



# **Financing in the context of carbon markets, carbon finance, and flexible mechanisms**

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# The overall energy investment gap

	Annual Investment Needed	Current Funding	The Gap
<b>Power sector in developing world</b>	\$165 billion	\$80 billion - \$48 billion from private sector, IFIs, donors - \$32 billion from internal cash generation	\$85 billion
<b>Low-carbon transition</b>	\$34 billion (Stern: \$20-30)	Hundreds of millions	<b>\$30 billion</b>

# Carbon markets surpassed US\$100 billion by the end of 2007...



Allowance markets  
(US\$ million)

Project-based transactions  
(US\$ million)

EU Emissions Trading Scheme  
50,100 in 2007 alone  
(more than double from  
previous year)

CDM  
7,400 (30%  
over 2006)

New South Wales  
Certificates  
220

Jl  
500

Secondary  
CDM  
± 5,500

## Voluntary market in 2007 – niche segments (US\$ million)

Chicago Climate Exchange  
70

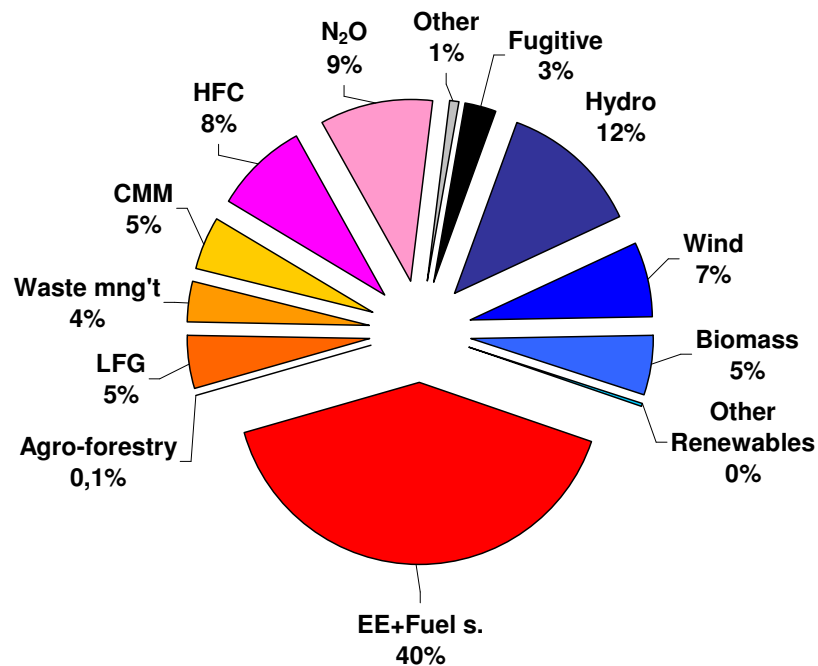
Voluntary & retail  
270

# CDM Delivers on Clean Energy



(share of volumes)

