



BNP PARIBAS
CORPORATE & INVESTMENT BANKING

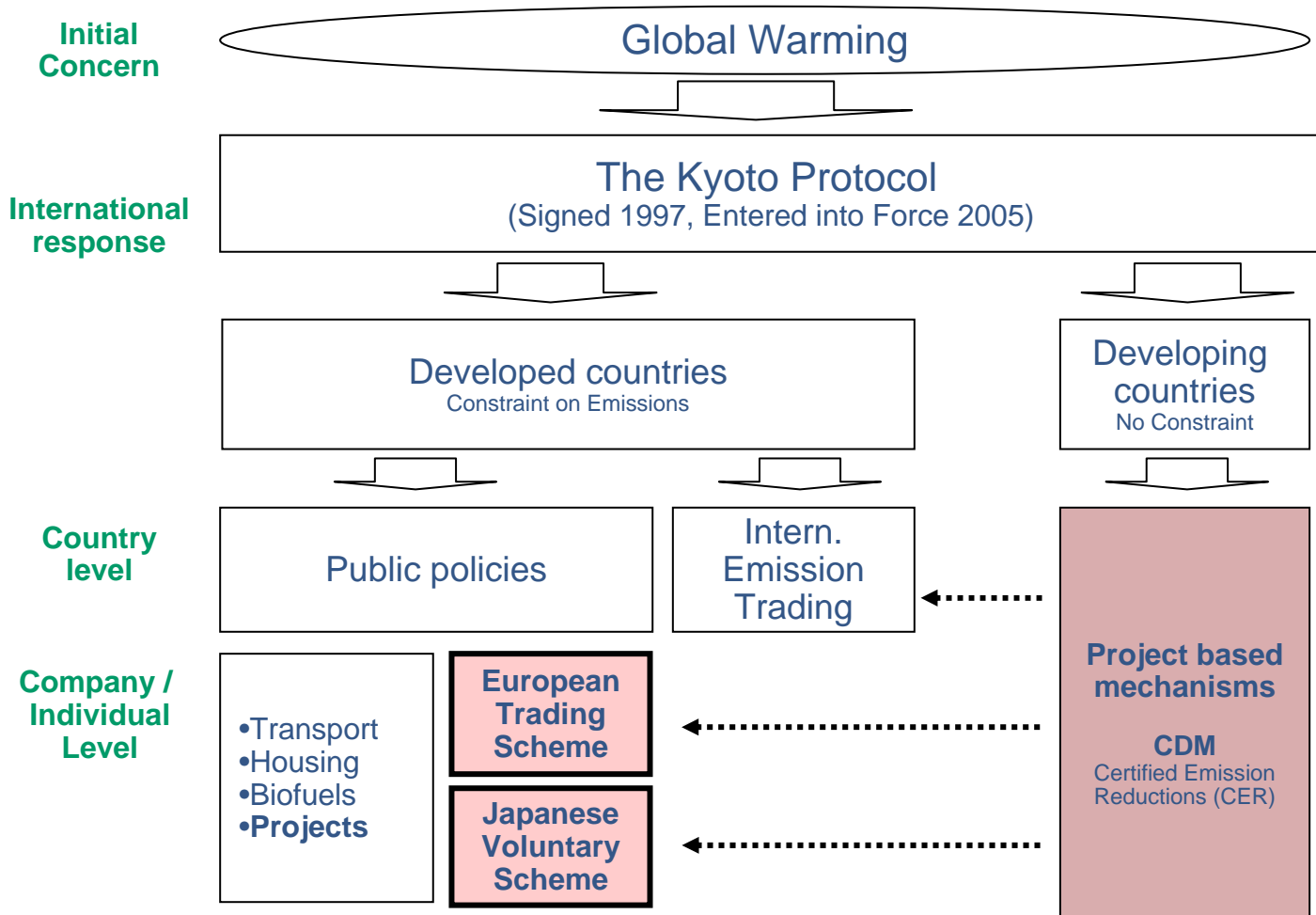


Emissions markets

New assets, new constraints, new opportunities

What are the Carbon Markets?

