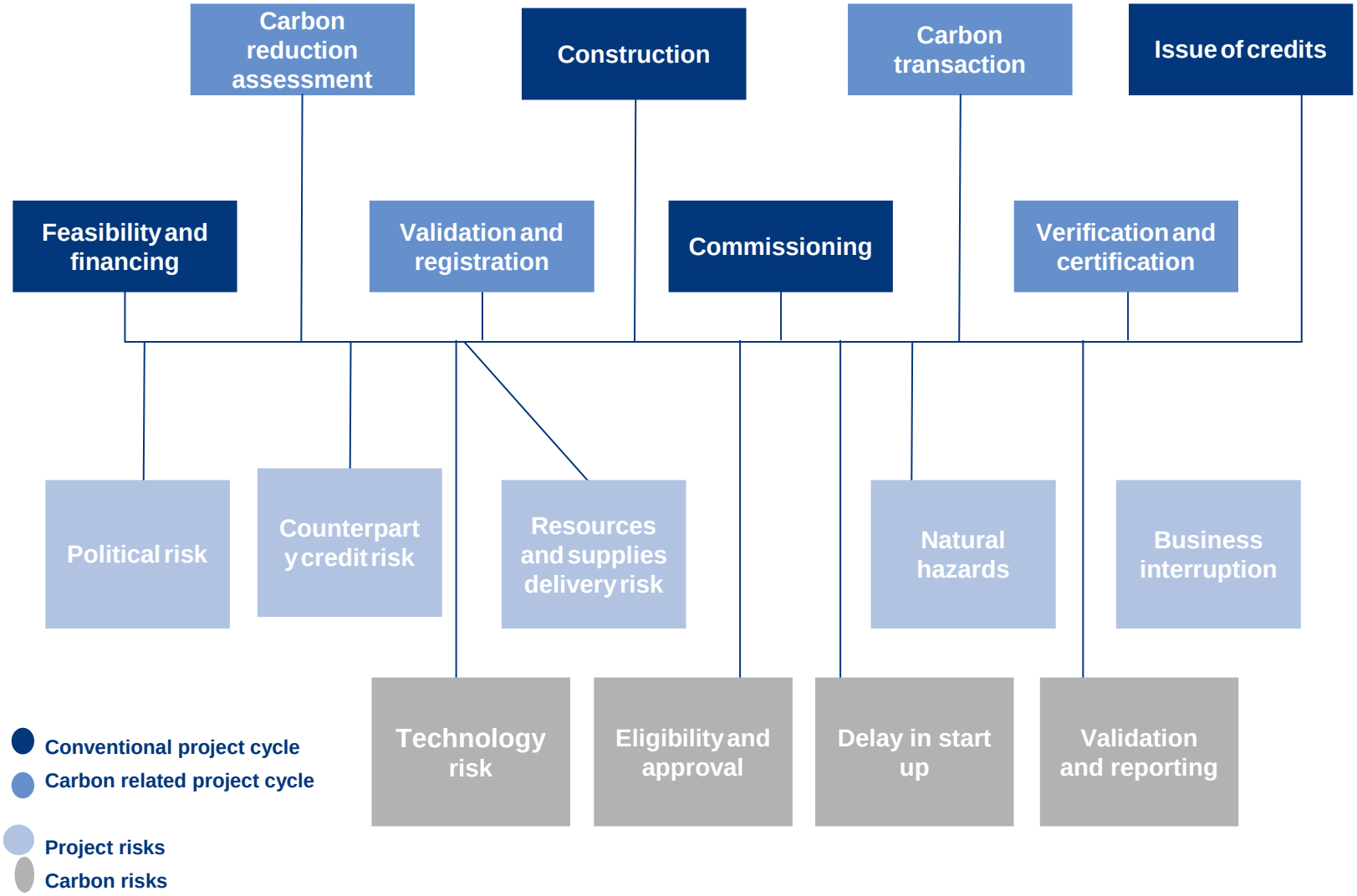

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Financing needs of a project and Price

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Total capital requirement of a project

Equity (ownership)	**Debt** (loan)
Initial project development costs First X% of capital expenditure	Debt gets repaid first and can claim assets, cash flows and equity Debt is cheaper than equity but is also “senior”

