CASE STUDY – AFRICAN CDM PROJECTS

What Makes Carbon Transactions Bankable'

Muyi Kazim – Head of Carbon Origination Africa

Stanbic IBTC Bank
A member of Standard Bank Group

Nigeria Sustainable Finance Week – Sept 2011

Standard Bank

2. Standard Bank in Climate Finance

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Standard Bank in the Carbon Markets

- One of the earliest banks to enter the carbon emissions space and a market leader
- Emerging market strength of the group gives us a natural advantage in the CDM project based market
- Operates within both primary and secondary markets. This adds to the flexibility that we can offer clients; a mixture of investment in primary projects to trading guaranteed credits
- We partner with other product groups from Investment Banking and Global Markets within Standard Bank to deliver the optimal solution
- Completed several 'first to market' transactions and award winning structures in carbon
- Unique Public private partnership through ACAD to help boost carbon credit activity in Africa

Products

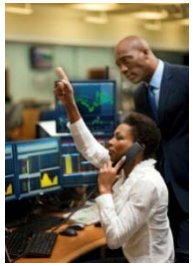
- Guaranteed CERs (certified emission reductions)
- Non-guaranteed CERs
- European allowances (EUAs)
- CER delivery guarantees
- EUA and CER options
- EUA and CER commodity repos
- VERs, ERUs, AAUs and other carbon credits

Services

- Risk management
- Trading
- Structuring
- Financing
- Distribution
- Advisory

Standard Bank in the Carbon Markets

Traders & Funds



CDM Project

Standard Bank

Compliance Buyers

Investors

Finance
- Project
- Transactional
- Structured

Origination
- Primary

Structuring
- Purchase
- Distribution

- Trading
- Structuring
- Lending & Distribution

Trading
- Primary
- Secondary
- Structured

Structuring
- EUA/CER Swaps
- Repo Financing

Risk Management
- Cross Commodity

African Carbon transactions mandated in 2010 and H1 2011

Tanzania

650,000 CERs

Efficient Lighting – POA

Standard Bank

South Africa

1 millions CERs

Solar Water Heating – POA

Standard Bank

Kenya

1.4 million CERs

Efficient Lighting – POA

Standard Bank

Ghana

393,000 CERs

Municipal Waste Composting

Standard Bank

Nigeria

270,000 CERs

Fuel Switch

Standard Bank

Kenya

80,000 CERs

Small Hydro Power

Standard Bank

African Carbon transactions mandated in 2010 and H1 2011

Nigeria

1.2 million CERs

Energy Efficiency

Standard Bank

South Africa

5 million CERs

3 REFIT Projects 2Wind, 1 PV

Standard Bank

South Africa

2 millions CERs

2 Solar Parks - PV

Standard Bank

Intro

- We can identify two significant challenges for any CDM project
- Private Sector Capital for Financing Climate Change and CDM
- Public Sector Capital for supporting the private sector capital flow

- The Question is Will there still be the ability for the Non-LDC Middle and Lower Middle Income African countries to do this?? Banks need to know in order to decide which projects to support

- Mobilising and Accessing Finance for Non-LDC CDM projects in Africa will increasingly be subject to the answer to the above question in the next 12 months

Rationale : CDM in Africa – C. EUR 1Bn in Projected Revenues

Source UNEP Risoe) as @ 1 July 2011

Africa	Total Number		Registered	kCER2012
South Africa	40	23.6%	19	22696
Kenya	20	11.2%	5	2475
Morocco	17	10.6%	5	4581
Egypt	16	9.3%	9	16142
Uganda	14	8.1%	4	2025
Nigeria	11	6.2%	5	35968
Tanzania	6	3.1%	1	1759
Congo DR	4	3.1%	2	1118
Tunisia	4	2.5%	2	4257
Cameroon	4	2.5%	2	546
Rwanda	4	2.5%	2	453
Senegal	5	2.5%	1	786
Côte d'Ivoire	3	1.9%	3	1263
Madagascar	3	2.5%	1	138
Sudan	2	1.2%		367
Swaziland	2	1.2%		451
Mauritius	2	1.2%		279
Mali	1	0.6%	1	94
Zambia	1	0.6%	1	387
Ethiopia	1	0.6%	1	179
Liberia	1	0.6%	1	187
Cape Verde	1	0.6%		340
Ghana	2	1.2%		2474
Lesotho	1	0.6%		79
Libya	1	0.6%		573
Togo	1	0.6%		5
Mozambique	1	0.6%		63
Equatorial Guinea				
Total	168	100%	65	99368