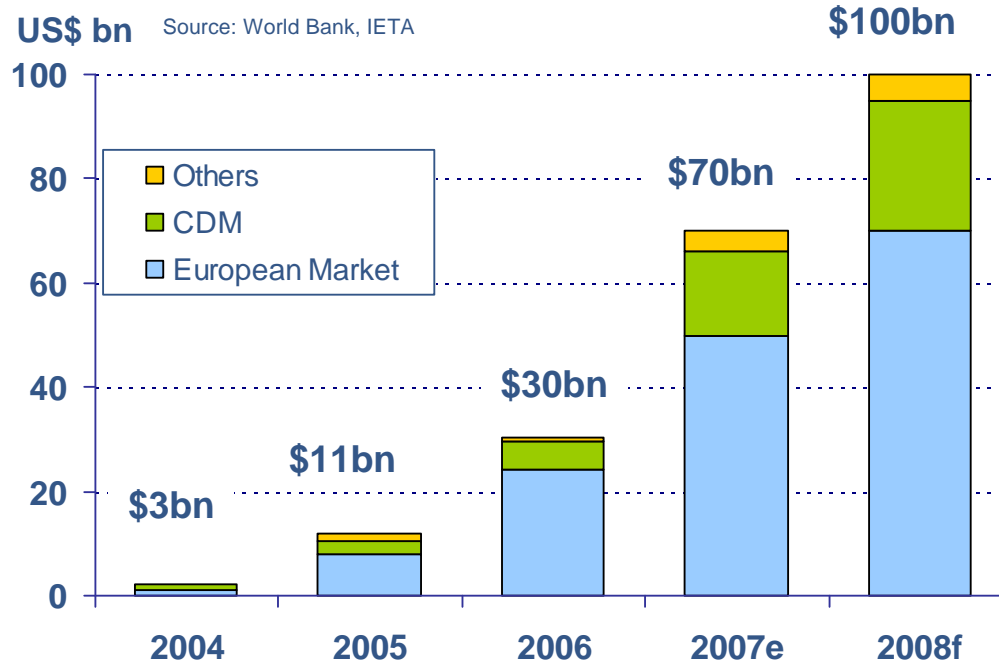
A set of tools to curb greenhouse Gases emissions...



- Different assets**
- EU ETS trades EUA – European Union Allowances
 - CDM (Clean development mechanism) generated CER (Certified Emission Reductions)
 - IET (International Emission Trading Scheme trades AAU (Assigned Amount Units)

Carbon Markets... an exponentially growing traded market

Carbon transactions reached US\$70bn in 2007 and are expected USD100bn in 2008...



...with more volumes and markets to come

Australian, Japanese and NZ market (2008)

Voluntary markets (2008)

Government market (2008)

Aviation and shipping (2012)

US and Canada market (2012)

Global carbon markets have the potential to see a total market value of some two trillion dollars with the majority being the European and US trading markets