Gearing or leverage:
If project is 70% debt funded, it has “70% leverage”

- The riskier a project, the more equity is required compared to debt –Lower Price offered
- The earlier stage or riskier - Lower Price offered
- Same old Financial Institution Practice ‘Low Risk better price’ and vice versa

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Factors Affecting Market Prices Next 12 Months 2010 and Beyond

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- Size of the recovery and developments for the post 2012 environment, post COP 16.
- If there is no agreement for post 2012 and Europe adopts a lower target 2013 - 2020 then prices will fall as there will be less demand. Political factors
- UNFCCC bottlenecks/approval innovations
- DOE suspensions/delays
- GDP and therefore manufacturing etc will be the main driver behind prices, a quick pick up in GDP will lead to a quick pick up in carbon prices.

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- In the EU more manufacturing – more power required – more emissions – more requirement to purchase offsets.
- There will remain a premium for African/LDC CERs even in the short – medium term due to demand still outstripping supply.
- New sources of supply from LDCs and Africa; i.e. Re/Afforestation, Biofuels, Programmatic approach???

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There are different types of CER trades

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- Spot trade:
  - Wait until issuance and then sell
  - Highest price but exposed to price movement risk until issuance
  - Documentation: Spot ERPA or ISDA confirmation
- Forward:
  - Sell now for future delivery and payment
  - Avoids price risk but no up-front finance
  - Discounted price compared to spot but buyer takes price risk
  - Documentation: ERPA
- Futures
  - Enter a derivative contract for a fixed future price
  - Hedges price risk but penalties for non-delivery and need sophisticated trading arrangements
  - Documentation: ISDA

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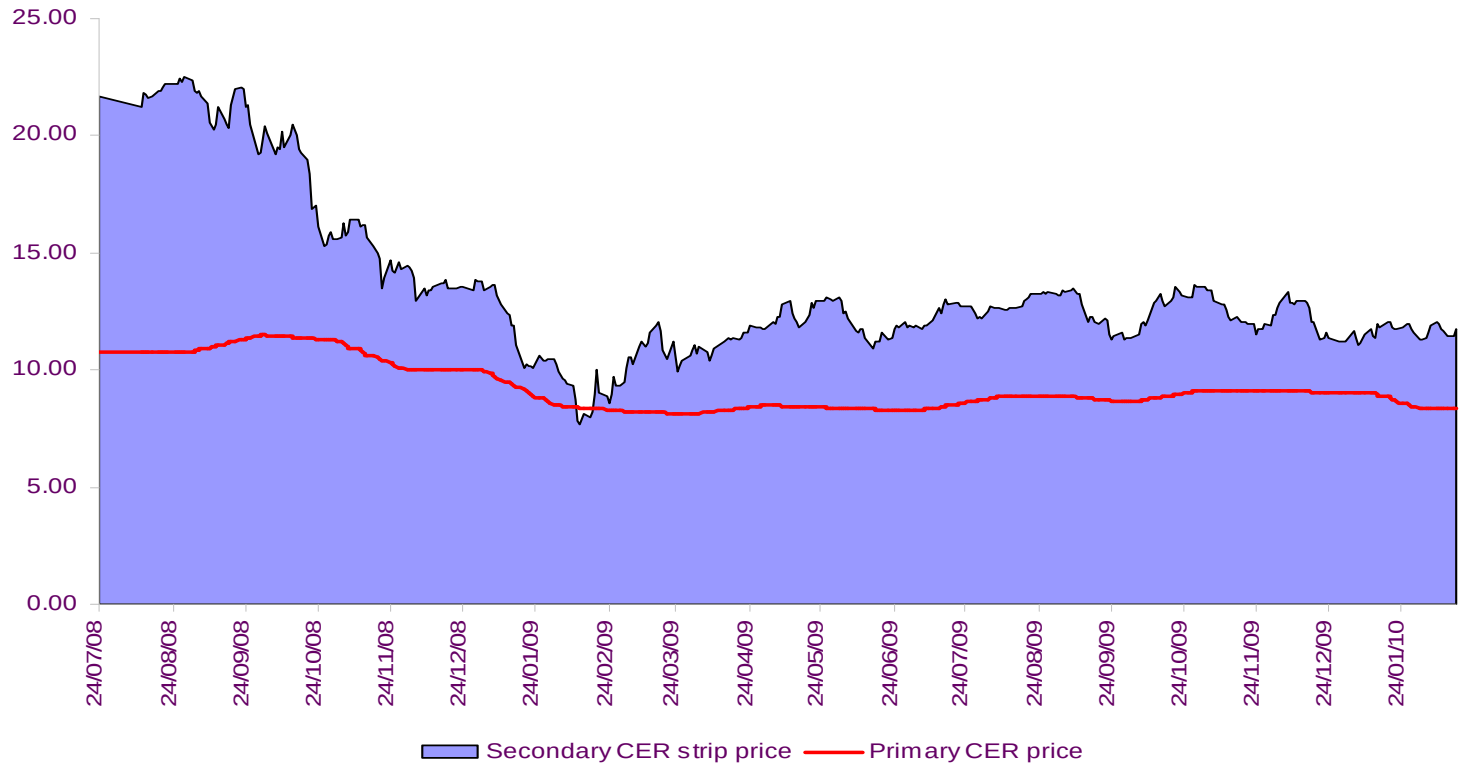
Pricing