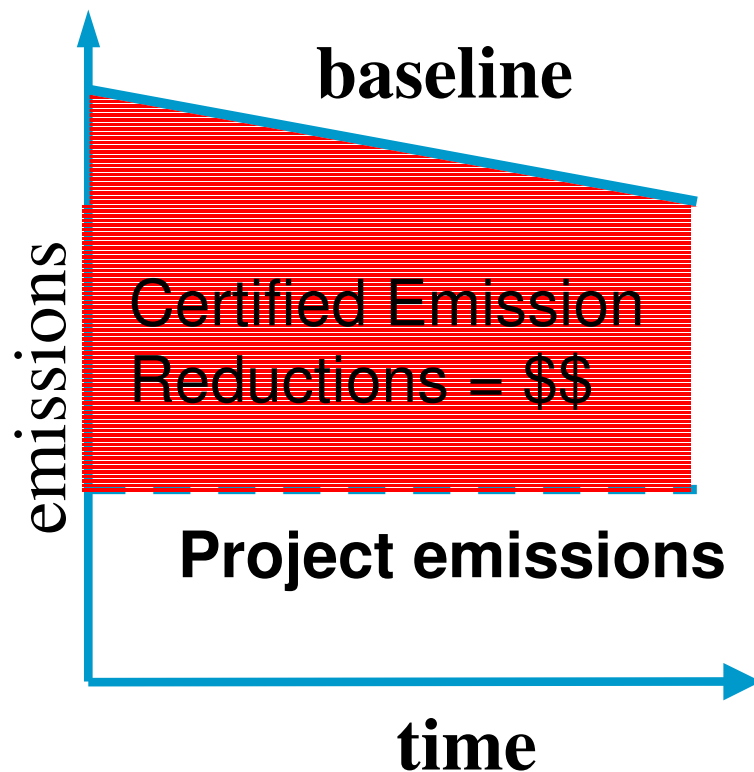
Clean energy: 64%



Jan. 2007 to Dec. 2007

- ❖ US\$1 of carbon leverages US\$9 financing of renewable energy
- ❖ US\$33 billion (€24 billion) clean energy leveraged in 2007
- ❖ Cumulative (02-07) leverage **US\$52 billion** (€39 billion) expected

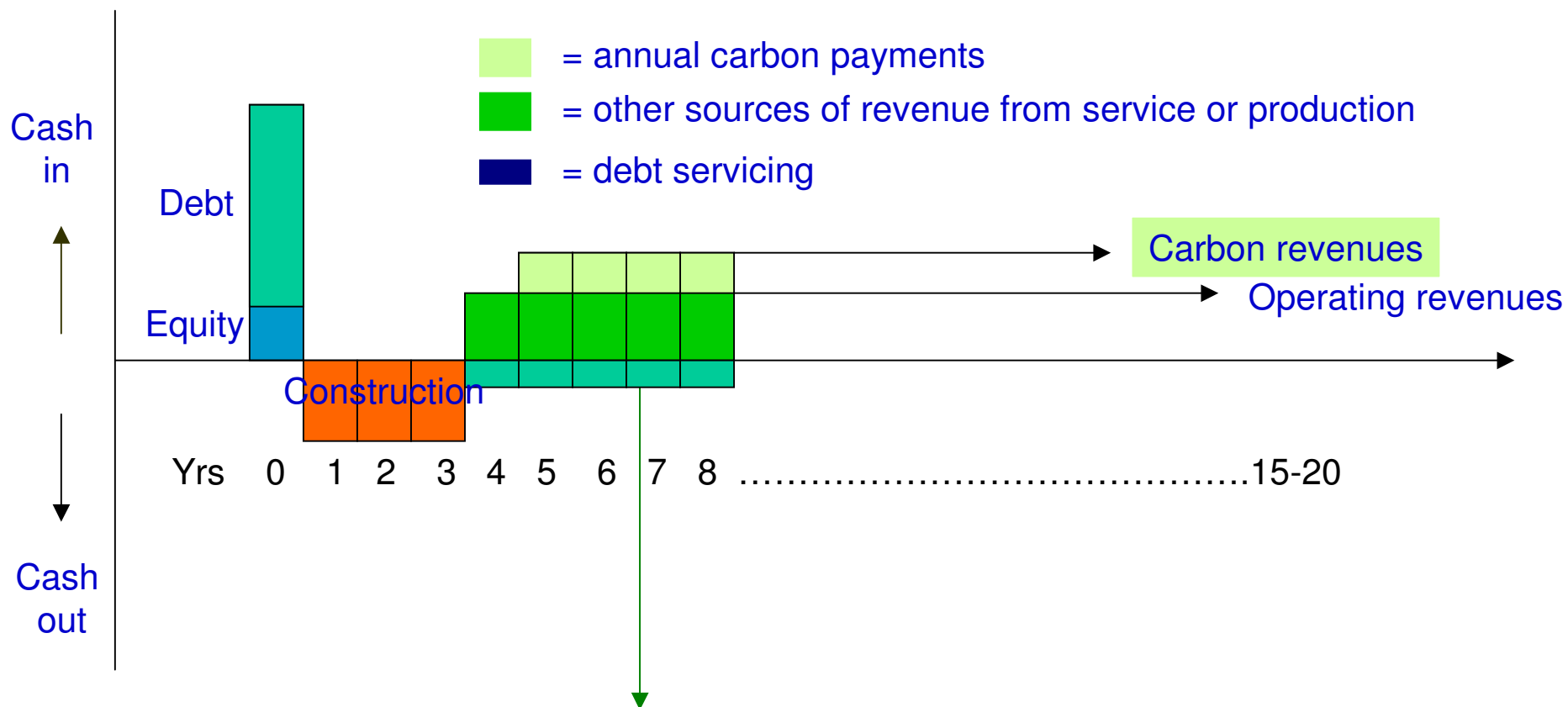
# Carbon finance helps make higher cost and marginal activities viable