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The Long Standing African Issue and Solutions

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

Lack of Knowledge, **FI's,** Industry, Regulators

Restricted availability of finance as a result of the above

Pricing of power from grid – Regional Grid Emission Factors

Tax rules uncertainty

What are recent improvements – creating solutions

Need for viable power and pricing of grid sourced power. Regional Grids

Increase in funding for 'Real' capacity building - Learning By Doing - Today

Increase in funding availability, if you have the know how to access it.

Actions to improve carbon finance in Africa

- Ability to use LDC CERs post-2012 and moves toward favouring African CERs

- New efforts to boost sub-Saharan African CDM
  - Working internally and with other African FIs to develop financing capacity in programmatic projects, small-scale and less 'conventional' projects
  - JV with UN agencies 'ACAD' aimed at supporting CDM process financing, supplying access to consultants, at no cost

- Requires cooperation across private and public sector
  - To meet challenges of :
    - 1. Feasibility study financing
    - 2. Early stage Equity financing……AfDB, DBSA the World Bank and other DFI's as Guarantors projects or/and of Carbon offtake.

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

Utility

Sale of power and reactive power under PPA

Energy Project

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

Financing of CERs via trades
With Risk Factors

- 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

CER Forward Sale

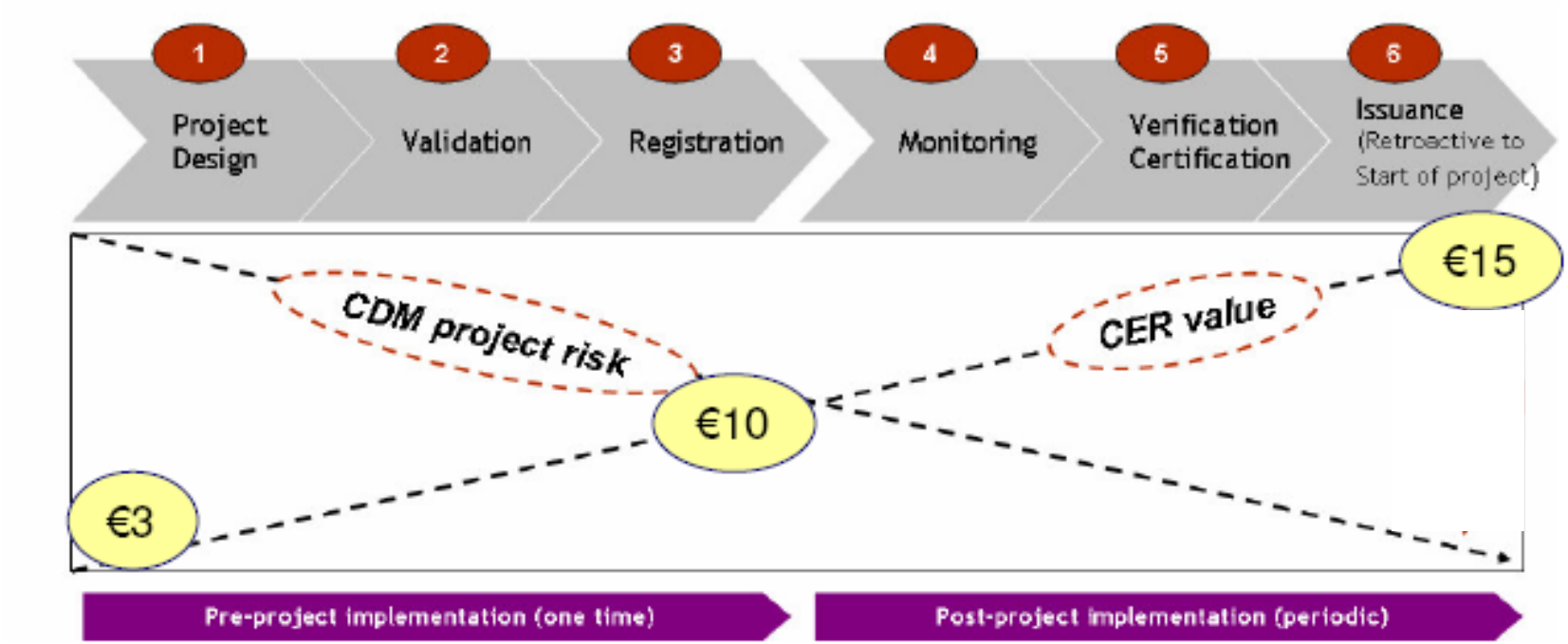


Diagram source: Carbon Capital Markets. Prices indicative only and may not be accurate

