Challenges for Financing Clean Development Mechanism Project in Asia: Case Studies from Indonesia and India

For the session of "Mainstreaming Climate Change Concerns in Development Policy: Issues and Challenges for Asian Countries"
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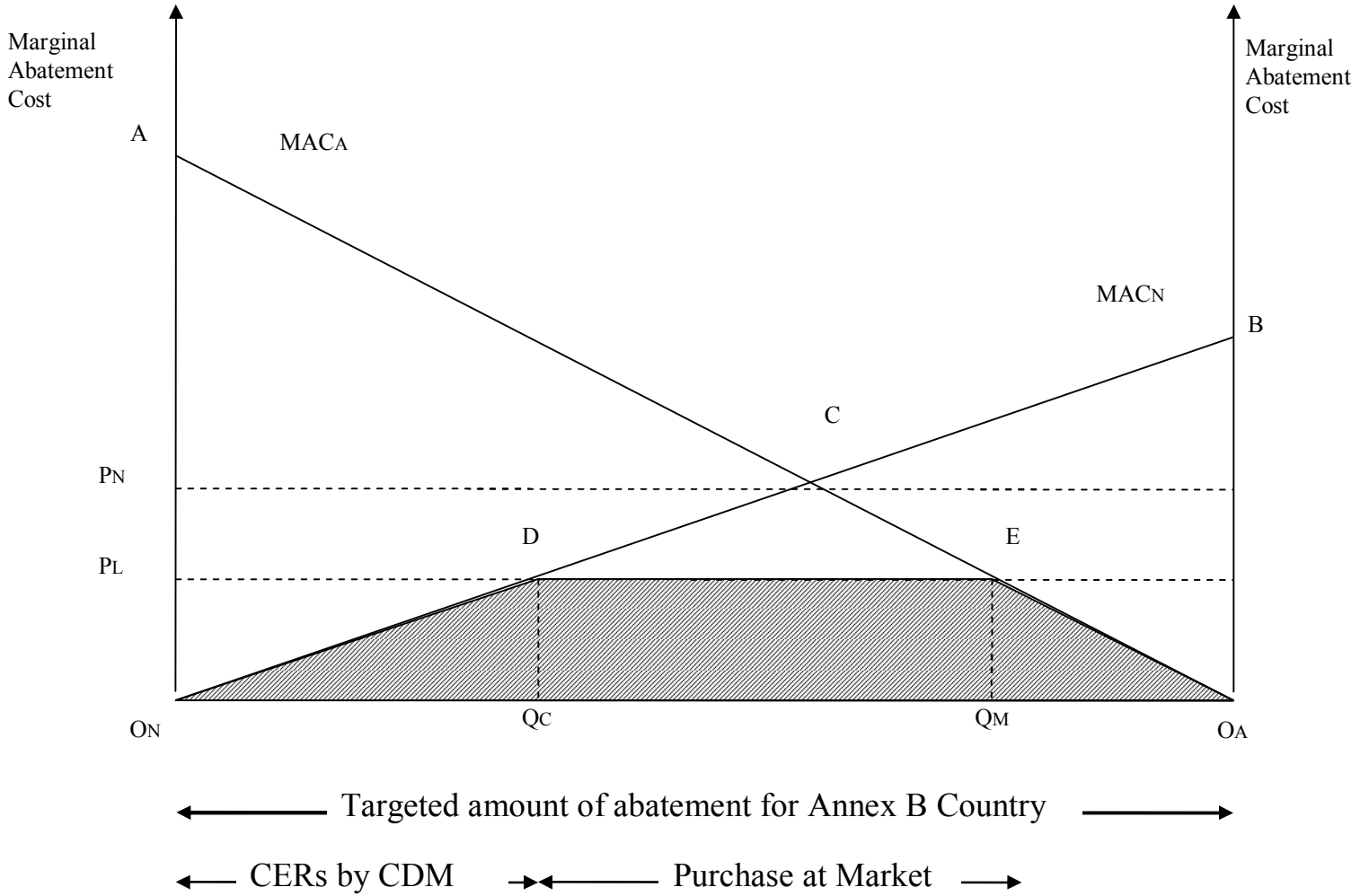
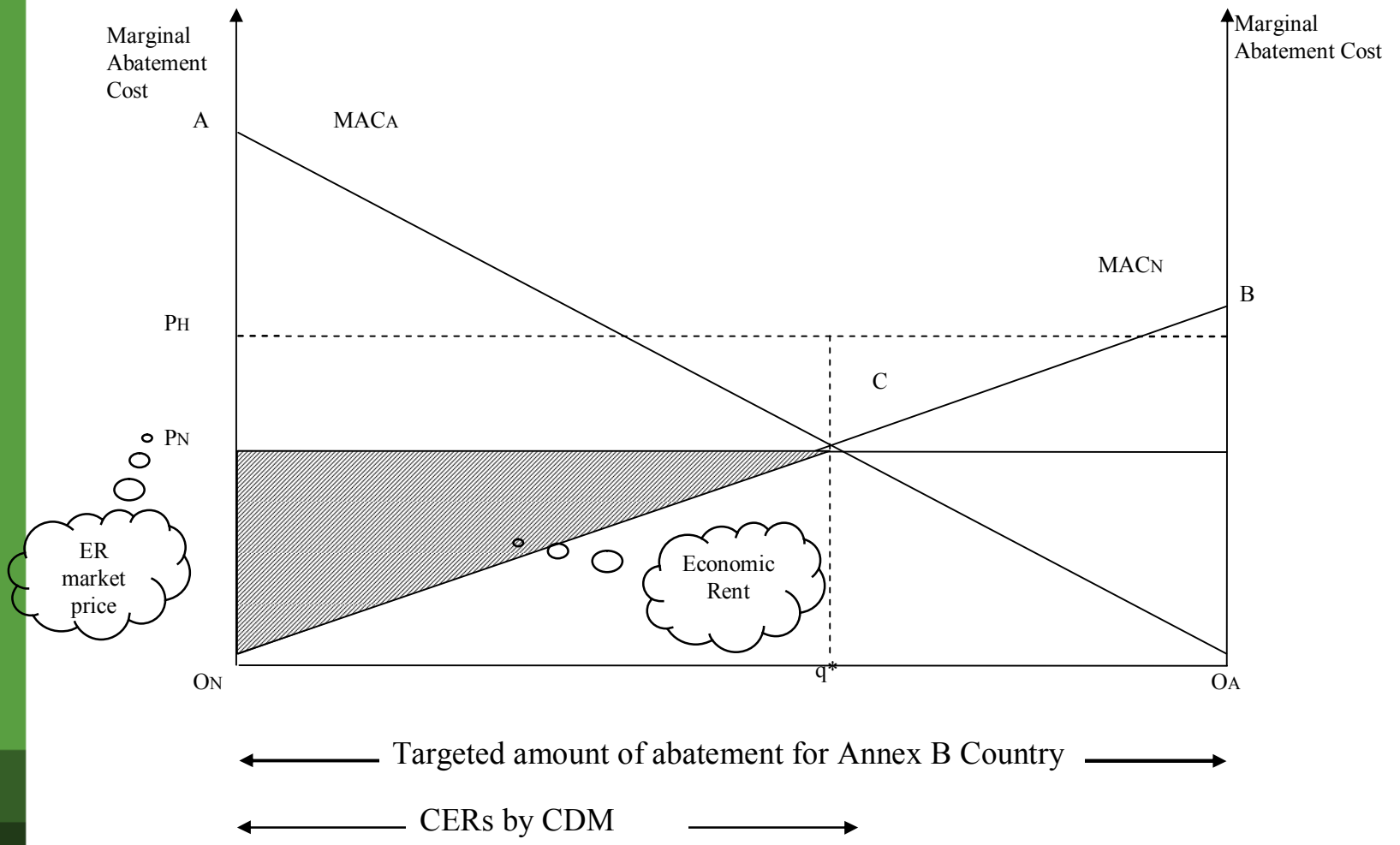
Outline

