



Panel Discussion Project finance and methane capture and use projects

Project Finance Workshop Methane to Markets Meeting Buenos Aires, 3 November 2005

Project finance and methane capture and use projects

- Types of projects and potential emission reductions
- Project finance and carbon finance
- Barriers to traditional project finance and proposed solutions
- Creative project finance structures and opportunities
- Impacts of carbon finance in project finance

Types of emission reduction projects

1. Landfill gas (LFG)

- Produce electricity
- Process the LFG and make it available as alternative fuel for industrial customers
- Create a pipeline quality gas or alternative vehicle fuel with LFG

2. Natural gas and oil systems

- Technology and equipment upgrades
- Improved management practices and operational procedures

3. Underground coal mines

 Natural gas pipeline injection, electric power production, district heating, mine heating, flaring, etc.

Types of financing

 Project financing: finance investment and construction, operation and maintenence costs

Carbon financing:

- Revenue from sale of carbon credits
- Additional revenue provides a "boost" to project (becomes more attractive)
- E.g. Typical contribution CDM: 5 –15 % total project cost

Barriers to traditional project finance

• What are the barriers?

• How to overcome those barriers?

Emission reduction project - finance structures

- What are the different finance structures?
- What is an Emissions Reductions Purchase Agreement (ERPA)?
- How do carbon credits affect investment in Equity?
- How do carbon credits affect investment in Debt?

Impacts of carbon finance in project finance

- How do 'carbon credits' affect IRR of projects?
- What is the leverage effect on project finance?
- What are the risks of carbon finance?
- How do you mitigate the risk?

Annexes

Types of Financiers

- Carbon funds and facilities
- Government programmes
- Development banks and multinational institutions
- International commercial banks

Carbon funds and facilities

MULTI-SHAREHOLDER PRIVATE-GOVERNMENT FUNDS

PRIVATE SHAREHOLDER FUNDS

MANAGED BY DEVELOPMENT BANKS

- Prototype Carbon Fund*
- •Community Development Carbon Fund*
- BioCarbon Fund*
- Italian Carbon Fund*
- Danish Carbon Fund*
- Spanish Carbon Fund*
- Multilateral Carbon Credit Fund*
- Carbon Fund for Europe*

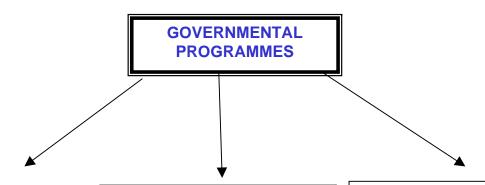
MANAGED BY COMPANIES

- •Japan GHG Reduction Fund*
- KfW Carbon Fund
- Baltic Sea Region Testing Ground Facility (TGF)
- EcoSecurities- JapanCarbon Finance Fund*

MANAGED BY COMPANIES

- Natsource Greenhouse Gas-Credit Aggregation Pool
- •European Carbon Fund
- •ICECAP
- Trading Emissions plc
- Merzbach Mezzanine Carbon Fund 1 (MMF1)
- Climate Change Capital Multistrategy Carbon Fund

Government programmes



MANAGED BY DEVELOPMENT BANKS

- Netherlands CDM Facility
- CAF-Netherlands CDM Facility
- Netherlands European Carbon Facility
- IFC-Netherlands Carbon Facility
- Netherlands EBRD Carbon
 Fund

MANAGED BY COMPANIES

- Rabobank- Dutch
 Government Agreement
- EcoSecurities- Standard Bank Denmark Carbon Facility
- Austrian CDM Small-Scale Project Facility
- Austria- Kommunalkredit Public Consulting JI/CDM Tender

MANAGED BY GOVERNMENT AGENCIES

- ERUPT/ CERUPT tenders
- Swedish International Climate Investment programme
- Danish Carbon.dk Public Procurement Programme
- Canada's Climate Fund (not yet in operation)
- Finnish JI/CDM tender
- Flemish Government JI/CDM tender
- Belgian JI/CDM tender
- New Zealand tender

Development banks and multinational institutions

- Asian Development Bank (ADB)
- European Bank for Reconstruction and Development (EBRD private sector / public sector)
- European Investment Bank (EIB)
- Inter-American Development Bank (IADB)
- World Bank (International Bank for Reconstruction and Development –IBRD and the International Development Association-IDA)
- International Finance Corporation (IFC)
- Mulitilateral Investment Guarantee Agency (MIGA)
- Corporation Andina de Fomento (CAF)
- Nordic Environment Finance Corporation (NEFCO)
- Nordic Investment Bank

International commercial banks

Project loans

- Citigroup
- BNP Paribas
- Credit Suisse First Boston
- Royal Bank of Scotland
- Societe Generale
- Sumitomo Mitsui
- Bank of Tokyo Mitsubishi
- HSBC
- Korea Development Bank
- ABN AMRO

Project equity

- Lehman Brothers
- Citigroup
- Goldman Sachs
- Societe Generale
- HSBC
- Credit Suisse First Boston
- Calyon
- Deutsche Bank
- JP Morgan
- Royal Bank of Canada

Emission reduction project - finance structures

1. Emissions Reductions Purchase Agreement (ERPA)

- E.g. in the case of CDM/JI under the Kyoto Protocol buying of emission reductions of project – Investor developed country (Annex 1)
- Direct buyer or 'Carbon Fund'

2. Investment in Equity

 Investor (Annex 1)/local: total or partial financing of project in exchange for total/portion of financial revenues and carbon credits

3. Debt - Loans

 Investor Annex 1 provides loans at concessional rates in exchange for carbon credits / carbon credits as a loan guarantee