Making Carbon Transactions Bankable …….
Financing needs of a project fall into a number of categories

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"

Equity is typically spent on:
- Design & feasibility
- Permits & approvals, EIA
- PIN, PDD, registration
- Legal & financing costs
- Initial project construction

Debt is typically spent on:
- Construction costs
- Re-financing equity once the project is at a less risky stage

- The riskier a project, the more equity is required compared to debt
- The earlier stage or risker a project, the more expensive the debt

Typical sources of equity Needed To Be in Place to Assist Finance Inflow

- Owner investment (“Sponsor’s equity”)
- Equity investors & funds
  - Banks often have equity investment arms and/or know equity investors
- Grant funding
- “Sweat equity”: the owner works for free, this is limited (5 – 10% max)
- Pre-payment on CERs

Some Financial Products we can use in the CDM Projects Market

- Offtake Agreements (ERPAs)
- Pre-payments
  - 20-50% depending on project
  - Banks can pay more for good quality projects
- Corporate equity
- Corporate debt
  - Senior
  - Mezzanine
- Project finance
- Structured commodity finance & securitisation

Contracts for Buying Carbon credits from a Project

- 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

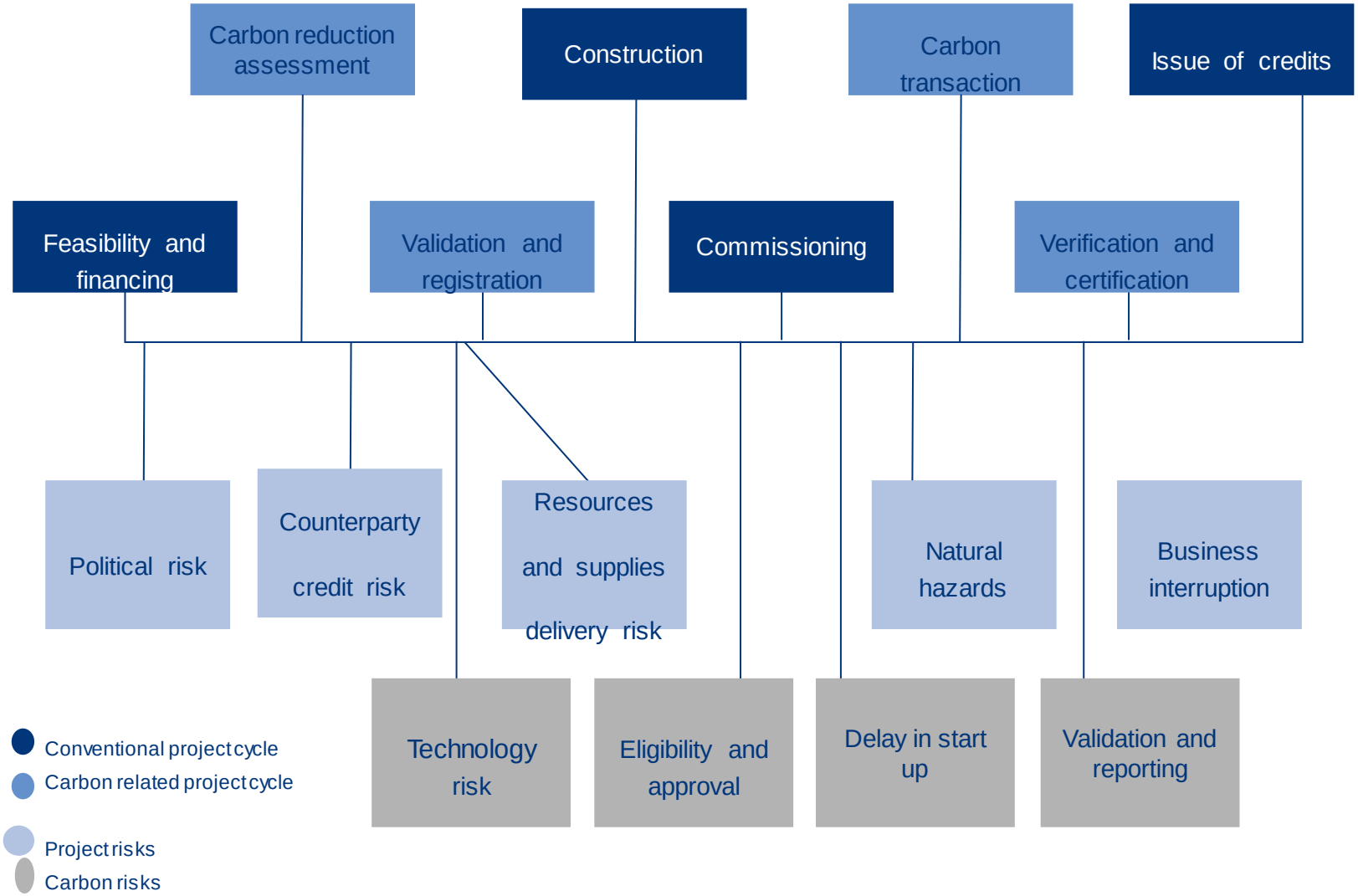
Project Types and Current Ease of Finance