- Concept of CDM
- Additionality
- Characteristics of CDM & financial flow
- Risks
- Constraints and uncertainty
- What's next?

Theoretical Concept of CDM (1)



Theoretical Concept of CDM(2)



CDM activity should be "Additional"

- (A CDM Project must achieve) Reductions in emissions that are **additional** to any that would occur in the absence of the certified project activity. (Kyoto Protocol. Article 12.5(c))

- A CDM Project activity is **additional** if anthropogenic emission of Green House Gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity. (Marrakesh Accords Annex Article 43)

Additionality and CERs

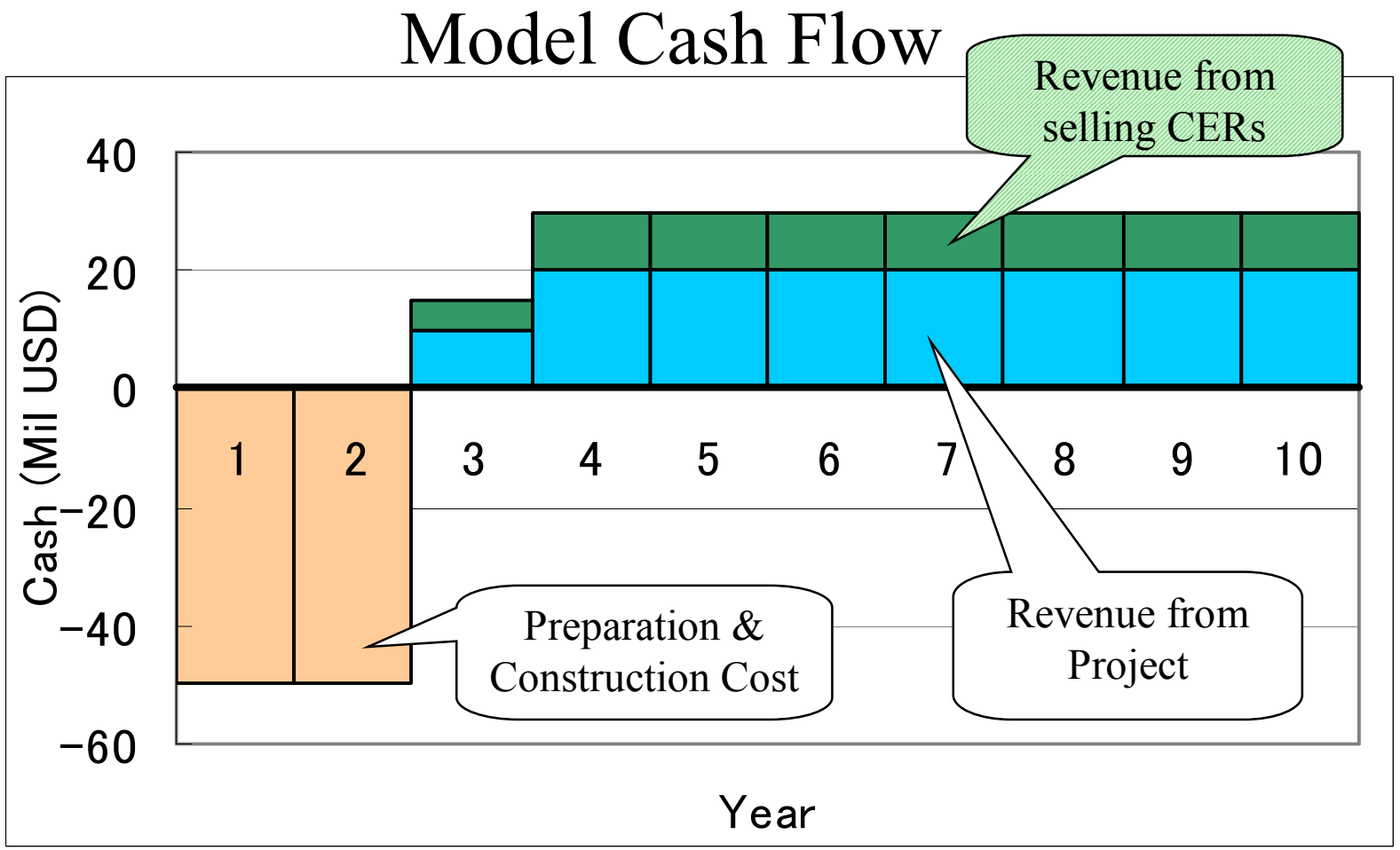
<"Additionality" in terms of…>

- Emission Reduction --- Baseline & Monitoring Methodology
- Finance --- Diversion of ODA finance into CDM
- Investment
- Technology

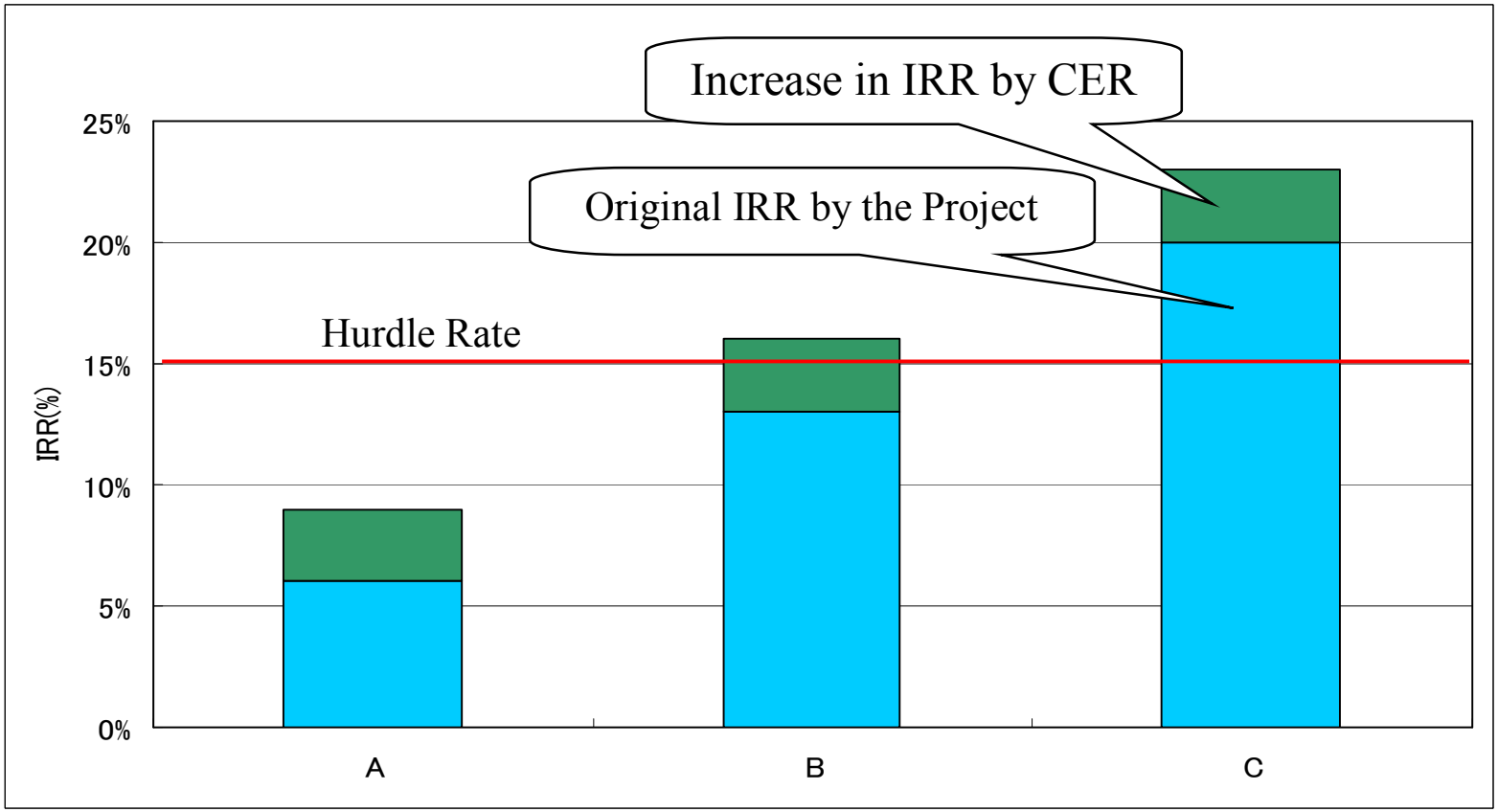
<CERs as Transferable and valuable rights>