A banker point of view on Carbon assets

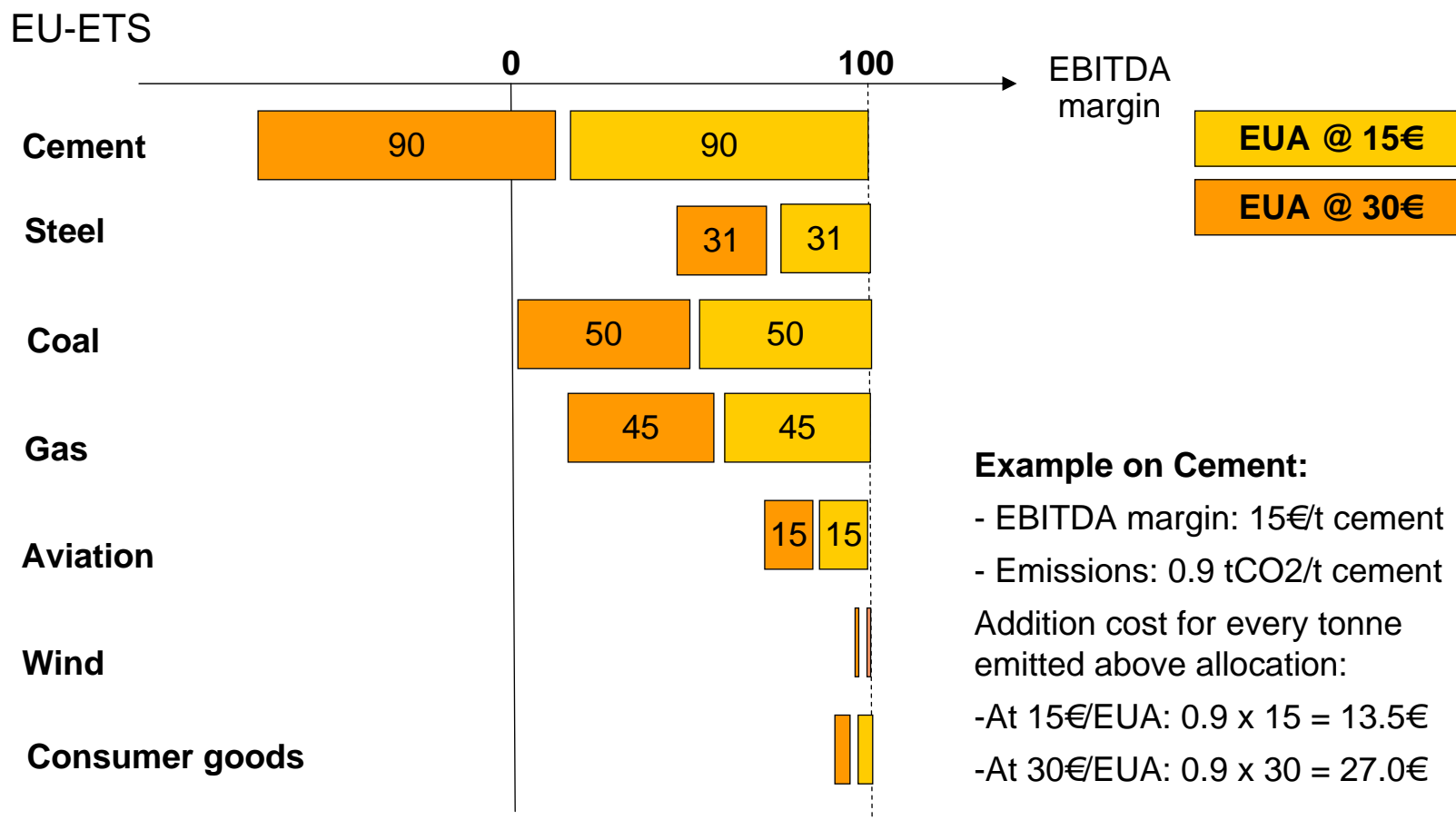
- A monetary asset ?
 - Sovereign
 - Clear ownership right
 - Easily transferable