	Typical finance type/difficulty	Reason
HFCs. PFCs, N2O	Equity – easy Not in EU ETS Post March 2013	Highly profitable, not capital intensive
Landfill gas	Equity/debt – moderate	Profitable but gas output unpredictable
CMM/CBM/VAM	Debt/equity – easy	Profitable and predictable
Cement-based	Debt/equity – easy	Profitable, asset-based
CHP/Cogen	Debt/equity – easy	Profitable, asset based
Renewables	Debt/equity - moderate	Like 'normal' energy
LULUCF-based	Equity - difficult	Methodologies and acceptability uncertain
Energy efficiency (distributed)	Equity - difficult	Lack of assets to secure, meth uncertainty

What Risks are there in a Carbon Project?

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

Risks Associated with Carbon Credit Projects



Focusing on the 'Traditional' CDM risks

- 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 (No Agreement for 2nd commitment phase yet
- Methodology: Will the methodology change? Eg., HFC23
- Market risk: Is the developer selling guaranteed volume or un-guaranteed volume?
- Is the agreement subject to any rules and regulations remaining in place; EU ETS compliance?
- Pre-2013/Post-2012

Investment Trends linked to CDM

64% of Investment in African CDM has been in the last 2.5 years; 50% in last 18 months

Host country	Reg. projects	All years	2004	2005	2006	2007	2008	2009	2010	2011	2012
		Investment in million US$									
China	1439	82971		61	1420	5621	11028	19470	31012	14358	
India	678	19294	5	109	1357	4116	1291	4436	7125	855	
Latin America	532	8839	18	439	2574	1617	1584	1271	548	787	
Rest of Asia	426	5411		85	986	432	345	996	1815	750	
Africa	65	2500		118	392	298	73	338	678	603	
Middle-East	37	1775			3	303	65	575	27	803	
Europe and Central Asia	30	285		6	123	5	5	83	44	19	
Total	3207	121076	23	819	6855	12393	14392	27170	41249	18176	