- CERs will be generated by Registered CDM activity (Kyoto compatibility)
- CERs are the rights with unique character like commodity.
  - Countable
  - Transferable
  - Valuable => Make additional revenues to the project

Cash Flow


Model Cash Flow
Revenue from selling CERs
40
20
0
−20
−40
−60
Cash (Mil USD)
1
2
3
4
5
6
7
8
9
10
Year
Preparation & Construction Cost
Revenue from Project

Concept of Financial Additionality



Not Profitable

Suitable as CDM Project

Done as "Business as Usual (BAU)"

Difference of IRR by Technology

Technology	Difference of IRR between with/without CERs
Hydro	0.8-2.6
Wind	1.0-1.3
Bagasse	0.4-3.6
Energy Eff.-District Heating	~ 2.0
Gas Flare Reduction	2-4
Biomass	2-7
Municipal Solid Waste	>5

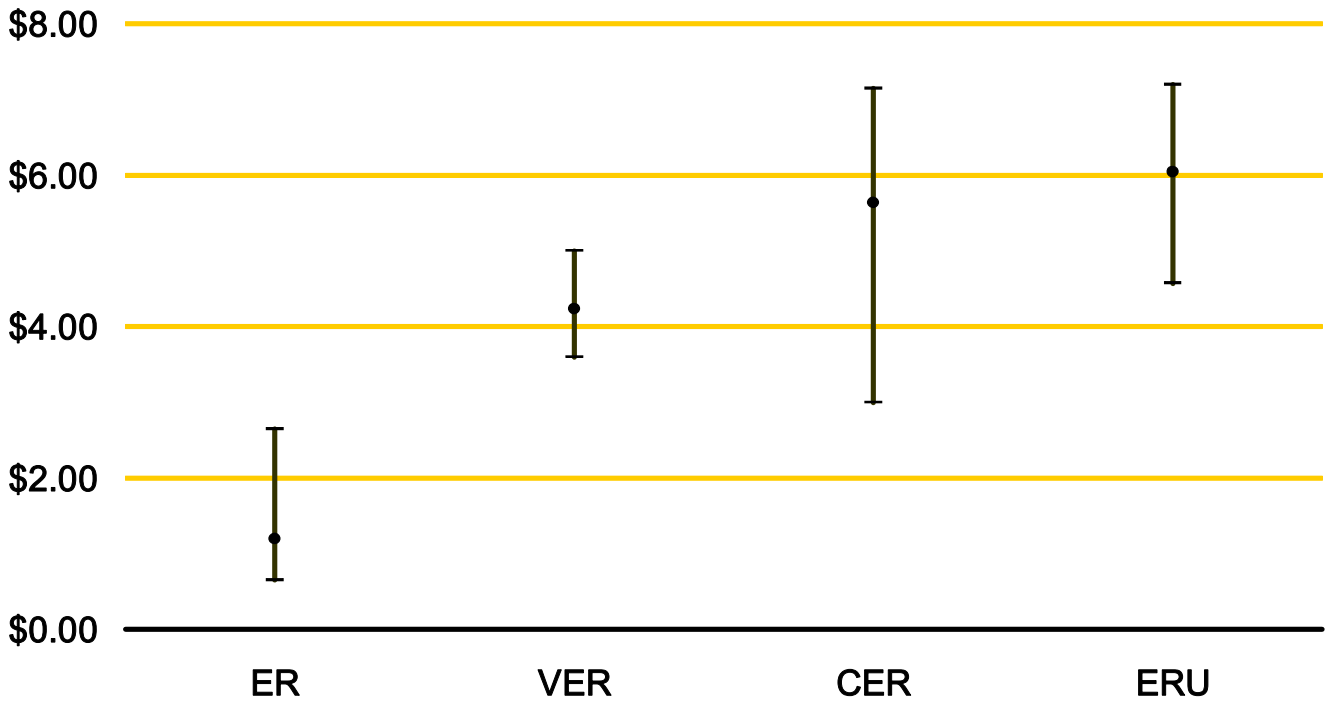
Source: PCF (2002)