28
24
20
16
12
8
CER Dec-09
EUR Dec-09
30-Sep
31-Dec
12-Feb
31-Mar
30-Jun


6
5
4
3
2
1
0
EUA-CER Spread Dec-09
30-Sep
31-Dec
12-Feb
31-Mar
30-Jun

Primary to Secondary Carbon Pricing



This creates the possibility that a PDD stage project sold in early 2008 would have gained a higher price than a registered project in early 2009.

Project owners are therefore unknowingly exposed to the price of carbon from the very earliest stages of their project.

Clean Development Mechanism: Timelines and Volume Risk

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Methodology

Project Design → Validation → Registration → Monitoring

- Ongoing

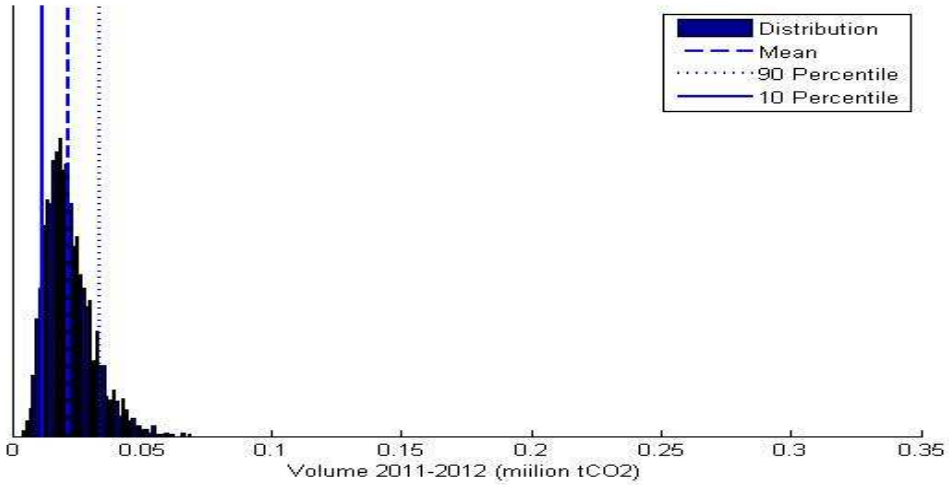
Verification

- Independent verifier

Issuance

- By CDM Executive Board

3-12 months



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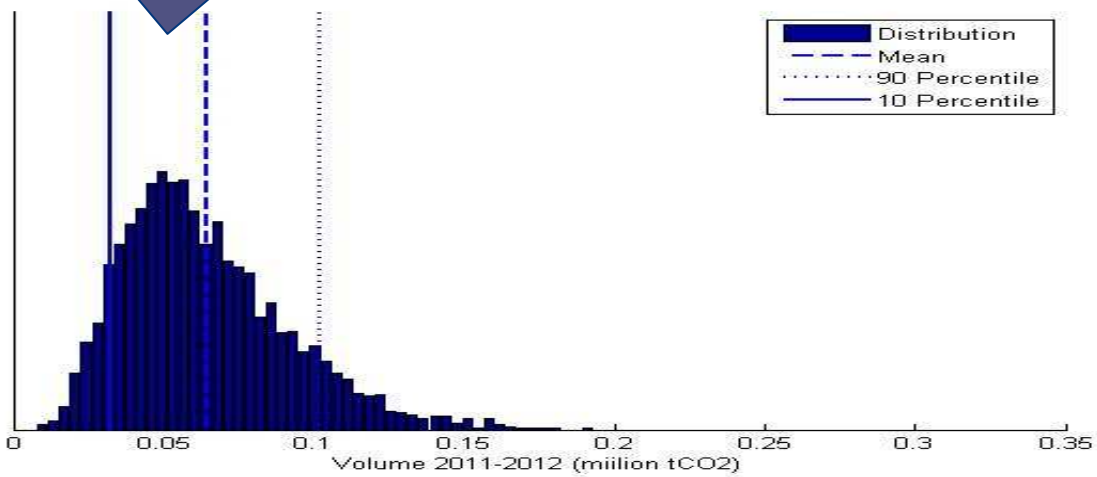

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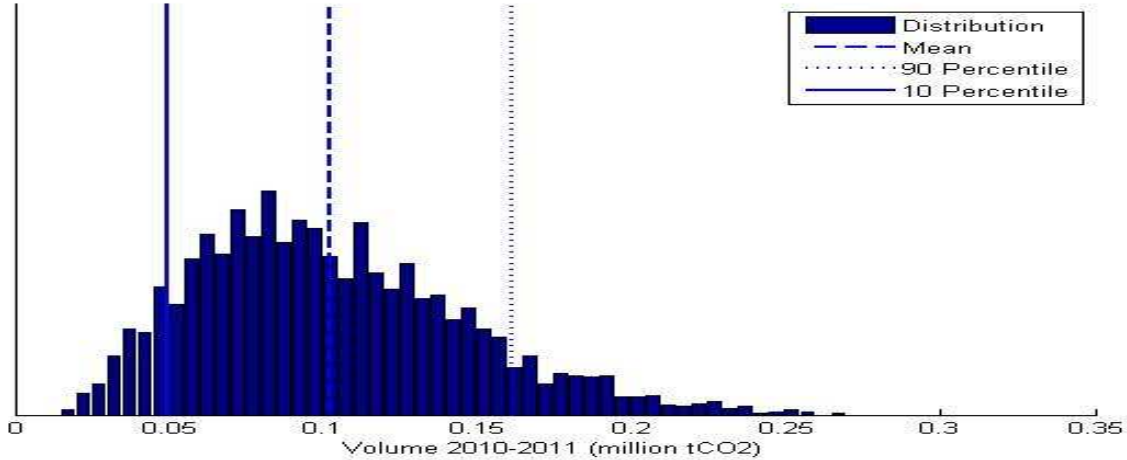

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Veri

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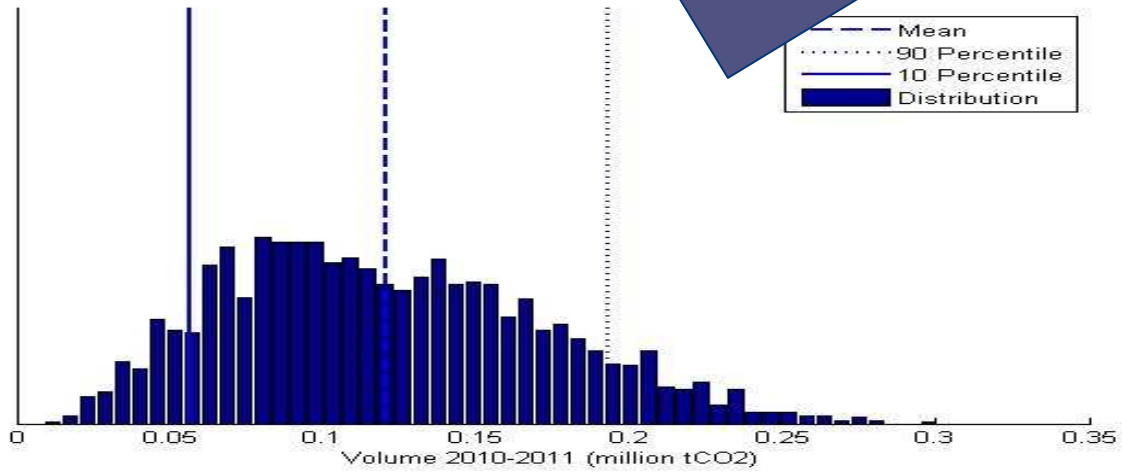
6-12 months | 3-12 months