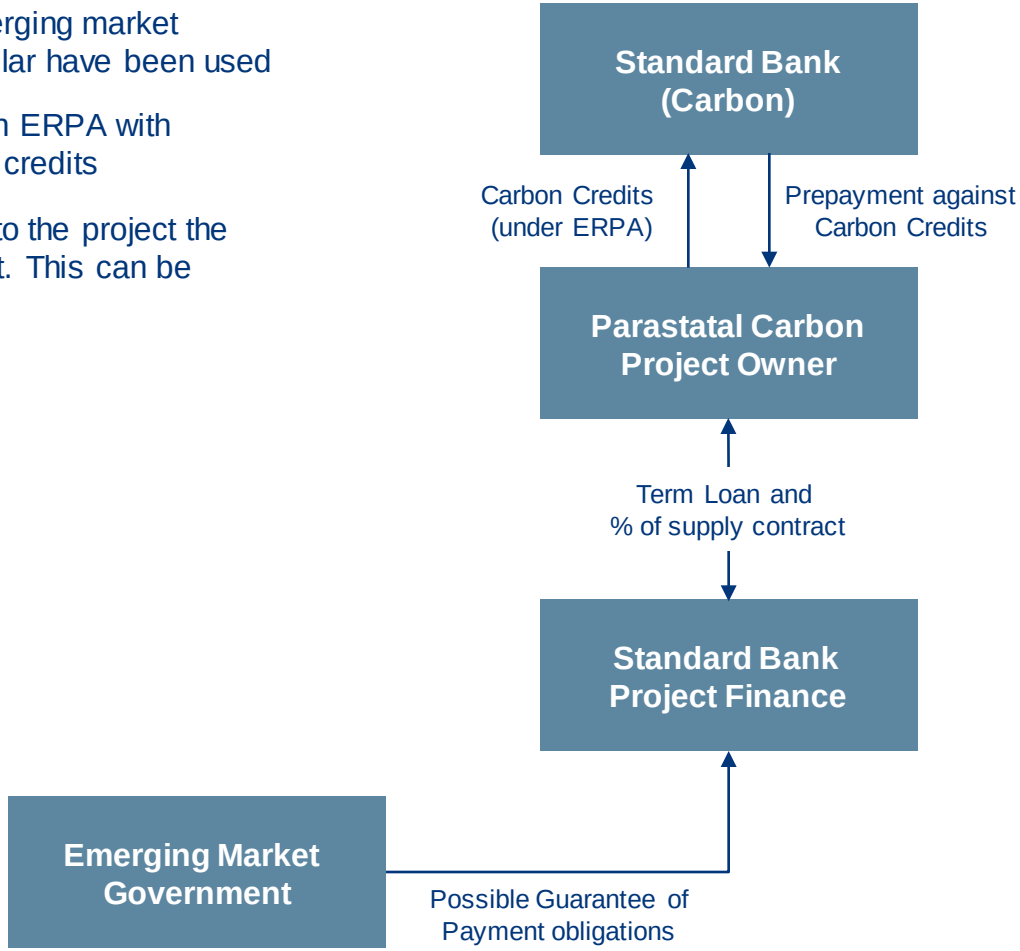
Source: July 2011, UNEP Risoe CDM Pipeline

3. Case Studies

Structuring: Prefinancing against a single project

How a prepayment against carbon credits can enhance a financing structure

- For government owned projects in emerging market countries the following structure or similar have been used
- Standard Bank would contract under an ERPA with project owner to purchase their carbon credits
- Against this forward stream of income to the project the bank would provide an upfront payment. This can be made in local currency if desired



Case study: Compliance buyer For a Primary Market Project in Africa

UK Cement Company given emissions cap of 1,000,000 tonnes for year, as shown in the UK NAP

UK Cement Company allocated 950,000 EUAs by Government

Cement company surrenders 1,000,000 allowed ERs to Government

The company must purchase 50kt to have credits to ensure they have enough credits to meet their cap

Standard Bank can sell the outstanding 50kt EUAs in spot or forward market to the company

With an allocation of 1mt for the year the company is able to replace up to 9% of their EUAs with CERs

Providing CERs remain at a discount to EUAs Standard Bank would offer a package to buy EUAs from the company, sell them back CERs

Standard Bank Would act as the purchaser of the Primary Credits from the African Project, assisting their cash flow an d immediate project support

Standard Bank can offer fixed and floating price to the African project, and as it has access and experience of the market it would be able to meet long term requirements of the compliance buyer as a one-stop shop

CDM (Primary Market): Nigerian Industrial Project Being developed

Use of Gas and Capture of waste heat to generate power

- Gas previously vented?
- Current power grid mix?

Fuel Substitution

- Fossil fuel to gas or biofuel (grid mix?)
- Good supply?
- New equipment required?