Risks on CDM Projects

Stages	Country (Sovereign) Risk	Conventional Project Risks	CDM Risk
Planning & Design Stage	**Political and Administrative Risk** -Policy, Law and Institutional Change -License, Approval **Economic Risk** -Exchange Risk -Transfer Risk -Economic Crisis Risk -Credit Risk **War & Riot Risk**	**Regulatory Risk** -No Feasibility -No/Delay of Approval -Failure/Delay of Finance closure -Stakeholder's objection -Failure of conclusion of contract and agreements	**Regulatory Risk** -Failure of development of PIN/PDD -Disapproval by Host & Annex-I Country -Failure of demonstration of Additionality -Failure of conclusion of ERPA etc
Implementation Stage		**Construction Risk** -Delay of completion -Default of contractor -Stakeholder's objection -Environmental Impact -Force Majeure	**Regulatory Risk** -Change of Rules and Modalities of CDM -Withdrawal from KP
Operation Stage		**Operation risk** -Break down, accident -Low production -Default of Suppliers/ Buyers/ Project itself -Force Majeure	**CERs Risk** -Monitor, verification, certification by CDM EB -Fluctuation of Price/Volume of CERs (including un-tradable) -Withdrawal from KP -Uncertainty of Post Kyoto

Prices Depend on Risks

(weighted average prices from Jan. 2004 to April 2005 in USD/tCO_2e)

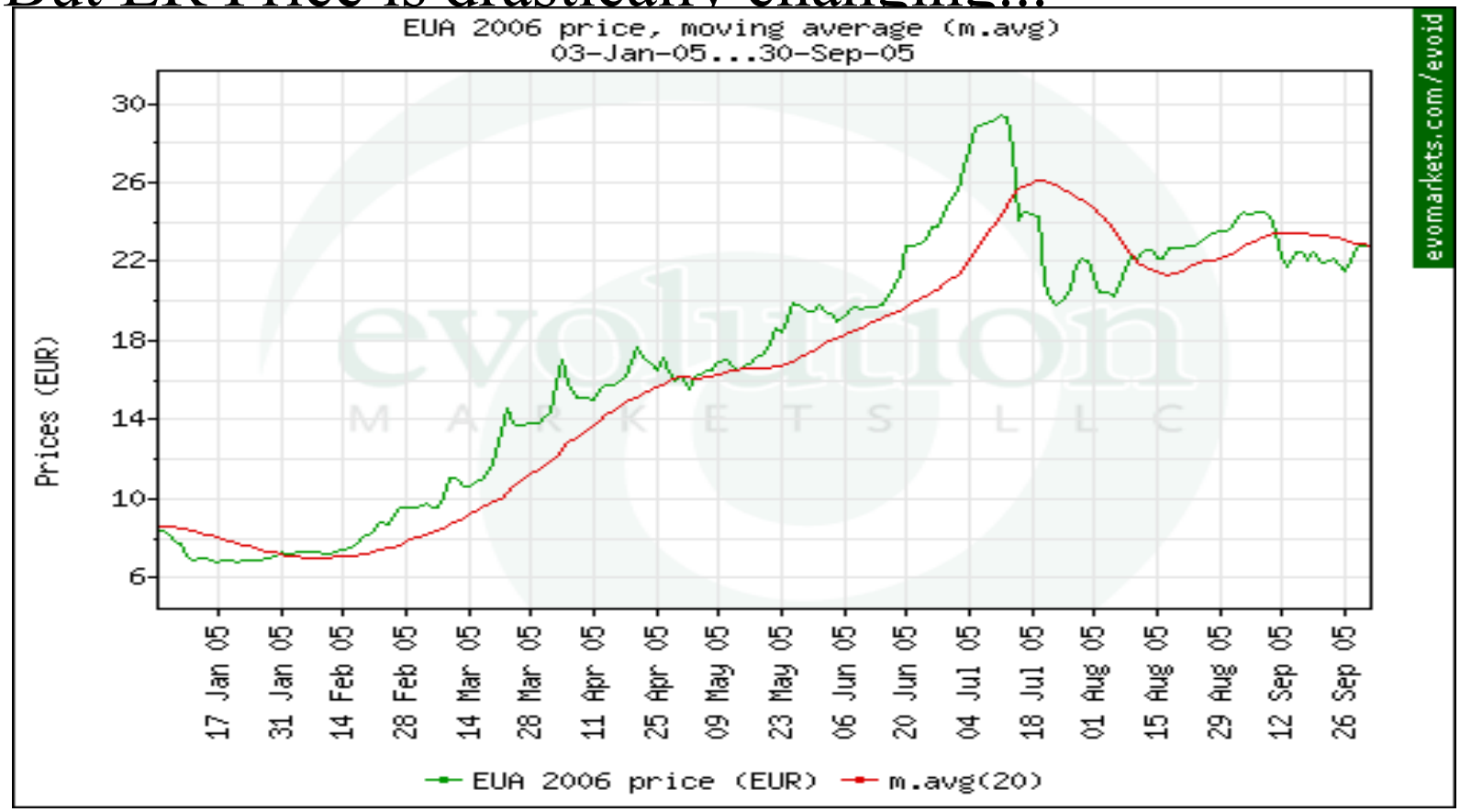


(Source) Recocq (2005)

