

Carbon Finance and Renewable Energies

A good tool for sustainable development, if it works

Overview

1 About First Climate

2 What is Carbon Finance

3 Carbon Finance and Renewable Energies

4 Africa: The Next Destination for Investors

5 Barriers to RE in Africa

A leading carbon asset management company

- Assets under management (2008): EUR 235 million
- Turnover: EUR 42 million (2008)
- Projects under contract in the CDM, JI and VER pipeline: ~ 30 million tons
- Sales in the voluntary market to date: 3.5 million VERs
- offices on 5 continents
- 120 professionals
- Member of the
 - International Emissions Trading Association (IETA)
 - International Carbon Reduction and Offset Alliance (ICROA)
 - Carbon Markets and Investors Association (CMIA)
- Founding member of the Project Developers Forum

Global Player: Offices on 5 Continents

Washington D.C.

Paris

Luxembourg

Frankfurt

Zurich

Berlin

Warsaw

Hanoi

Beijing



Mexico

Santiago de Chile

Sao Paulo

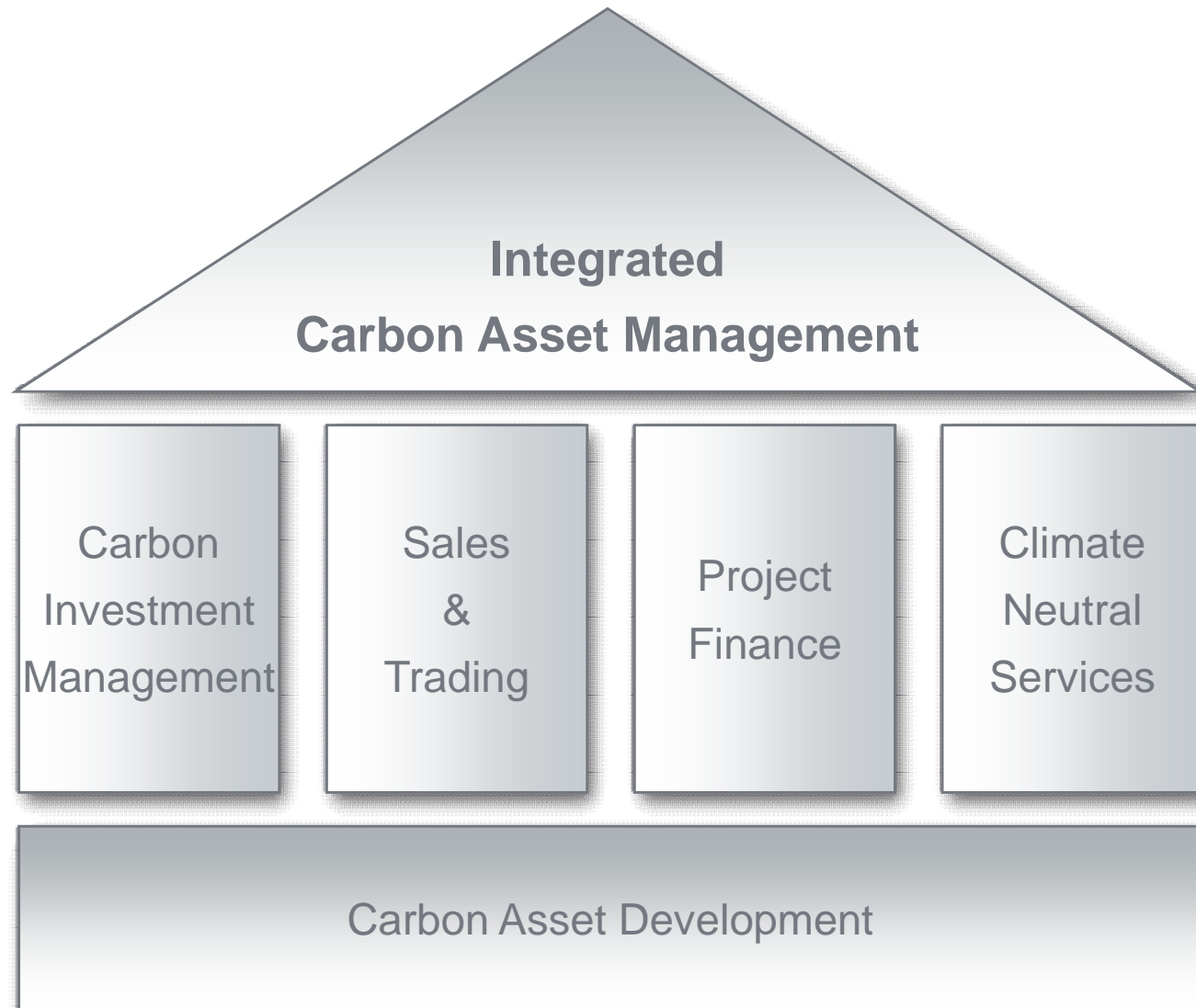
Mumbai

Kolkata

Singapore

Sydney

First Climate's Core Competencies



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What is the CDM?

The Kyoto Protocol

- The Kyoto Protocol (KP) categorized countries in:
 - Annex I with emissions reduction commitments (developed countries)
 - Non Annex I with no emissions reduction commitment (developing countries)
- Article 12 of the KP

„The purpose of the clean development mechanism shall be

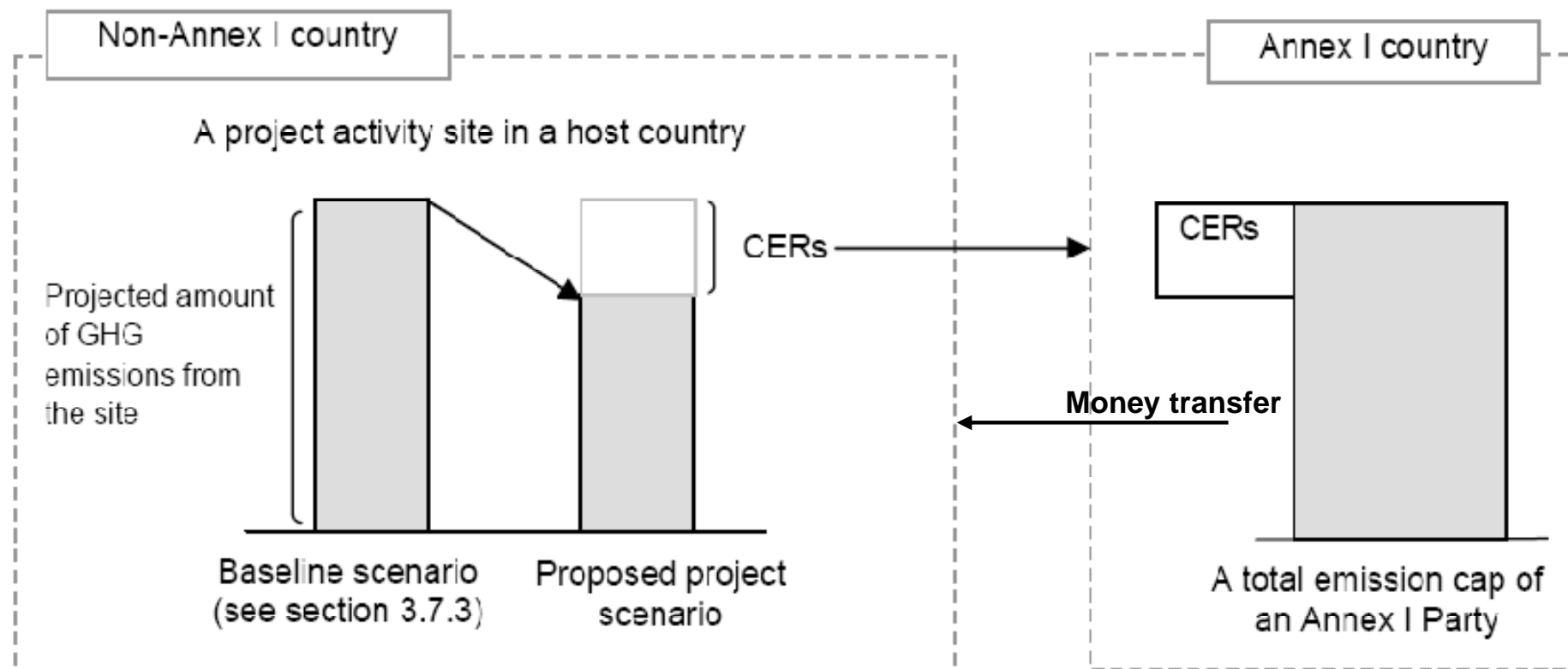
...to assist developing countries in achieving sustainable development [...] and ...