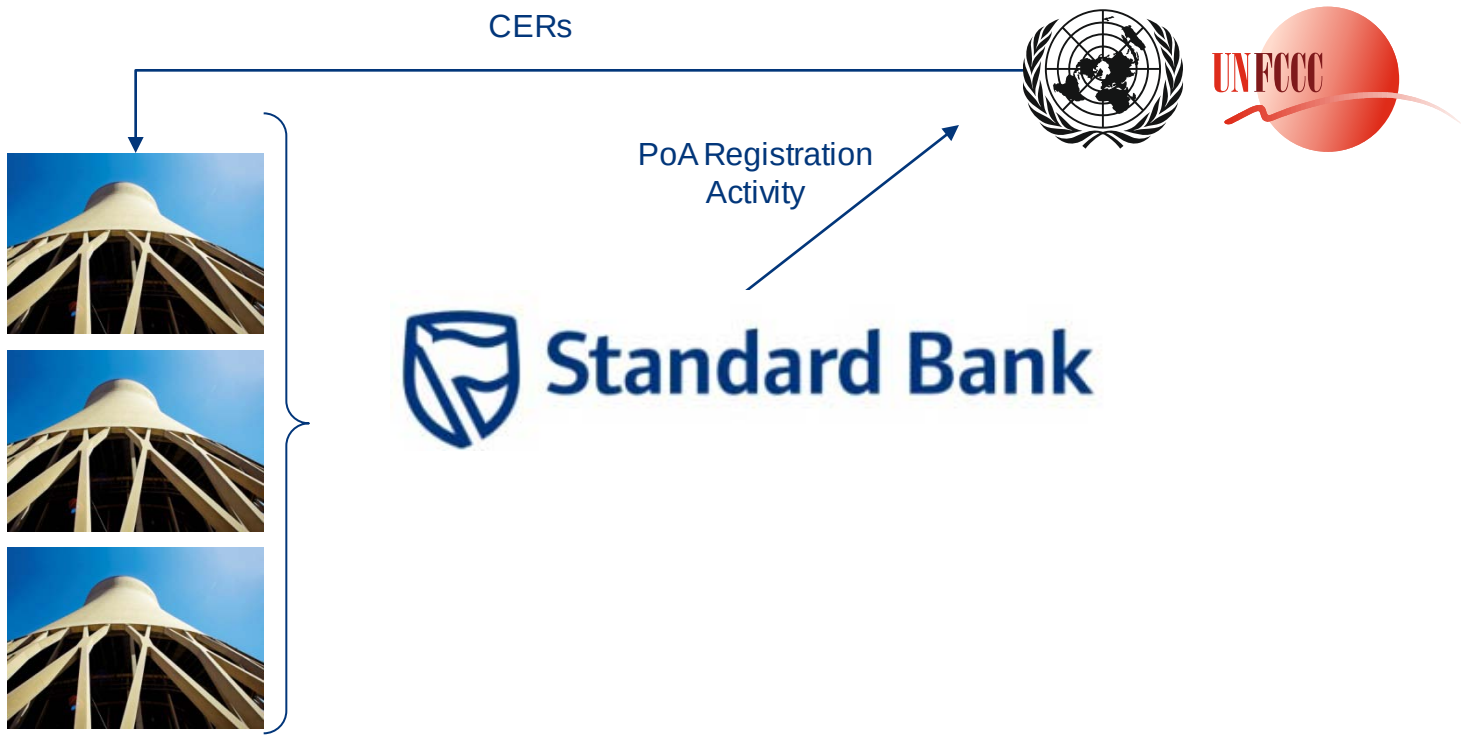
- Substitution of clinker with slag and fly ash
- Consider what investment is required?

Standard Bank Plc offered the client the following

- Assistance in identification of projects and link up with suitable project developer to complete CDM process
- Through project finance offer funding for infrastructure changes required
- Forward contract agreed for stream CERS to help support project funding argument and projected cashflows
- Simple fixed or floating purchase of forward CER/carbon credit stream

Nigerian company looking at various other projects to reduce emissions. Has opened up new business opportunities from the Carbon project development including Power Generation

