



Private Financing for Certified Emission Reductions

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Cold Weather Fires Up

Carbon Market

- FINANCIAL TIMES Feb 24 2005 -

“Carbon reached €9 (\$12) a tonne, a record price since the market became truly liquid with the launch of the European Union's greenhouse gas emissions trading scheme in January.”



Separate Issues

Certification

Financing

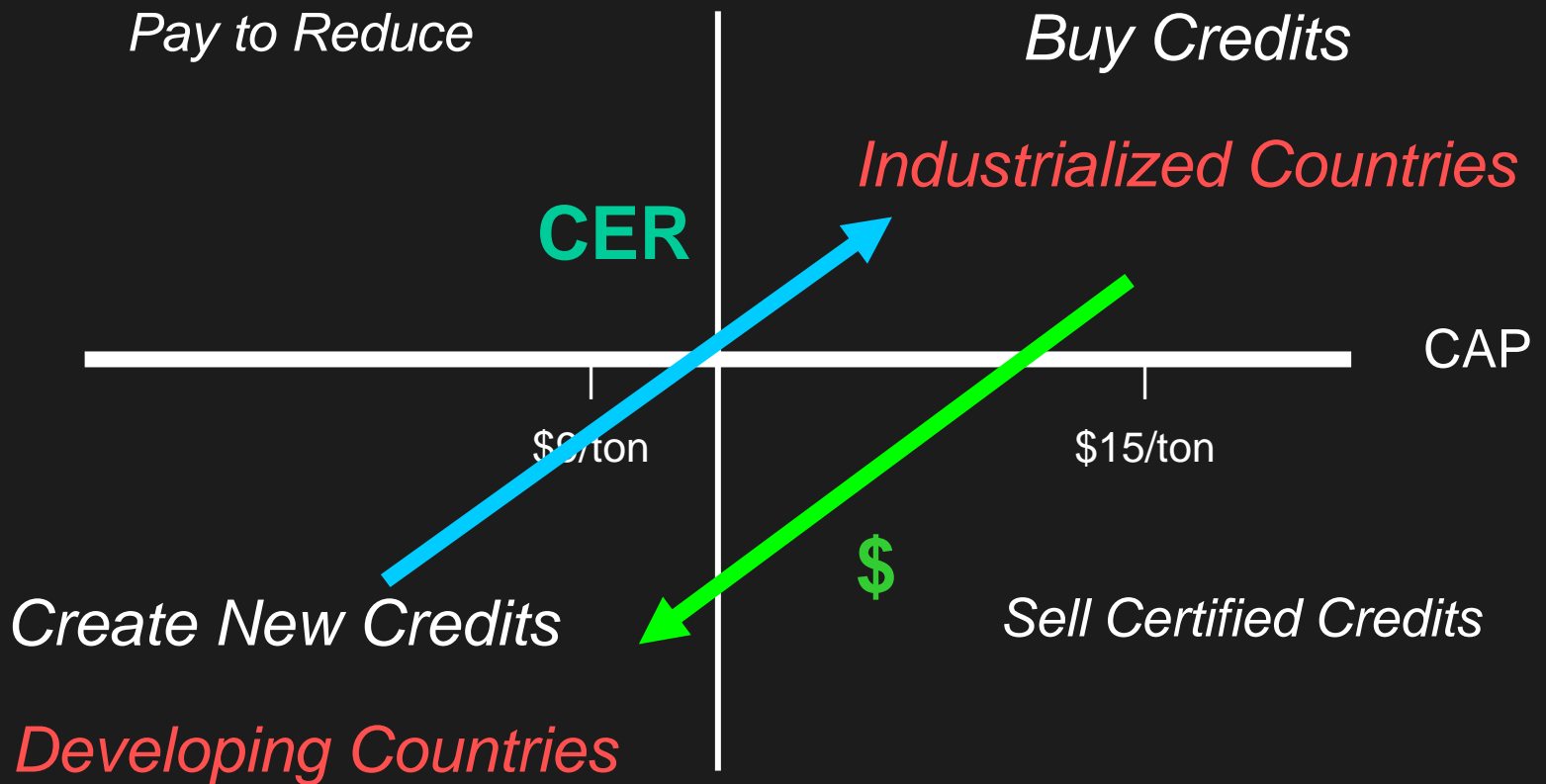


Financing

- It's all about -

RISK CONTROL

Clean Development Mechanism



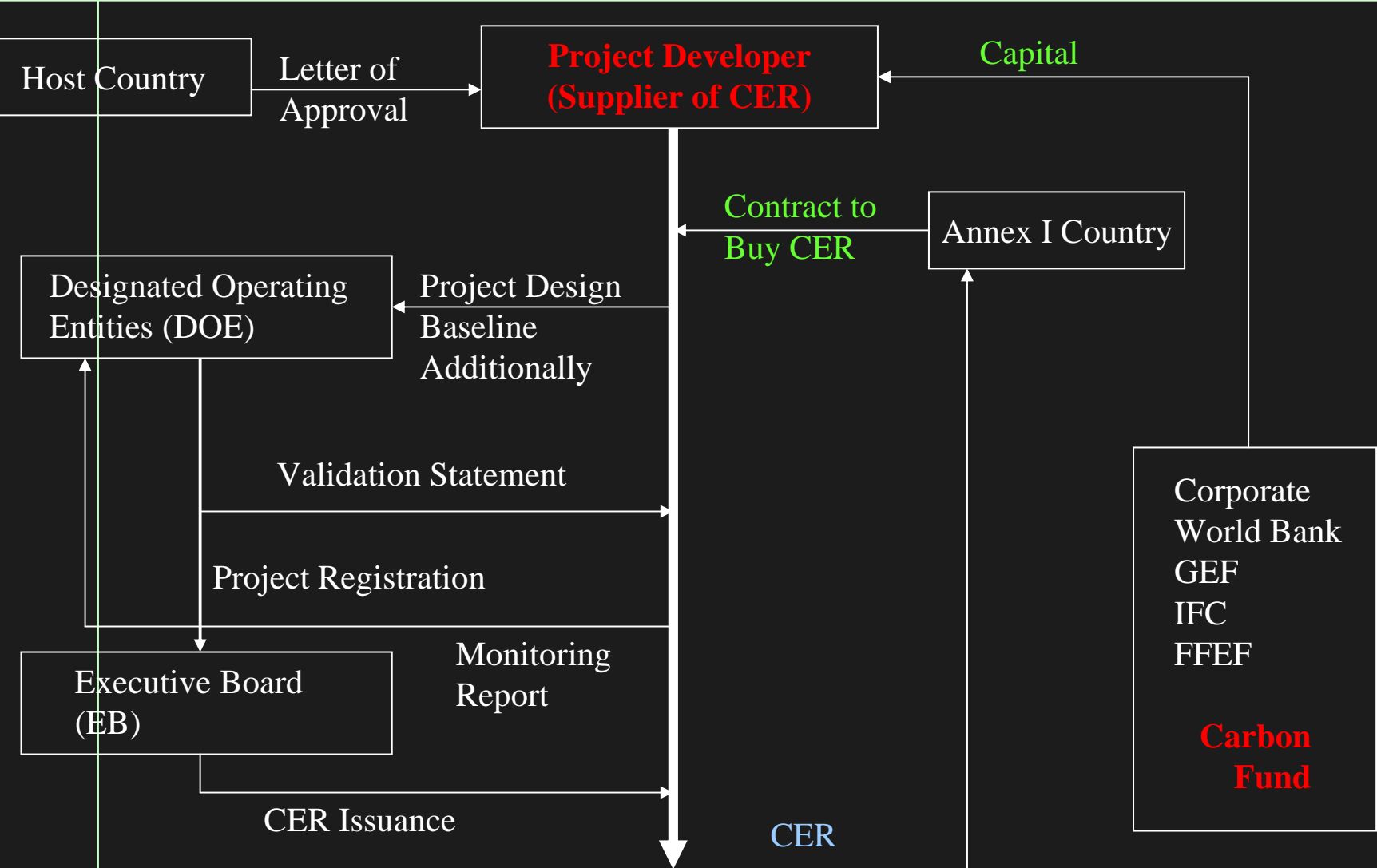


Role of Energy Modelers

CERTIFICATION

- Approved methodologies
- Estimates of carbon emission reductions
- New ideas for carbon reduction
 - Technologies (solar, biomass, MSW)
 - Policies (conservation)

Development of a CDM Project



The Wrong Way !



- POOR RISK CONTROL
- WEAK LEGAL STANDING
- NO MARKET FOR TRADING
- INFLEXIBLE



The Wrong Way

- Requiring a new carbon fund with rules for pro rata participation in the partnership.
There are already thousands of hedge funds around the world !
- Using a long-term contract (ERPA).
This is a very old model from the electric grid.
Electricity is now *TRADED*.



Corporate Carbon Bonds

- Price € 1000
- Coupon 16 tons CO2e annual
- Maturity 15 years

Corporate Carbon Bonds



- RISK CONTROL BY DIVERSIFICATION
- SUPERIOR LEGAL STANDING
- WORLDWIDE MARKET FOR TRADING
- FLEXIBLE



Corporate Carbon Bonds

- Company secures the obligation.
 - general obligation or “designated”
 - may re-certify or purchase certified
- Corporation diversifies purchases.