...to assist developed countries in achieving compliance with their quantified emission limitation and reduction commitments under the Protocol.”

What is the CDM?

The Mechanism

- It is all about **developing** projects that emit less GHGs emissions into the atmosphere and **trading** the „non-emitted“ GHGs
- The mechanism:



CDM - in a nutshell

A company subject to the EU ETS



e.g. EVU
in Germany

receives from state
free of charge

EU Allowances



according to the base line emission calculations

CDM - in a nutshell

Actual emissions and
allocated emission allowances are balanced



CDM - in a nutshell

Due to the 8% reduction by 2012, committed to by the EU,
a constant production amount will lead
to a successive imbalance:



CDM - in a nutshell

Three options:

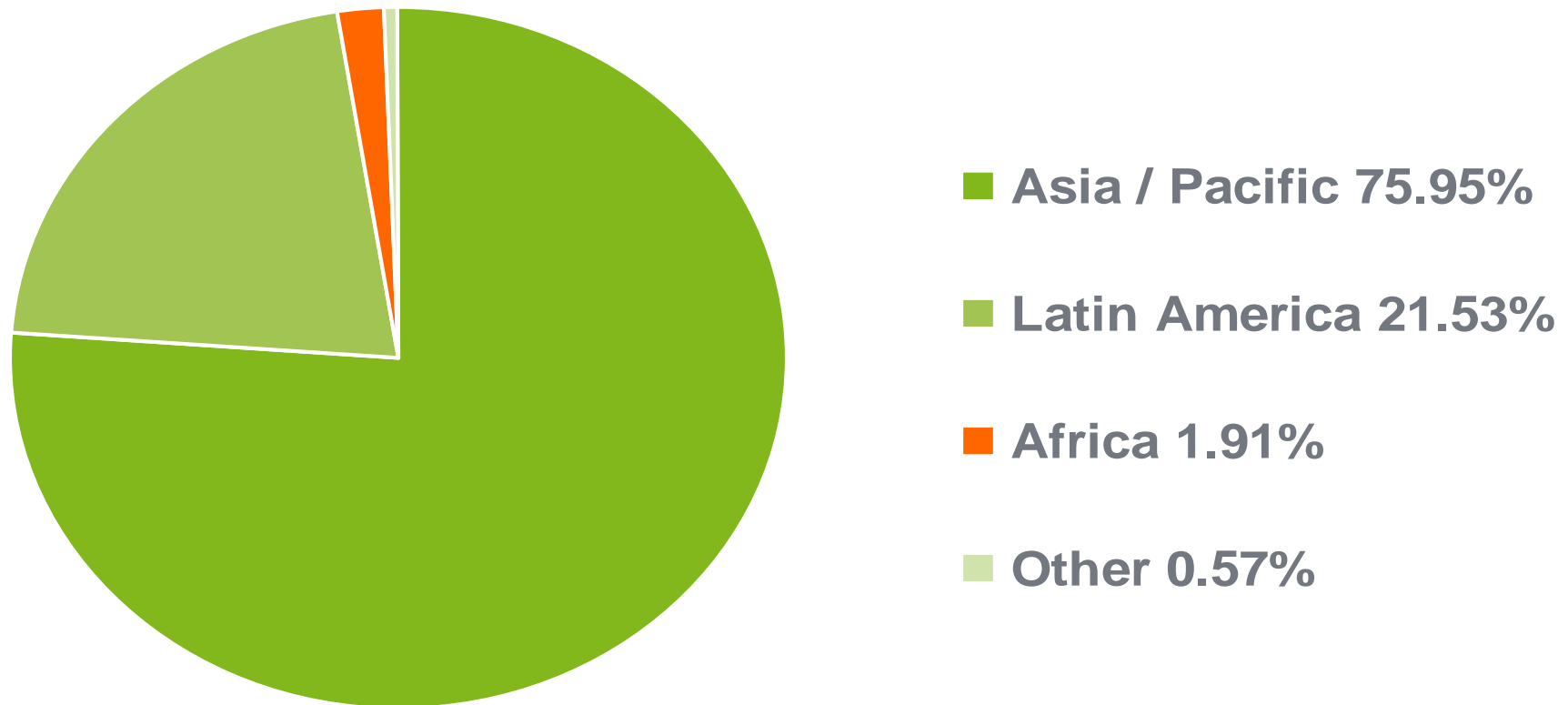
1. Reduction of own emissions
2. Purchase of additional EUAs
3. Generation of CERs / ERUs via project based mechanisms