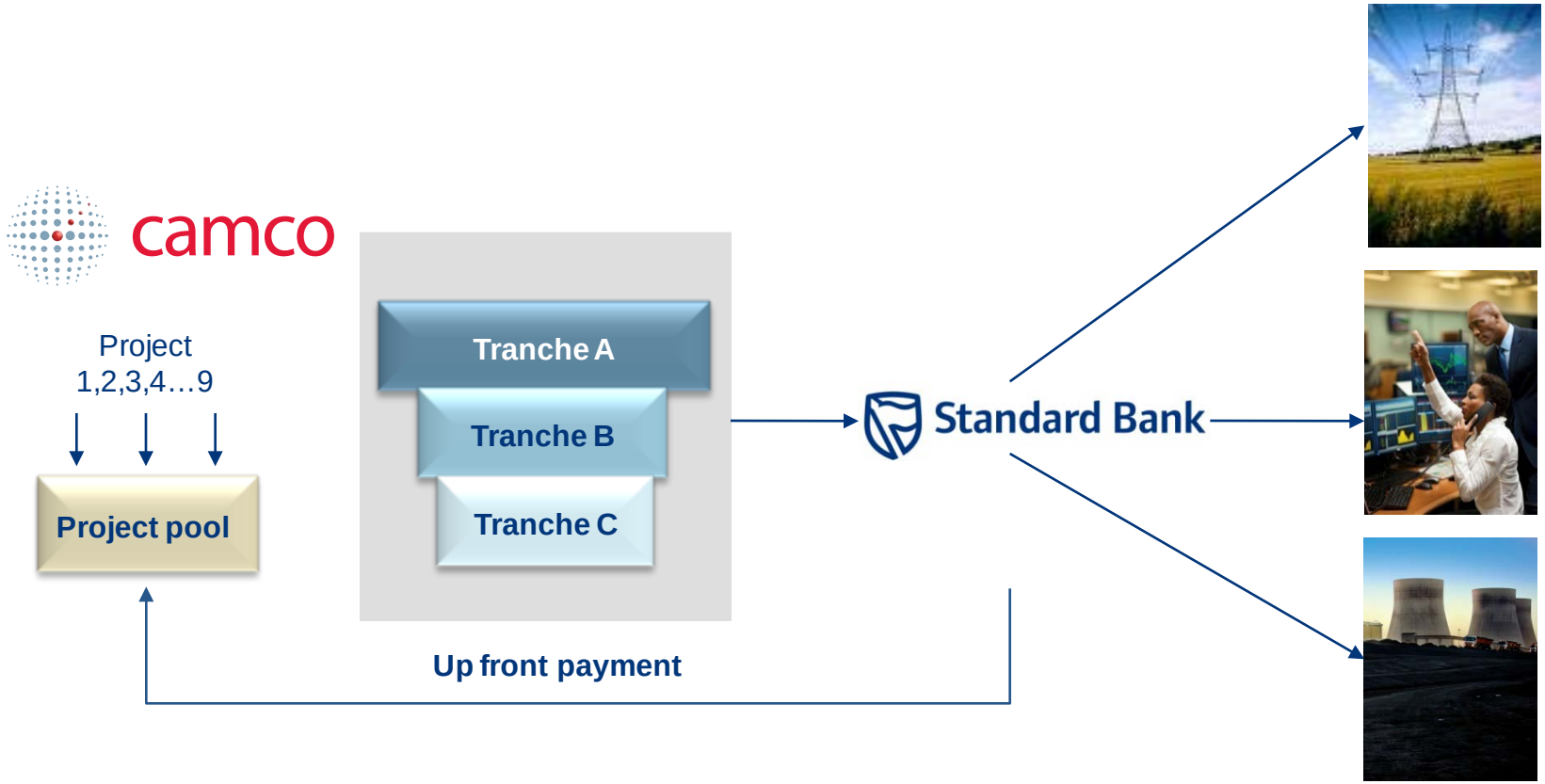
South African Energy Efficiency: Program of activities (POA)



- Standard Bank enters into contracts to purchase carbon credits from the implementation of energy efficiency projects with various building owners in South Africa via the Power Company
- These projects were registered under a PoA financed by Standard Bank. Building owners electing to register their energy efficiency projects under the PoA will sell CERs to SB

Case study: Structured product for project developer

- A “first to market” transaction where we assisted an aggregator of carbon credits (Camco), structured and placed a proportion of their primary credit portfolio in the market



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1. Overview of Standard Bank Group

Stanbic IBTC Bank
A member of Standard Bank Group

Standard Bank

Standard Bank Group

- 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 14 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$202 billion (December 2010)
- Market capitalisation of approximately US$26 billion (December 2010)
- Present in 32 countries around the world
- Employs over 53,000 people (including Liberty Life)