 - buy/sell bonds as needed
- Hedge funds use for capital appreciation.
 - CO₂e supply/demand trading



Corporate Carbon Bonds

Company: Palm Oil Electricity Plant

€ 15 million capital cost

10 million kWh

56 thousand tons CO₂e certified

Carbon Bonds

€ 1000

16 tons CO₂e

15 year

Current yield 11.6%

Syndicated bond issue: € 3.5 million



Innovative Carbon Securities

- **Corporate Carbon Bonds**
- *Equity*
- *SWAP contracts (replacing ERPA)*
- *Corporate General Obligation Bonds*
- *Warrants*
- *Participating Preferred Stock*



Private Financing

- Venture capital
- Private investment bank
- IPO firms
- Hedge funds

Capital appreciation

Syndication fees



Summary

- It will be private capital not public monies that provides CO2e reduction.
- Private capital is attracted by the possibilities for capital appreciation.
- Carbon must become a security – subject to trading, risk control and capital growth.

- Corporate Carbon Bonds -

A1. Corporate Carbon Bond

Price €1,000
Coupon 16 ton CO₂e
Maturity 15 years

Year	€ 1,000 Price	
1	16 tons CO ₂ e annual	€ 144.00
2	16 tons CO ₂ e annual	€ 144.00
3	16 tons CO ₂ e annual	€ 144.00
4	16 tons CO ₂ e annual	€ 144.00
5	16 tons CO ₂ e annual	€ 144.00
6	16 tons CO ₂ e annual	€ 144.00
7	16 tons CO ₂ e annual	€ 144.00
8	16 tons CO ₂ e annual	€ 144.00
9	16 tons CO ₂ e annual	€ 144.00
10	16 tons CO ₂ e annual	€ 144.00
11	16 tons CO ₂ e annual	€ 144.00
12	16 tons CO ₂ e annual	€ 144.00
13	16 tons CO ₂ e annual	€ 144.00
14	16 tons CO ₂ e annual	€ 144.00
15	16 tons CO ₂ e annual	€ 144.00

Market CO₂e € 9.00 /ton CO₂e
Bond Yield 11.6%