CDM - in a nutshell



Africa's Share of the CDM Pie: Registered Projects



Source: UNFCCC, as of April 13, 2010

Overview

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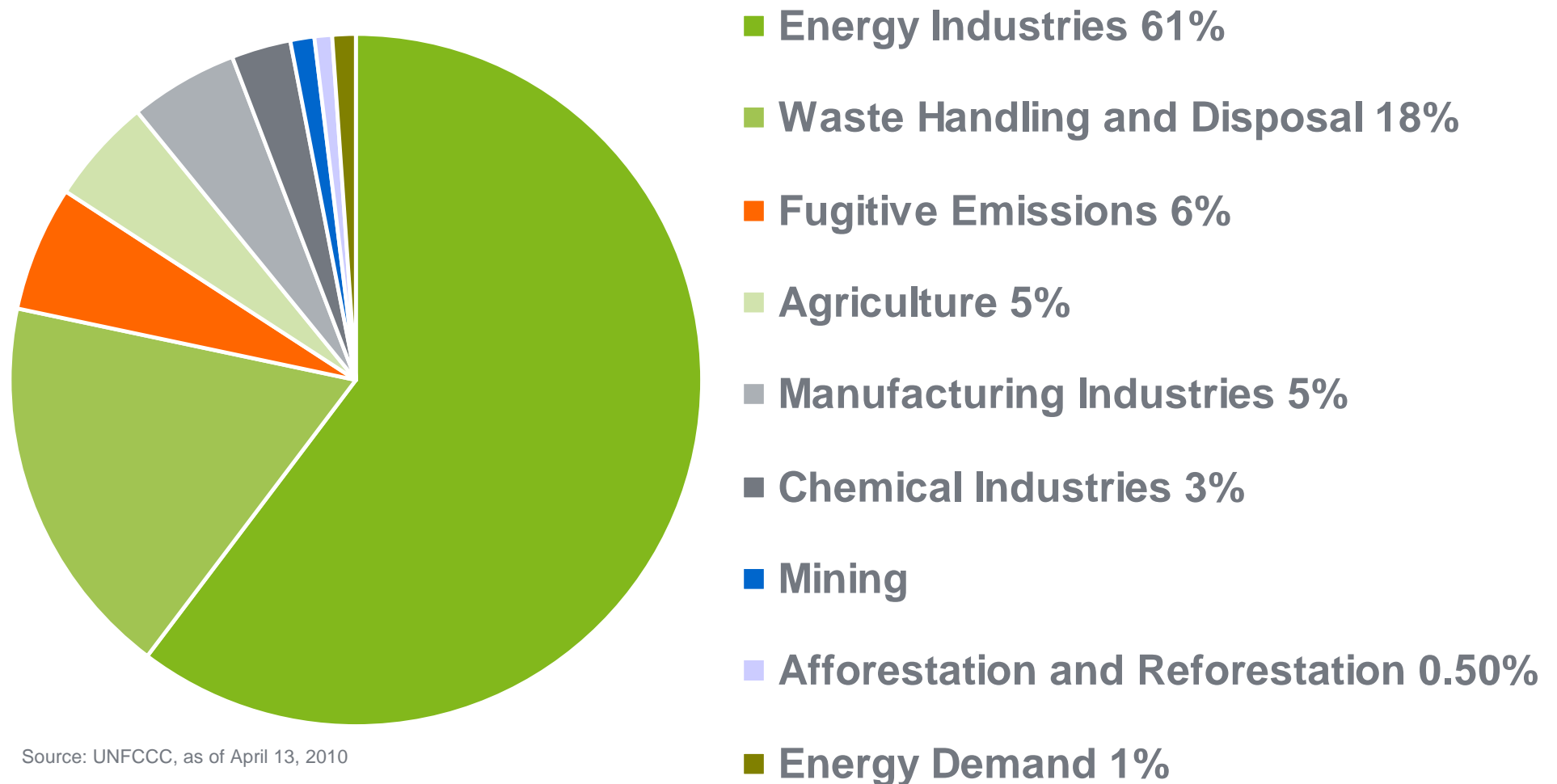
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CDM Breakdown by Technology