Discount rate of credit = time preference + risk premium

EUA Price Fluctuation

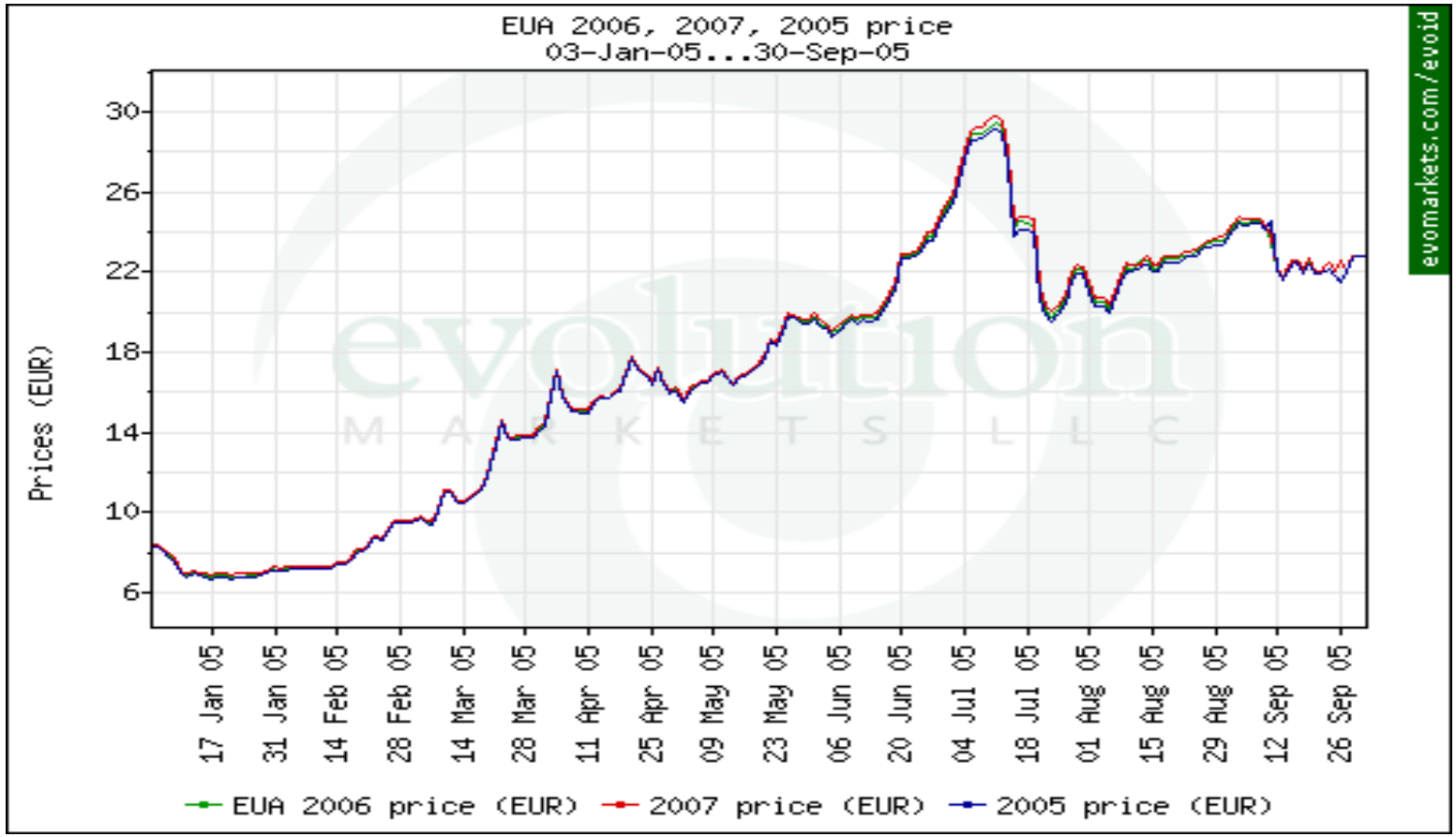
But ER Price is drastically changing...



(Source) http://www.evomarkets.com/evoid

Nobody can know the future price…

There is almost no price difference among vintages.