- Helps offset higher cost of cleaner technologies/practises
- Helps leverage ofther financing: take the ER sales contract to the bank or utilize ER revenue to offset debt repayments



# Carbon finance: payments for a stream of emission reductions



**Forward contracts: ERs created after project is operational (output-based mechanism) and paid at delivery.**

# Impact of Carbon Finance



## **Quantitative impact: Additional annual streams and IRRs**

- Up to 4% incremental IRR in renewables/energy efficiency
- \$5-\$10 per MWh (~\$0.5M per MW) in RE / EE
- >50% incremental IRR for CH<sub>4</sub> (i.e. LFG)

## **Qualitative impact: High quality cash flow and contract**

- OECD buyers (investment-grade, creditworthy payers)
- Hard-currency (\$ or €) denominated
- Long-term contract with fixed or floor price (predictability)
- “Verified ER” contract model available in some cases (no regulatory risk to seller; bankable)

**CF revenue streams + Financial engineering allow access to capital markets and boost project bankability**



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# **Project example**

## **Ecuador Abanico Hydro Project**



# Securing Underlying Finance: IIC Ecuador Abanico Hydro

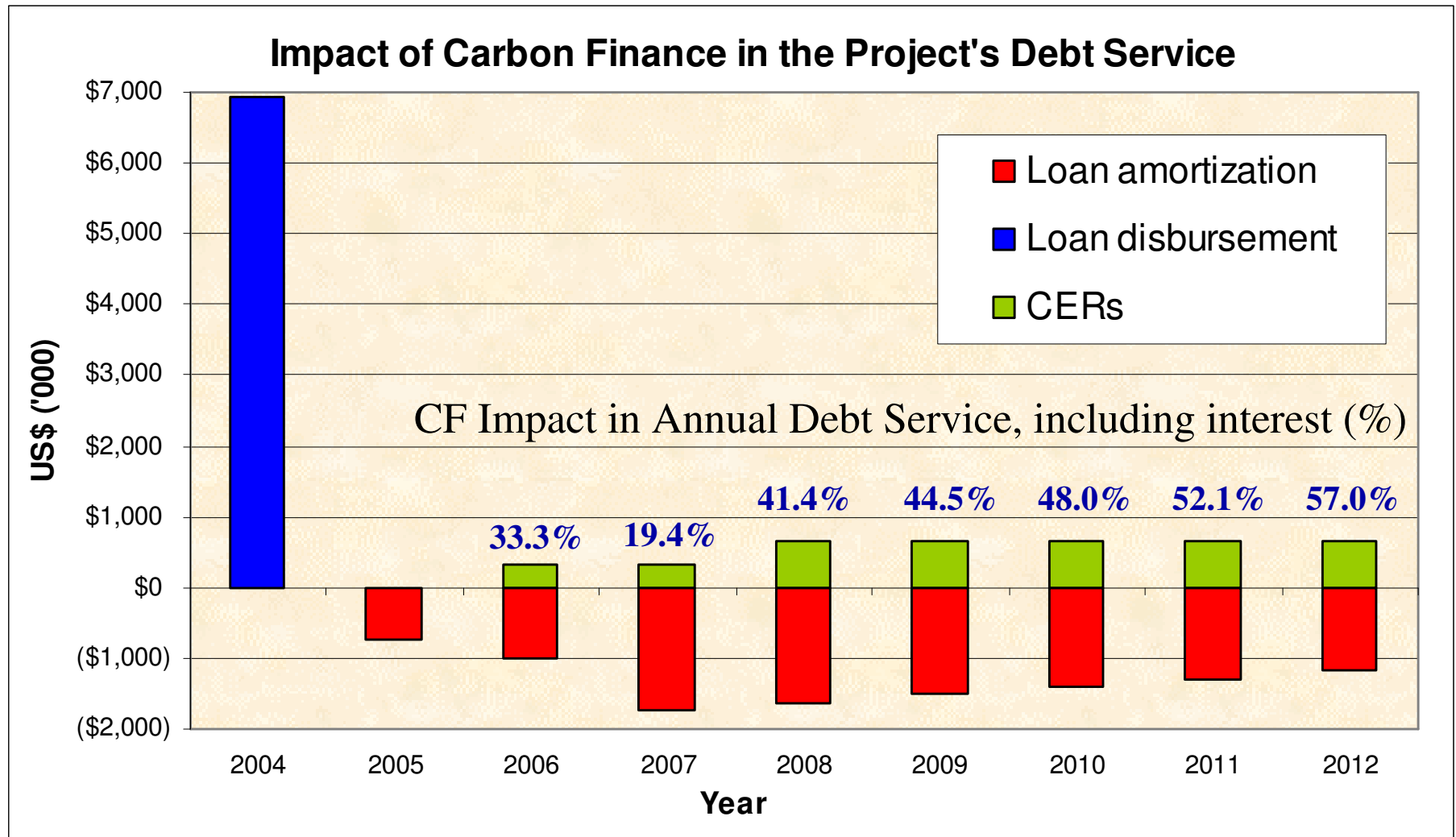


- 30 MW run of river hydro
- \$33.3m cost
- IRR 15.6%



- 800,000 tCO<sub>2</sub>e ERs
- \$4m extra cash flow
- $\Delta$ IRR 0.73% => 16.3%

# Abanico Cash Flows



*ER payments enabled project to meet financier's investment criteria*



Thank you !

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# WB carbon funds and facilities



Total funds pledged: over US\$2.2 billion (19 governments, 66 firms)

FUND	SIZE	PARTICIPANTS	FOCUS
<b>Pioneering Funds</b>			
Prototype Carbon Fund	180.0	Multi-shareholder	Multi-purpose
<u>Forest Carbon Partnership Facility</u>	70.0	Multi-shareholder	<u>Deforestation &amp; forest degradation</u>
<u>Carbon Partnership Facility</u>	n/a	Multi-shareholder	<u>Programmatic/sectoral</u>
<b>Specialized Funds</b>			