Is

- By CDM Executive Board



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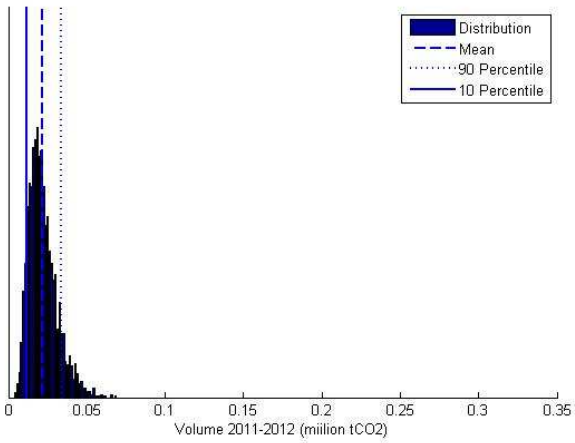
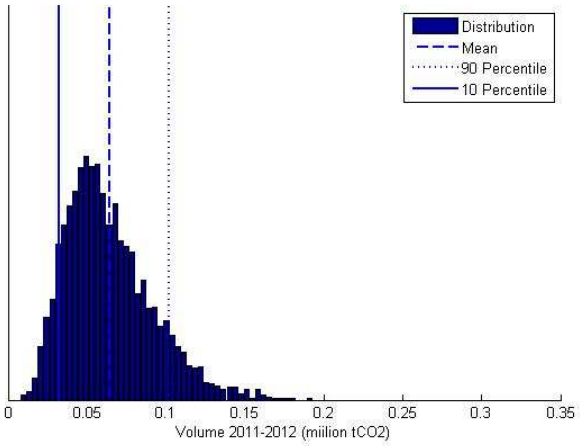
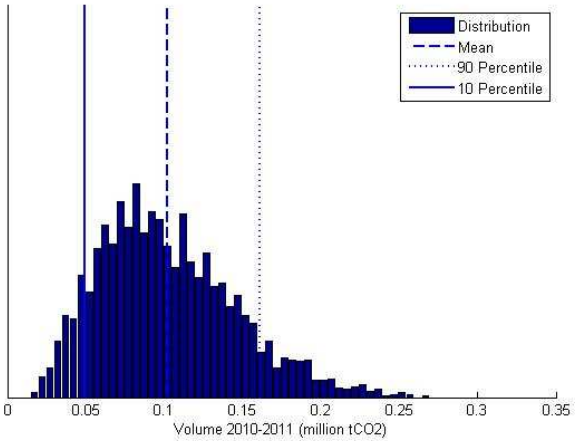
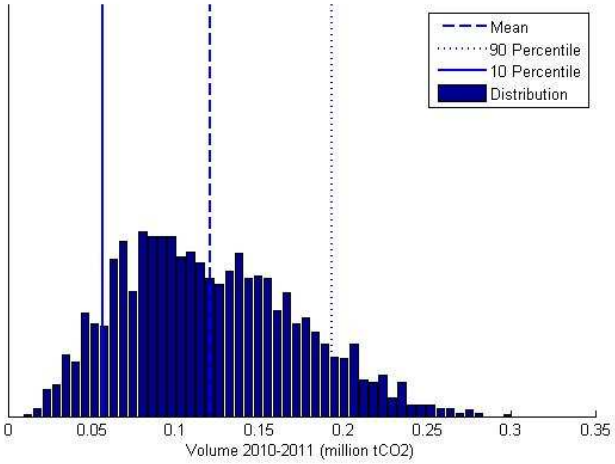
Summary of CDM Volumetric Risk









Contracts for Buying Carbon credits from a Project

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- Standard Bank have one of the most active trading desks in the carbon markets
- Due to our high level of experience in markets and sophisticated valuation tools we can accurately price primary project risk and offer competitive price on primary carbon projects

