DNA CDM Workshop

Global Carbon Market Analysis and CDM

Pretoria, 19 May 2011
Agenda

• The History of CDM
• The Carbon Markets
• Emissions Trading – The EU ETS
• Carbon markets & price impacts
• Good CDM projects
Background

UNFCCC (1992)

Kyoto Protocol (1997)

Climate Protection

Voluntary Market

UNFCCC (1992)

Kyoto Protocol (1997)

Joint Implementation (JI)
Art. 6 Kyoto Protocol

Emission based

Clean Development Mechanism (CDM)
Art. 12 Kyoto Protocol

Project based

International Emission Trading (IET)
Art. 17 Kyoto Protocol

Trading of AAUs between Annex-I Countries

European Climate Change Program (ECCP)

EU Emission Trading Scheme (EUETS) since 2005

Trading of EUAs between energy intensive companies in the EU

CEF Carbon (Pty) Ltd. (RSA) and CEF Carbon Ltd. (UK) are subsidiaries of CEF (Pty) Ltd.
Basic Principles of CDM

Annex 1 Countries (Developed)
Investor Countries can provide financing & sustainable development for compliance

Non-Annex 1 Countries (Developing)
Host countries produce CERs by mitigating CO2 through emission reduction projects
Project Types

Renewable Energy
(Wind, Hydro, Solar, etc)

Waste Management
(LFGTE, Waste Heat Capture & Reutilization, etc)

Energy Efficiency
(CFL, SWH, etc)

Some questions???
- Will it reduce GHG emissions?
- What will it be displacing?
- What is the proposed technology?
- What is the project boundary?

Is there, does it, is it.....??
- an approved CDM methodology
- meet the Sustainable Development criteria (ESE)
- Additional
The EU Emissions Trading Scheme

Voluntary Market

UNFCCC (1992)

Kyoto Protocol (1997)

Climate Protection

Project based

Clean Development Mechanism (CDM)
Art. 12 Kyoto Protocol
Between Annex-I and non-Annex-I Countries

Joint Implementation (JI)
Art. 6 Kyoto Protocol

Emission based

International Emission Trading (IET)
Art. 17 Kyoto Protocol
Trading of AAUs between Annex-I Countries

European Climate Change Program (ECCP)

EU Emission Trading Scheme (EUETS) since 2005
Trading of EUAs between energy intensive companies in the EU
Commenced operation in January 2005
Based on a Cap-and-Trade principle
Operates in over 30 countries
3 phases (P1: 2005 to 2008; P2 - 2008 to 2012; P3- 2012 to 2020...busy discussing P4)
CDM/JI credits introduced in Phase 2 (2008 to 2012)
The success of the EU ETS has inspired other countries and regions to launch their own cap and trade schemes.
Future potential exists to link the EU ETS into other compatible trading schemes globally.
The EU ETS cont..
Carbon Markets Participants

Participants
- Annex-1 Countries: governments & compliance buyers
- EU ETS market participants
- Non European Speculative Companies
- CDM/JI Project Owners, Developers and Consultants in Non Annex-1 countries

Markets
- London as the major trading hub
- EU ETS
- IET
- Global Voluntary markets
- Japan, USA, NZ, Australia (localized)
# Market Figures

## EU ETS Phase I (2005 – 2007)
- +/- 2bn allowances allocated yearly in EU ETS
- 2005&2006 markets 130 MM+ tons long
- Phase 1 Low price Dec. 2007: €0.01
- Phase 1 High Price Apr. 2006: €31
- 70% OTC/30% Exchange
- $50B in 2007

## EU ETS Phase II (2008 – 2012)
- +/- 2bn allowances allocated yearly in EU ETS
- Phase 2 Low price Nov. 2008: €9.00
- Phase 2 High Price Jul. 2008: €30.6
- $90B in 2008
- $118B in 2009

## Global Carbon Market Size
- $400M in 2004
- $10B in 2005
- $30B in 2006
- $63B in 2007
- $122B in 2008
- $125B in 2009
- Estimated $3.5T in 2020