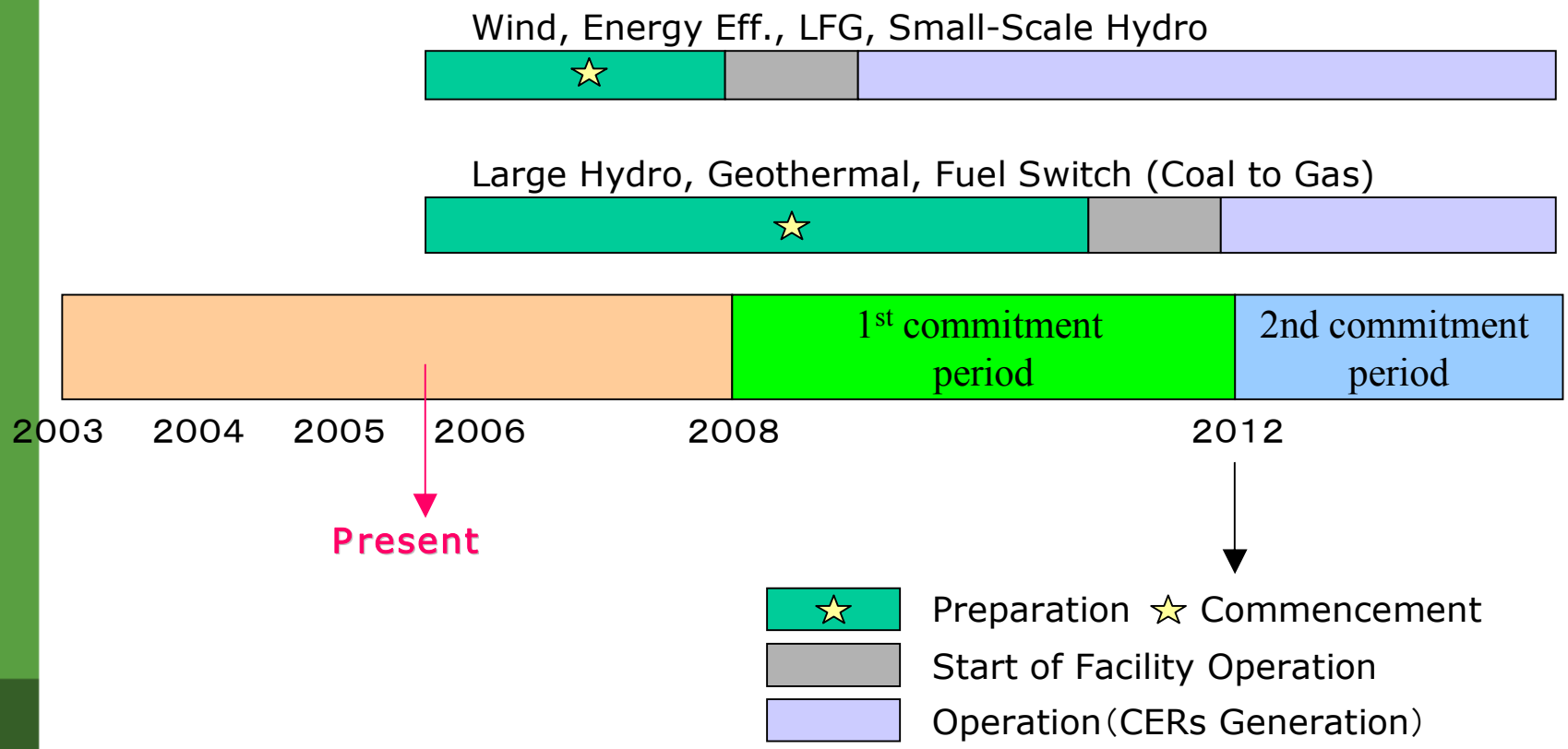
(Source) http://www.evomarkets.com/evoid

There is no time preference in ER credit?

=>No discount rate is available?

Time Constraint and Uncertainty

Constraint of Preparation Time and Uncertainty Of CO2 / CH4 Reduction CDM Projects (excl. HFC23)



<Conclusions so far･･･>

- The unilateral CDM will be beneficial for host countries if host countries can manage the implementation of CDM activities and the sales of CERs by themselves.
- CDM has similar barriers and challenges to the conventional project in developing countries such as country (sovereign) risk and conventional project risks.
- Due to high risk premium on the country risk, the CDM activity at the high risk country need high profit rather than low risk countries. This may cause the difference of geographical distribution of CDM activities.
- CDM related risks caused by structural constraint of CDM modalities are also barrier and challenge for promotion of CDM activities.

Comparative Analysis: Bilateral vs. Unilateral

	Pros	Cons
Bilateral CDM	-Developing countries can get transfer of technology and finance -Both parties can share the project risk	-Developing countries have to find a partner - It takes more time to find the partner
Unilateral CDM	-Project developers of host country can take a strong initiative -Speedy development of the project without need for finding the partner	- Failure to find out CERs buyers - Technology transferred maybe can be possible, but options can be limited - Developing countries have to take full risk - Against the original concept of international cooperation

Case Study: Country Background

Indonesia

- Largest ASEAN island, oil exporting country with 0.23 billion population (110 million below poverty line)
- Gradual recovery from 1997Asian economic crisis

-Graduation from IMF financial reform program (2003)

-4% economic growth

-Public debt: 100% →72% (of GDP)

- New President Yudoyono's 5 years development plan (2004):