Community Development Carbon Fund	128.6	Multi-shareholder	Projects w/ social benefits
BioCarbon Fund Tranches 1 & 2	89.9	Multi-shareholder	Land Use and Forestry
<b>Country Funds</b>			
Netherlands CDM Facility	Not discl.	NL Ministry of Environment	CDM projects
NL European Carbon Facility ( <i>with IFC</i> )	Not discl.	NL Min. of Economic Affairs	Jl projects
Spanish Carbon Fund	282.4	Multi-shareholder (Spain)	Multi-purpose
Italian Carbon Fund	155.6	Multi-shareholder (Italy)	Multi-purpose
Danish Carbon Fund	69.4	Multi-shareholder (Denmark)	Multi-purpose
Carbon Fund for Europe ( <i>with EIB</i> )	65.0	Multi-shareholder	Multi-purpose
<b>Umbrella Fund</b>			
Umbrella Carbon Facility	737.6	Multi-shareholder	Tranche 1: 2 HFC23 projects in China



# The next 10 years...

## Use the carbon market to tackle mitigation; start now!

- Support long-term investments for transition to *low-carbon economy*; integrate carbon finance into public and private *investment decisions*
- Shift away from a project-by-project approach to systematic *programs* of investments in a strategic way
- Help inform a *long-term regulatory framework* that provides certainty of a carbon price signal
- Provide incentives for development of low-carbon *technology*
- Create incentives for *avoiding deforestation*



# Two new carbon facilities

- **The Carbon Partnership Facility (CPF)**
  - Use carbon finance / carbon markets to catalyze a *transformation* toward low-carbon economic development.
  - *Partnership* between buyers and suppliers of carbon credits.
  - *Scaling-up* of carbon finance:
    - Programs and sector interventions.
    - Long-term emissions from all sources.
    - Low-carbon technologies.
  
- **The Forest Carbon Partnership Facility (FCPF)**
  - Reduce emissions from deforestation and degradation
  - Pilot an output-based payment system for carbon credits derived from protection of forests.



**Programmatic:** larger scale, better planning environment for project owners, and transformational impact on emissions