Source: UNFCCC, as of April 13, 2010

Example: 15MW Wind Farm Project

- 15 MW grid connected wind farm (4,000h average working time per year)
- Total investment ~ EUR 22.5 mln
- Emissions reductions through replacing CO2 intensive grid power with clean energy
- Annual emissions reductions: 48,000 t CO2 (EF = 0.7 tCO2/MWh)
- Crediting period 10 years, CER sales price (forward): EUR 10 / CER
- Tariff: 50€/MWh

Summary of the business	
Yearly return through electricity sales	EUR 3 mln
Yearly return through sales of CERs:	EUR 480,000
Yearly maintenance	EUR 50,000
Overall CDM project development cost (10 years)*	EUR ~ 150,000
IRR without CERs revenue	12.0%
IRR with CERs Revenue	16.0%

* Usually covered by the buyer of CERs

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Electricity Situation of Africa

	Electrification rate (%)			Population w/o elec. (millions)
	Total	Urban	Rural	
World	78	93	63	1,500
Africa	40	67	23	589
Sub-Saharan Africa	29	58	12	587
DR Congo*	11	25	4	57

Source: World Energy Outlook 2008

*Hydro potential can give electricity to Africa and beyond!!!

- **Black outs**
- **Uncontrolled off grid, generally diesel based**
- ...

Renewable Energies in Africa

Question: No energy + Potential = ?

- ~ 30% electrification on average in Sub-Saharan Africa
 - 50% Urban
 - 12% rural
- Huge and diverse potential (Hydro, Solar, Wind, Biomass)

My Answer: No energy + Potential = OPPORTUNITIES

- Need to build success stories

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CDM Related Barriers

CDM not a Panacea and very complex

- Not bringing more than 20% of underlying investment
- Not straight forward
 - 15 to 24 months development
 - Complex rules
 - Too many stakeholders involved
- Size projects very small in general
- Clarity missing for period after 2012

General Barriers

Will Africa ever make it?

- Infrastructure
- Feed-in tariffs
- IPP regulations
- PPA can take too long
- No real local support
 - No local consultant for data collection
 - No strong investment banks
- Data (when they exist!!!) difficult to collect
- FDI climate of SSA countries
- Risk perception too high
- Development agencies
 - Mindset of “how much” and forgetting the “how”
 - Developing lab solutions that don’t always meet the reality

Concluding remarks

Nothing starts perfect

- People need energy in Africa to develop
- The potential is huge and diverse
- Investors are “ready” (have to?) to go to Africa
- Many mechanisms exist and are being developed
- Africa is fighting to catch the train of sustainable development
- Overcoming existing barriers is challenging
- ...

I believe Africa will see bright days when development initiatives will ALWAYS be combined with business

Contact



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