-Economic growth,

-Promotion of democracy and governance

India

- Second largest population: 1.1 billion (28% below the poverty line)
- Rapid economic growth

-Average 6.14% (1990-2004)

< energy consumption

-Foreign exchange reserves (2005): US$140 billion

Case Study: Country Background

Indonesia

- High country risk
  - -Political uncertainty
  - -Weak financial sector
  - -High Debt Service Ratio (DSR): 29.8% (2003)
- Public led development
  - -High priority for infrastructure and poverty
  - -Dependence on ODA or financial assistance from abroad
- Recent concerns
  - -Tsunami disasters
  - -Increasing subsidy for high oil price

India

- Not high country risk
  - -More than $US 9 million FDI (2004)
  - -Low DSR: 18.3 % (2003)
  - →Easy to raise domestic fund
  - →Still room for inflow of finance
- Private led development
  - -Market-based economy
  - -Initiative by the private sector
  - -Minimum government intervention
  - -Avoids increase of government external debt

CDM Policy

Indonesia : Bilateral

- Low priority of climate policy
  < poverty alleviation
- CDM < Adaptation
- Late establishment of DNA (2005)
- Limited involvement of SMEs
- No CDM projects have been approved by the Government
- High expectation but low implementation in forestry and energy (35% of total emissions)
- Barriers of existing laws and regulations on government-owned natural resources
  →increase transaction cost

India : Bilateral/Unilateral

- One of the biggest CER supplier (more that than 90% of 97 CDM are unilateral)
- Early set up of DNA (2003)
- Active involvement of both big developers and SMEs
- Focus on market-based economy and initiative by the private sector
- Nagative to increasing external debt

CDM Policy

Indonesia

- Weak domestic financial sector
  - -Recovering from Asian economic crisis
  - -Huge amount of external debt and high percentage of bad credit of private sector
  - -High country risk

→ Difficult to get underlying finance

- CDM can be an additional source of FDI
- Indonesian development plan (2004-2009)
  - -Inadequete fund allocation for the environment
  - -Difficult to get alternate source of public finance

→Difficult to implement unilateral CDM, instead the government prefers bilateral CDM.

India

- Competitive financial sector:
  - -financial reform (1991-)
  - -low DSR with 18.3 %

→Easy to raise domestic funds

→ India can pursue either bilateral or unilateral CDM.

→ Unilateral CDM are small scale biomass CDM projects, which can be easily implemented within their own capacity and finance.

Planning Stage

Indonesia

- Capacity to draft PDD or knowledge of CDM is not enough both in the government and private sector especially for SMEs

→Foreign assistance plays an important role

- High transaction cost due to existing laws and regulations on government-owned natural resources
- Depend on foreign DOE
- No CDM projects approved by the Government

India

- Enough capacity to collect necessary information or data to draft PDD by themselves

-Active involvement of both big companies and SMEs

- Lot of English speaking Indians working in DOE

- Some face barriers

→More potential CDM projects, if developers could solve the problem of drafting their PDD or financial support from developed countries.

- Low validation cost

Implementation Stage: Finance

Indonesia

- Country risk: ”BB-” (R&I)
- Public led economy

-Depends of public finance and alternative funding due to limited budget for CDM

-More than 60% of potential CDM lies in government owned sectors: Energy, Forest

- Difficult to raise domestic funds or form capital by themselves

-Weak financial sector

-Debt/GNI: 82%

→Prefers bilateral CDM, which could bring FDI

India

- Country risk: BBB”(R&I)
- Private driven economy
  - Government avoids increase of external debt
  - Market-based economy
- Easy to raise domestic funds
  - Competitive financial sector
  - Debt/GNI: 19%

→Private sector tries to implement small scale type biomass unilateral projects within their capacity to raise domestic funds.

Implementation & Operational Stage

Indonesia

- Have some of necessary technologies, but expect the higher-level TT to achieve higher economic growth and competitiveness

→TT through bilateral CDM is important

- Difficult to take risks

India

- Have enough technology, supported by its strong engineering industry, but need TT in case that high level technology is not available in India

→ TT may be possible, but its options can be limited in case of unilateral CDM

- Difficult to find a partner before registration

Conclusion

5 key elements when choosing between unilateral and bilateral CDM;

(1) Capacity to develop and plan CDM projects,

(2) Availability of technology

(3) Capacity to raise domestic finance and/or international finance

(4) Capacity to implement CDM project as planned

(5) Capacity to operate and maintain the projects

Conclusion

- Unilateral CDM benefits a lot for developing countries in getting economic rent and promoting SD.
- Foreign assistance such as TT financial support could enhance the viability of the CDM project.
- Host countries can choose policy options depending on their level of economic growth, financial conditions, investment attractiveness, public-private relationship..

Recommendations

- Additionality condition shall be relaxed.
- Annex I's Support on underlying finance for unilateral CDM
- Market transaction shall be open for Host countries (allow DCs to sell CERs generated by unilateral CDM).
- Assurance of value of CERs after 2013 (Post-Kyoto)
- CB for local government
- More attention to country risk
- More proactive support of the Annex B countries in terms of TT and finance for global participation

Thank You!

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