Carbon Contracts

- Advance Payment Agreements - APA
- Letter of Intent
- ISDAs
- ERPAs

Alternative pricing tools under ERPA agreements

- Fixed price over the term of ERPA – both pre and post 2012.
- Floating price over the period (On every delivery the current market price – less % is paid)
- Floating price with a floor and cap (limiting downside – showing possible financing a minimum income)
- Guaranteed delivery of a portion of the volume (this has a potential downside for the project owner)
- Ability of SB to prepay and cover CDM costs

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- A global emerging markets bank, headquartered in South Africa
- In terms of total assets, Standard Bank is the largest bank domiciled in Africa
- Full-service bank covering:
  - Personal & Business Banking
  - Corporate & Investment Banking
  - Investment Management & Life Insurance

- Leading financial services provider in South Africa – one of the fastest growing emerging market banking sectors. Growing market share across all sectors and a consistent track record of increasing profitability and franchise value
- The largest bank in Africa with presence in 17 countries
- Global reach on the ground in 16 countries outside Africa with distribution capabilities in the world's leading financial centres – New York, London and Hong Kong
- Signed strategic partnership with the Industrial and Commercial Bank of China Limited (ICBC), one of the largest banks in the world by market capitalisation

- Total assets approximately US$181 billion (December 2009)
- Market capitalisation of approximately US$22 billion (December 2009)
- Present in 33 countries around the world
- Employs over 50,000 people (including Liberty Life)

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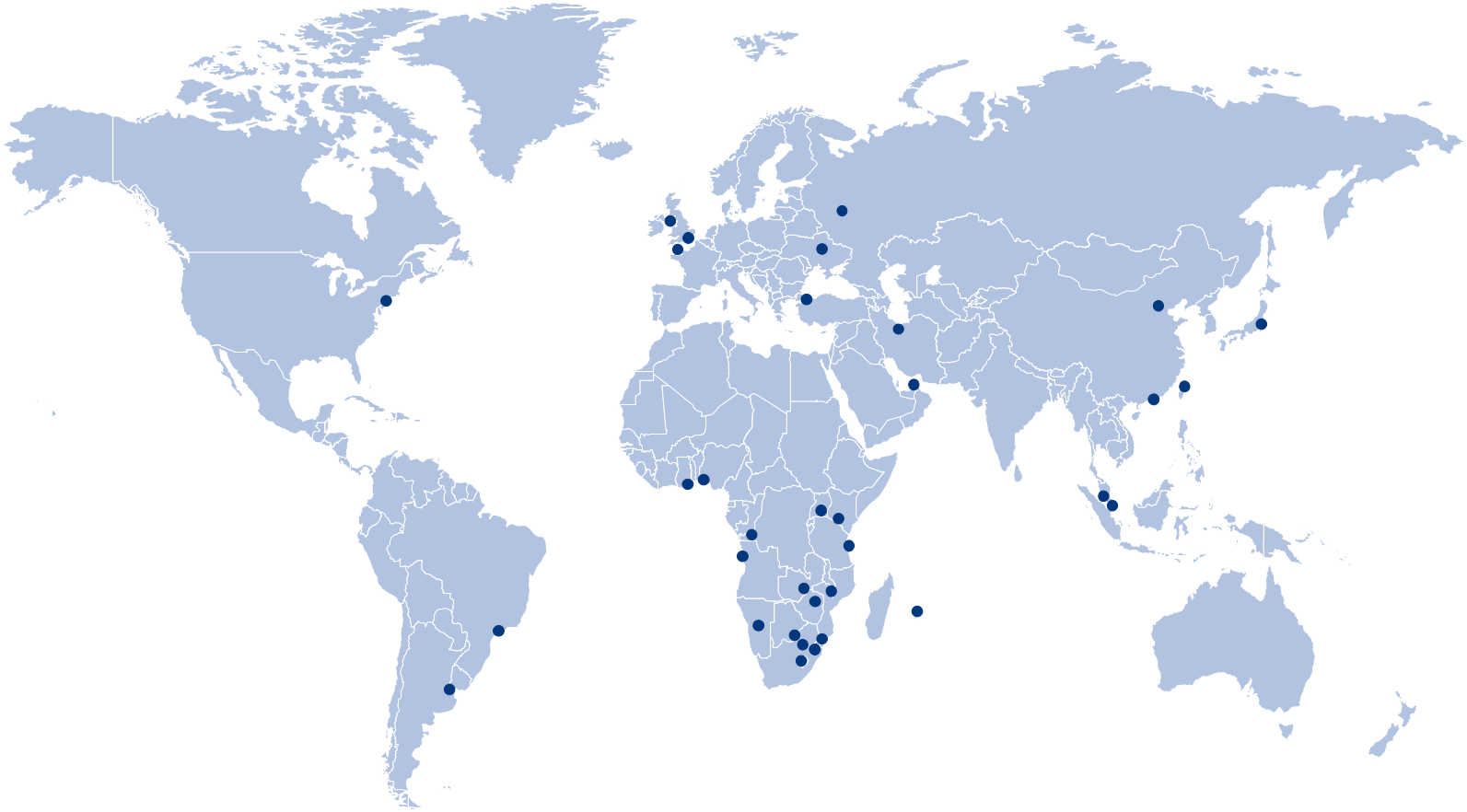
Locations