- A Commodity?
 - Both input and output of production
 - Can be traded in bulk

- An hybrid status that allowed to a quick and broad trading



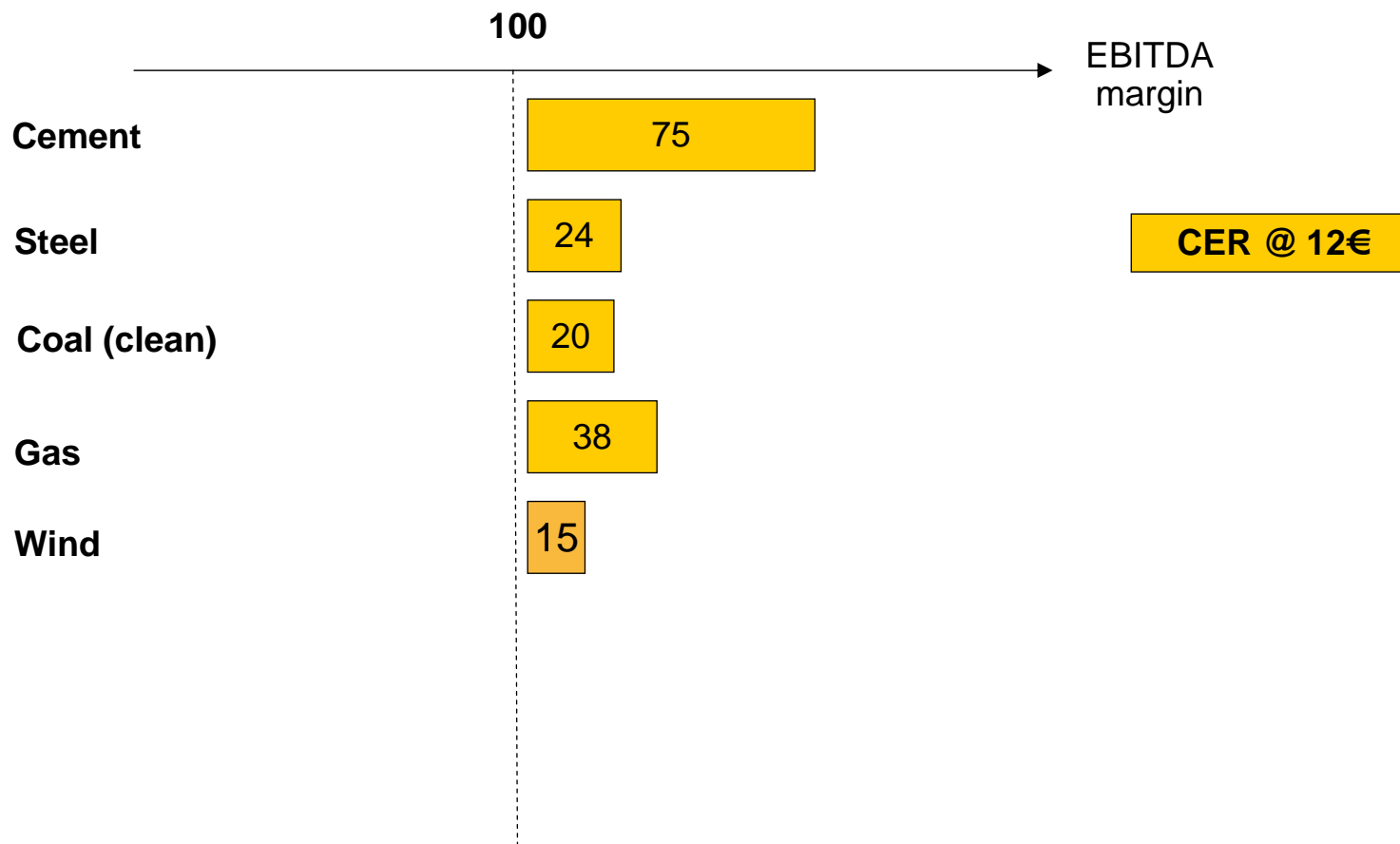
CO2 has a significant impact on operational margin...



In the case of installations facing mandatory reduction targets, this can be a cost which must be absorbed or passed through to consumers...