Standard Bank Group

Locations

- *Operates in 32 countries worldwide*
- *17 African countries*
- *15 countries outside Africa*
- *Universal banking capabilities*
- *Expanding global footprint*

Presence in 32 countries → **Focus on emerging markets** → **Universal banking model** → **CIB driving growth internationally**

Note: Hong Kong, Beijing and Shanghai are counted as part of China

Unrivalled presence in Africa

Key points

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

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

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

Standard Bank Group structure

Standard Bank Group Limited[1]

The Standard Bank of South Africa (SBSA)	Stanbic Africa Holdings	Standard International Holdings[2,3]	Standard Bank Offshore Group[3]	Liberty Life[4]
	West Africa Nigeria, Ghana	Standard Bank Plc London	Jersey	STANLIB[5]
	East Africa Kenya, Tanzania, Uganda, Malawi	SB Plc branches and representative offices	Isle of Man	
	Central Africa DRC, Angola, Zambia	Standard Bank Asia	Mauritius	
	Southern Africa Namibia, Botswana, Zimbabwe, Mozambique, Lesotho, Swaziland	Standard Bank Brazil		
	Indian Ocean Islands Mauritius	Standard Bank Argentina		
		Standard New York		
		Other entities/Partnerships (e.g., Standard Resources (China) Ltd, Standard Ünlü)		

1 Listed on the Johannesburg Stock Exchange
2 Regulated by the UK FSA
3 International operations
4 Investment Management & Life Insurance
5 Fund Manager

Asia: Strategic partnership with ICBC

Key facts and figures

- *ICBC has more than 385,000 employees*
- *Over 16,500 branches*
- *190 million personal clients*
- *3.1 million corporate clients*

- The Industrial & Commercial Bank of China Ltd (ICBC) bought a 20% strategic shareholding in Standard Bank in March 2008 for USD5.5 billion
  - Established a gateway between Africa and China
  - Accelerates the banks' respective international strategies
  - Provides support for Standard Bank's next phase of growth
  - Provides unrivalled access into China and its state owned enterprises ("SOEs")
  - Formal commitment to support Standard Bank's activities in Africa and other emerging markets, providing balance sheet access and syndication
  - Has facilitated strategic alliance with China Africa Development Fund
  - Facilitated co-operation principles with Sinosure for credit and trade guarantees
  - Partnerships established for fund management activities

Product capability

- ICBC is a full service universal bank

Key strengths

- Largest bank in the world by market capitalisation (2008)
- Market leader in all its businesses
- Strategically keen to grow in emerging markets and build on the significant China-Africa trade flow

Awards

The Banker 2009 Investment Banking Awards BEST INVESTMENT BANK FROM AFRICA	Standard Bank awarded 'Best Investment Bank in Africa 2009'
emeafinance	Best Investment Bank in Africa – EMEA Finance 2009
emeafinance	Best Investment Bank in Nigeria – EMEA Finance 2009
The Banker Bank of the Year 2009 AFRICA	The Banker Bank of the Year Africa, Botswana, Lesotho, Malawi, South Africa, Swaziland, Tanzania 2009
GTR LEADERS IN TRADE AWARDS 2009	Best Trade Finance Bank in sub-Saharan Africa 2009
pfi AWARDS 2009	Africa Power Deal of the Year – Morupule B 2009
GTR BEST DEALS OF 2009	Energy Resources , Mongolia Agro Traders Limited, Nigeria Wataniya Palestine Telecom

Awards (cont'd)

EUROMONEY ProjectFinance 2009 Deals of the Year	Morupule B – Africa Power Deal of the Year; Paladin Energy -Kayelekera Uranium Mine Africa Mining Deal of the Year; Lakatabu Expansion – Africa Industrial Deal of the Year; MTN Uganda – Africa Telecoms Deal of the Year; Zain – Middle East Telecoms Deal of the Year
2009 TRADE FINANCE Deal of the Year	Energy Resources (Mongolia) Agro Traders (Nigeria) Cocobod (Ghana)
emeafinance Achievement Awards 2009	Best Syndicated Loan Deal in CEE & CIS for Ukrexim's June 2009 EBRD Senior Unsecured A/B Syndicated Loan, 2009
emeafinance Achievement Awards 2009	Best Syndicated Loan Deal in Africa for Naspers $1.6 billion Forward Start Facility, 2009