- Operates in 33 countries worldwide
- 17 African countries
- 16 countries outside Africa

Universal banking capabilities

Expanding global footprint



Presence in 33 countries → **Focus on emerging markets** → **Universal banking model** → **CIB driving growth internationally**

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Unrivalled Presence in Africa

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Unrivalled knowledge of sub-Saharan Africa

Growth on continent is strategic focus

- Over 150 years of experience in Africa
- Largest bank in Africa
  - Over 40,000 employees in Africa
  - Headquartered in Johannesburg
- Growth on the continent is a key strategic focus area
- Investment banking presence across the region and in key markets strengthened by recent acquisitions:
  - IBTC Chartered Bank, Nigeria
  - CFC Bank, Kenya

Angola	Lesotho	Nigeria	Zambia
Botswana	Malawi	South Africa	Zimbabwe
DRC	Mauritius	Swaziland	
Ghana	Mozambique	Tanzania	
Kenya	Namibia	Uganda	

- Unrivalled knowledge of sub-Saharan Africa
- On-the-ground presence in 17 countries

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Awards

2005 - 2008

Global Finance

Best bank for payments and collections in Africa

Standard Bank

2008

GTR

Best Trade Finance Bank in sub-Saharan Africa

Standard Bank

2007

The Banker
Bank of the Year 2007
Emerging Markets

Emerging Markets Bank of the Year

Standard Bank

2008

GTR

Carbon Credits Best Trade Award Camco Structured Distribution

Standard Bank

2006, 2007, 2008

SPIRE AWARDS

Best debt research house in South Africa

Standard Bank

2008

The Banker
Bank of the Year 2008
AFRICA

Africa Bank of the Year

Standard Bank

2006 – 2007, 2009

Global Finance

Best overall bank for cash management in Africa

Standard Bank

2008

GTR

Leading Trade Services Bank in sub-Saharan Africa

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Credit ratings

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	Short-term	Long-term	Outlook
Standard Bank of South Africa			
Fitch Ratings (March 2009)			
- Foreign Currency Issuer Default Rating	F2	BBB+	Stable
- Local Currency Issuer Default Rating		BBB+	Stable
-National	F1+(zaf)	AA(zaf)	Stable
Moody's Investors Services (December 2008)			
- Bank Deposit ratings	P-2	Baa1	Stable
Standard International Holdings			
Fitch Ratings (March 2009)			
- Foreign Currency Issuer Default Rating	F2	BBB+	Stable
Moody's Investor Services (March 2009)			
- Issuer rating		Baa1	Negative
Standard Bank Plc			
Fitch Ratings (March 2009)			
- Foreign Currency Issuer Default Rating	F2	BBB+	Stable
Moody's Investor Services (March 2009)			
- Bank deposits	P-2	A3	Negative

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Contact Details

Stanbic IBTC Bank
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- **African Origination**

  Muyi Kazim (Lagos)
  Muyideen.kazim@stanbic.com +234 802 052 0070

- **Trading, Structuring and Placement**

  Fenella Aouane, Geoff Sinclair, Mark Codling +44 20 3145 6888
  fenella.aouane@standardbank.com
  geoff.sinclair@standardbank.com
  mark.codling@standardbank.com

  CO2@standardbank.com

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