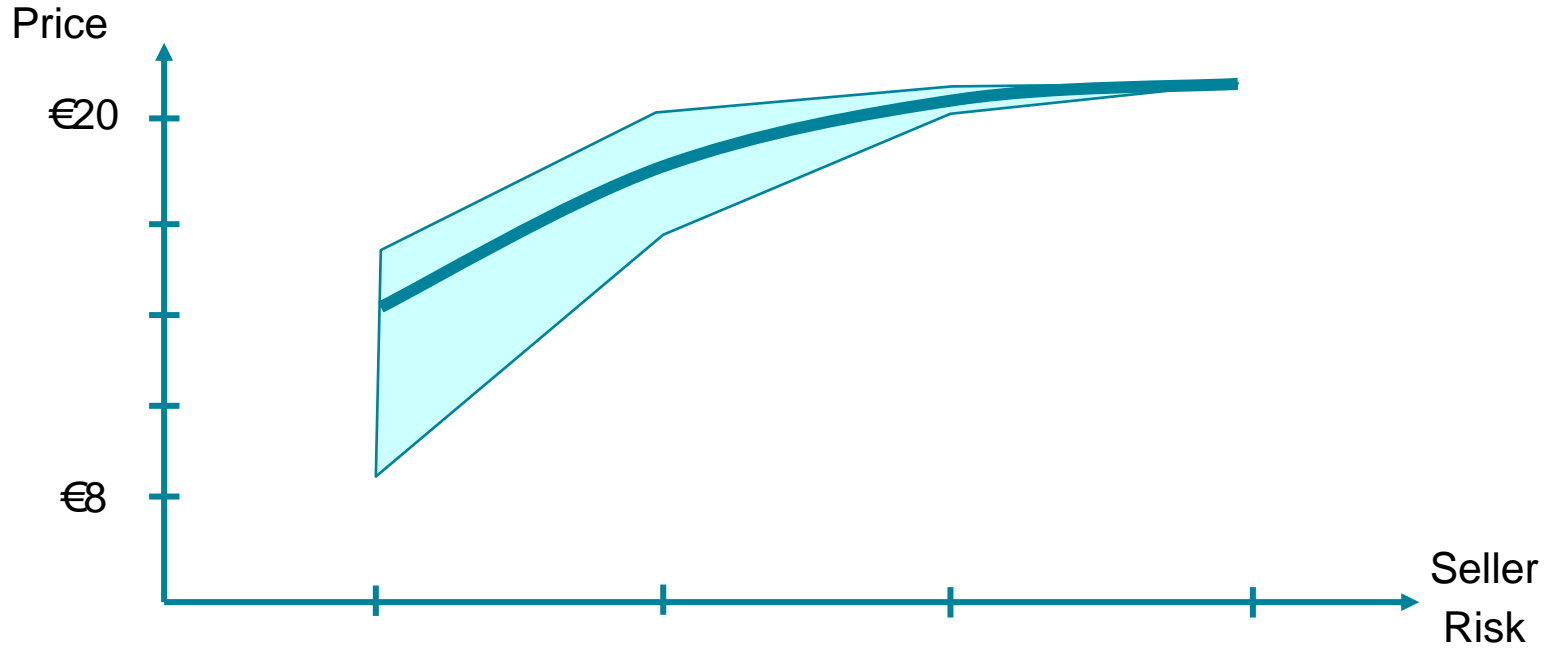


But this can also be positive



...But in the case of installations NOT covered by mandatory compliance targets, carbon pricing make a significant contribution to the bottom line!

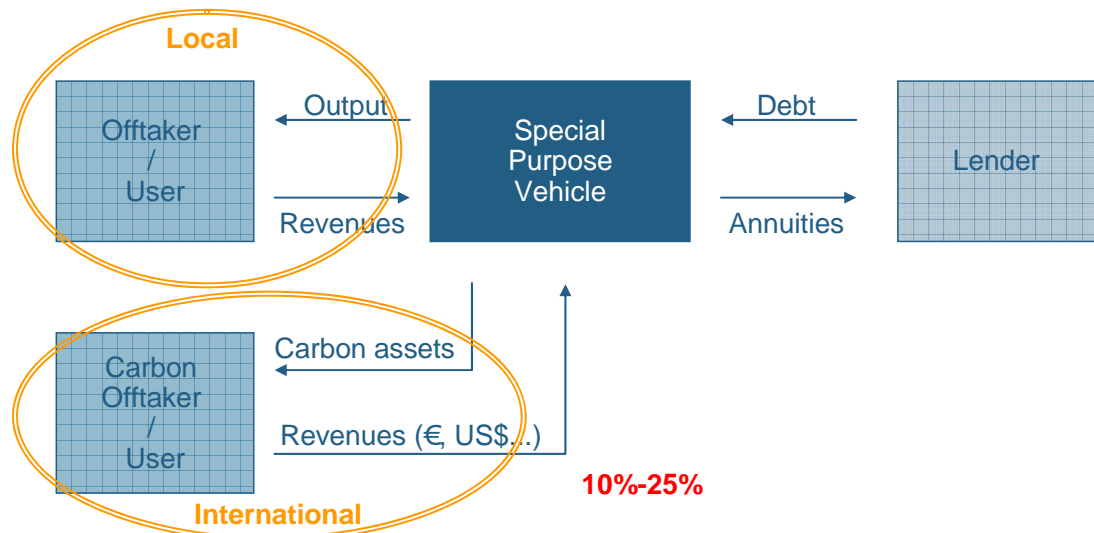
Different pricing for CER from CDM projects