Source: New Energy Finance & World Bank Report
Carbon Credits

- “a certificate showing that a government or company has paid to have a certain amount of carbon dioxide removed from the environment” (Collins Dictionary)
- For trading purposes, one credit or CER is considered equivalent to one metric ton of CO$_2$
- Sold privately or on international markets at prevailing market price (quoted in € per tCO2e)
- Currently: 6 Exchanges trading in carbon credits
- Create a market for reducing GHG emissions by giving a monetary value to the cost of polluting the air
# Carbon Credit Types

<table>
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<tr>
<th>Participant Eligibility</th>
<th>Emissions Trading Scheme</th>
<th>Carbon Credit Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sovereign &amp; Private</td>
<td>JI (Joint Implementation)</td>
<td>ERUs (Emission Reduction Units)</td>
</tr>
<tr>
<td><strong>Sovereign &amp; Private</strong></td>
<td><strong>CDM</strong> <em>(Clean Development Mechanism)</em></td>
<td><strong>CERs</strong> <em>(Certified Emission Reductions)</em></td>
</tr>
<tr>
<td>Sovereign &amp; Private</td>
<td>EU ETS <em>(EU Emissions Trading Scheme)</em></td>
<td>EUAs <em>(EU Allowances)</em></td>
</tr>
<tr>
<td>Sovereign</td>
<td>IET <em>(International Emissions Trading)</em></td>
<td>AAUs <em>(Assigned Amount Units)</em></td>
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</tbody>
</table>
Factors affecting Carbon Prices

- EUA Prices
- NAPs 2nd period
- JI/CDM Import
- CO2 Abatement Costs
- Technology Development Economies of scale
- Oil & Fuel Prices
- Policies
- Coverage Other Sectors & GHGs
- Economic Growth
- Weather
- Liquidity
- Economic Growth
- Coverage Other Sectors & GHGs
- Oil & Fuel Prices
- Technology Development Economies of scale
- CO2 Abatement Costs
- JI/CDM Import
- NAPs 2nd period
- EUA Prices

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# Risk vs. Price

<table>
<thead>
<tr>
<th>Project Stages</th>
<th>CDM Project Risks</th>
<th>Project risk vs Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIN</td>
<td>Initial Stage Failure Risk</td>
<td>-High project risk</td>
</tr>
<tr>
<td>PDD</td>
<td>Methodology Risk</td>
<td>-Need for financing</td>
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<tr>
<td>Validation</td>
<td>Validation Risk</td>
<td></td>
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<tr>
<td>Host Country Approval</td>
<td>Host Country Regulatory Risk</td>
<td>-Lower price</td>
</tr>
<tr>
<td>Registration</td>
<td>Registration Risk</td>
<td>-but assistance in</td>
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<td></td>
<td></td>
<td>financing and</td>
</tr>
<tr>
<td>Project Operation</td>
<td>Performance and Technology Risk</td>
<td>development</td>
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<tr>
<td>Verification</td>
<td>Monitoring Risk</td>
<td></td>
</tr>
<tr>
<td>Issuance</td>
<td>Issuance Risk</td>
<td></td>
</tr>
<tr>
<td>Transfer and Payment</td>
<td>Counterparty, Delivery and Market Risk</td>
<td>Higher price</td>
</tr>
</tbody>
</table>

Primary prices depend on the risk sharing between the Buyer and the Seller.
Price Volatility

Phase II EUA & CER: Price Action

Current Value: €11,080,000
Current Value: €12,580,000
Current Value: €13,400,000

Source: Evolution Markets
Attractive CDM projects

• Favourable host country & good investment climate

• ‘Safe’ projects
  (eg. renewables, EE, fuel switching waste vs CCS, HFC’s, Wind in China!)

• Strong partnerships: technology, finance, management

• High probability of project completion/ CDM registration

• Quality projects!
Conclusion

- Despite post 2012 uncertainty, the market continues to evolve and grow.
- The market is large, but the price signal too low to trigger significant investment decisions for low carbon technologies.
- Obligations for EU participants indicated a continued demand for market continuity.
- Opportunities for emission reduction in Africa exist.
- Local and innovative solutions being developed.
- Carbon financing options exist.
- This market is creating ‘green collar’ jobs.
- Business now considering Carbon in their balance sheets.
- SA to move away from being a supplier of CERs?
- Cap and Trade or carbon taxes?
Thank you!

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