	Primary CER	Non guaranteed secondary CER	Guaranteed CER	Issued CER
Performance Risk	Strong	Strong	None	None
UN Registration risk	Strong	Strong	None	None
Counterparty risk	Strong	Low	Low	None

Carbon can significantly enhance a project finance structure

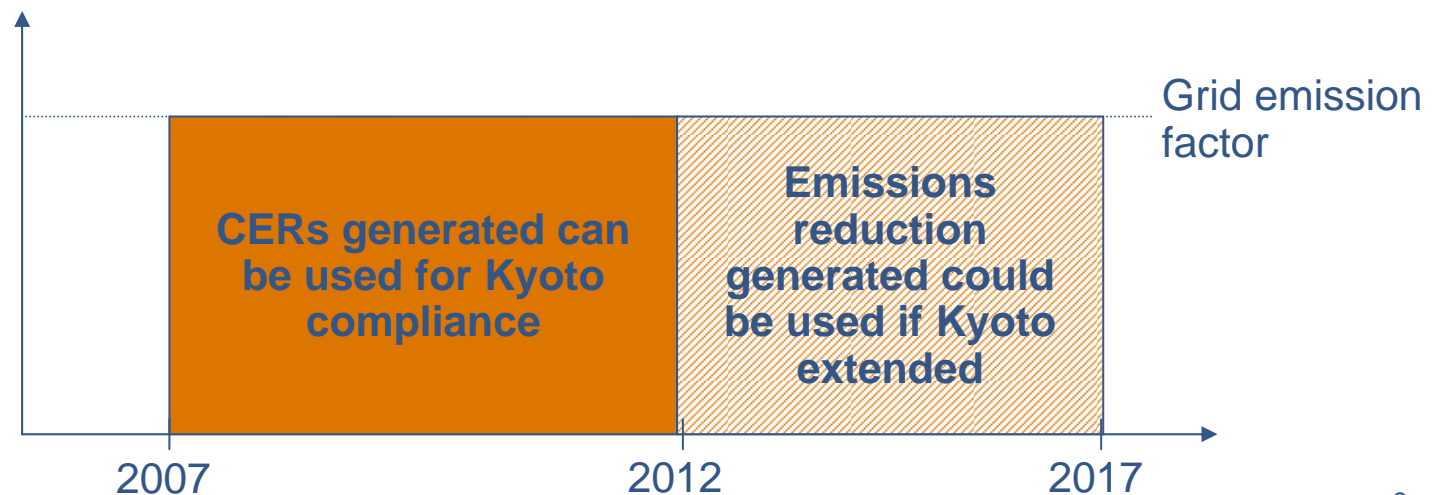
- ✓ Carbon credits offer the opportunity of enhancing the project financing structure thanks to numerous advantageous features such as:
 - ✓ Issued by international bodies and governments
 - ✓ Exchanged in hard currency
 - ✓ Easily transferable
 - ✓ Exchangeable on increasingly liquid markets
 - ✓ Purchased by highly rated counterparties
- ✓ Research carried out by BNP Paribas has shown that the use of carbon mechanisms can increase the free cash flows of a project by 10 to 25% depending on the nature and location of the project



The volume of Carbon assets is generally proportional to the core output (i.e. x CER by MWh produced)

Case study: Gangwon wind farm

- The Gangwon project is a 98 MW Wind farm
- The €123m investment was arranged by BNP Paribas
- Based on the Korean grid emission factor (0.535 tCO₂/MWh) and c. 244 GWh production per annum, the project generates 130,000 tonnes of emission reductions each year (or 1.3m CERs over the 10 year crediting period)
- Based on a market price of 10€/CER, each MWh produced generates an additional revenue of 5.35€ (to be compared to power price of 58€/MWh)





Barriers to Project Finance

■ Licensing

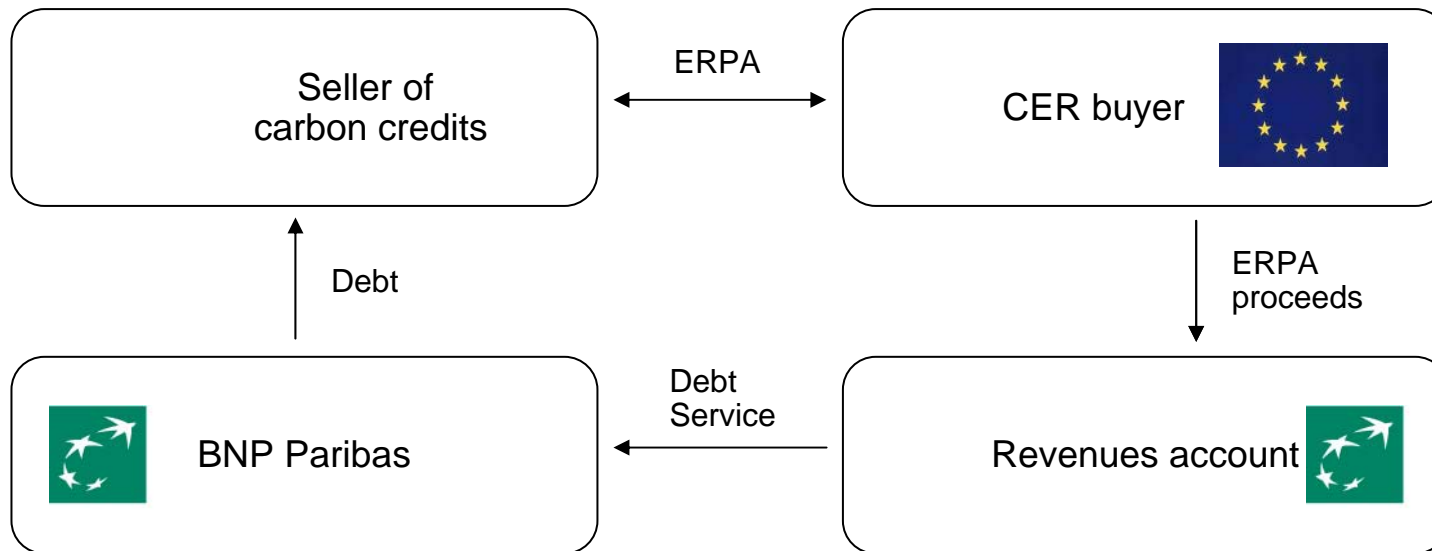
- Project financiers not comfortable taking regulatory risk
- In most cases, Project must be registered before CER cash-flows can be considered

■ Post 2012 time horizon poses new questions

- Very limited price transparency
- Project 'window' has been closing for some time, and is now nearly shut

Pre-financing of CER proceeds

- Under the ERPA, the seller will receive a steady stream of cash flows from the sale of carbon credits.
- Usually, these cash flows are in euros and will be paid until 2012 (inclusive)
- BNP Paribas can offer a facility corresponding to a portion of the net present value of the cash flows and be reimbursed directly from the proceeds of the sale





Example of transaction

■ The CDM project

- 500,000 CER per annum, starting in 2008
- The project is registered to the UN

■ The contract

- A floor price of EUR8 in the ERPA
- The purchaser is an established European company.

■ The facility

- The sale of the CER up to 2012 have a NPV of EUR13.5m
- BNP Paribas could offer a facility based on [70%] of the NPV, or EUR10m
- Tenor is 4 years +1

■ Modalities of reimbursement

- BNP Paribas to be focal point for the distribution of CERs
- For every delivery of CERs, an invoice is sent to the buyer
- On payment of the invoice, CER are delivered
- The proceed of the invoice, discounted by the instalments of the facility, are paid to the seller



Concluding thoughts...

- The carbon constraint has entered the economy

- It created a high quality new asset class
 - Sovereign
 - Reasonably liquid

- The EU-ETS and Kyoto CDM offer new risks and opportunities
 - Impact on the P&L
 - Impact on the Balance sheet
 - Impact on product-mix and production strategy

- As carbon pricing penetrates the economy further, capturing these opportunities and managing the risks moves higher up the corporate agenda
 - New markets on horizon in the US, Australia, Japan



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Thank you

Gracias

Merci

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