
Beyond Carbon Finance: Linking the Worlds of Project Finance and CDM

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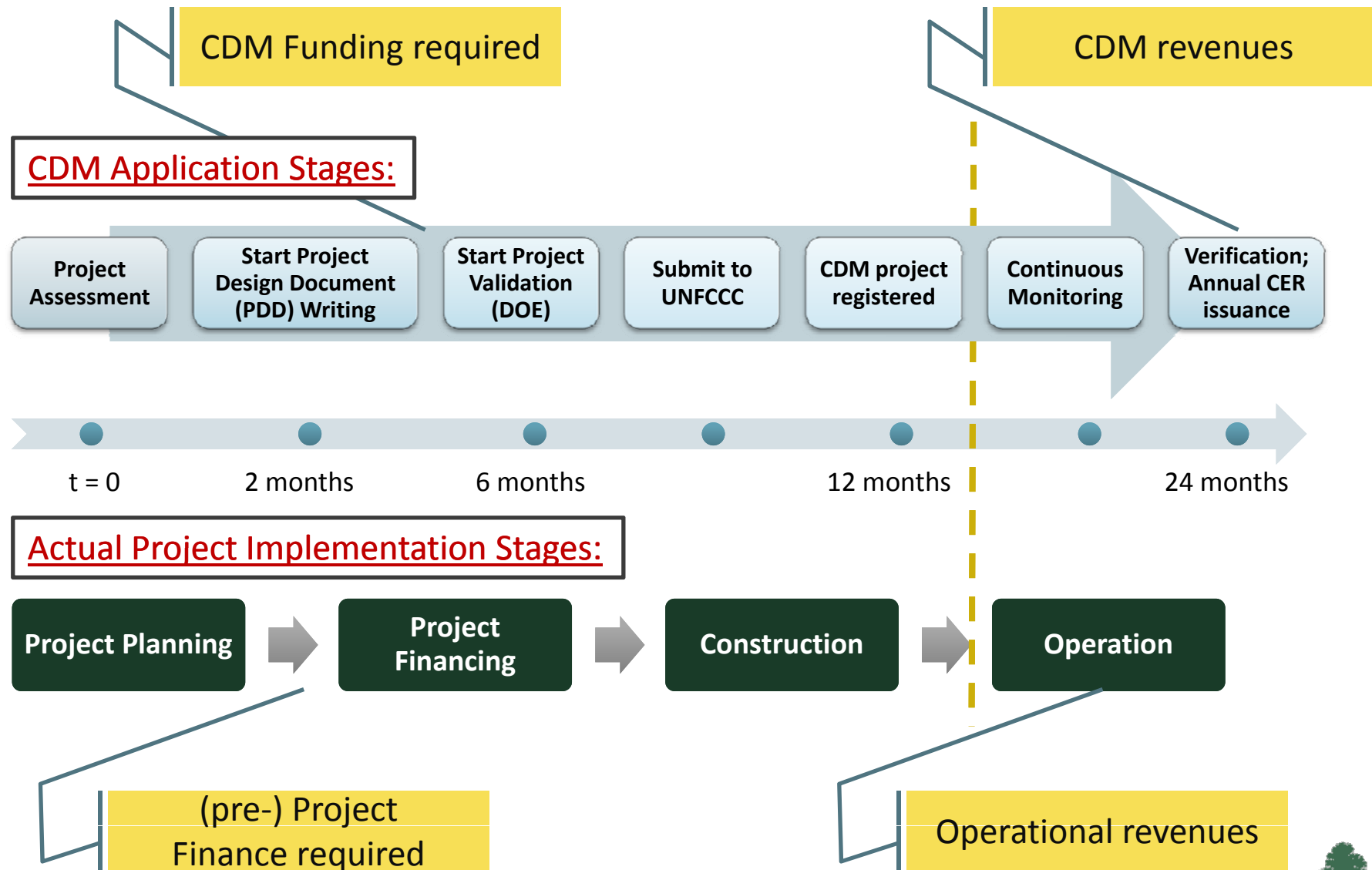


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- **Carbon Finance**
- **Project Finance, Risk and Obstacles**
- **Mitigation and practical approaches**
- **Reform of CDM system**

Carbon Finance

CDM and Project Implementation Cycle



Carbon Finance: In most cases carbon finance is limited to the carbon revenue stream:

- Investment in documentation (PDD) and CDM process (validation / registration) - > 60,000 ~ 150,000 EURO
- Payment-on-delivery Contract for carbon credits.

 **CDM results in additional revenue stream, but only after implementation**

Common transaction structures:

- (1) **Forward contract:** Buyer of credits invests in CDM development process, in return obtains forward contract for carbon credits against discount (primary market) -> **Common in China**
- (2) **Spot market:** Project developer invests in CDM development process, retains credits and sells against higher pricing in secondary market -> **Common in India**

 **Deal structure depends on developer's preference and market structure**

What other deal structures exist?

- **Technology deal:** Buyer of carbon credits provides technology to project developer in exchange for future carbon revenue stream
- **Pre-payment deal:** Buyer advances part of the carbon revenue stream as a loan to be offset through carbon credit deliveries



Much demand for such structures, in particular in SE Asia.

Relatively few deals happening, why?

Lack of certainty of CDM system:

- CDM process takes over 1 year, project implementation cannot be delayed
- UN decision making considered arbitrary -> low trust in the CDM system
- Delays in issuance ->no guarantees credits are delivered in time

Post-2012 uncertainty:

- Uncertainty of future carbon system -> value of post-2012 credits uncertain
- Projects starting today will generate few carbon credits pre-2012

Host country requirements:

- Local majority ownership requirement (49% rule in China)
- Minimum price requirements (China) -> does not allow sufficient discounting

Counterparty and project risks:

- Project developers unable to provide sufficient security (bank guarantees)
- Project performance risks

For technology deals -> lack of proper intellectual property protection

Project Finance, Risk and Obstacles

How are CDM Projects Financed?

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In most cases CDM projects financed through traditional project finance:

- Equity investment: mostly through domestic investors
- Debt finance: mostly through domestic banks
- Government-backed funding / international financial institutions

What is the impact of CDM on enabling financing?



CDM results in additional revenue stream, but only after implementation

Local Banks:

- Often lack capabilities to evaluate carbon revenue stream, do not
- Lack of experience with new technologies

International Banks:

- Often lack capabilities to properly evaluate project risks (counter party, country, etc.)
- Conservative in valuation of carbon revenue stream
- CDM projects tend to be too small to be considered for lending

CDM projects tend to combine a number of risks:

- **Country risk:**
 - CDM projects tend to be in less stable / less developed countries
 - Capital markets are less developed
 - Proper credit rating is often not sufficient
- **Counterparty:**
 - Absence of proper financial security
 - Limited track record
 - Human resources lack sufficient skills
- **Technology:**
 - CDM tends to involve new technologies
 - Some CDM technologies difficult to implement / operate (bio-projects)
- **Operational risks:**
 - Proper management and experience required
- **CDM risks and uncertainties:**
 - risk of project rejection by UNFCCC
 - risk of delays in processing

Equity finance key to getting projects off the ground:

- Early stage funding (feasibility)
- Equity portion needed to unlock debt finance (30~40%)

What equity channels exist:

• **Domestic equity finance:**

- Individual entrepreneur investors
- Larger companies diversifying into new sectors
- Limited domestic equity fund activity

• **International equity finance:**

- Venture Capital / Private Equity: Expected returns are very high >20%
- Infrastructure funds:
 - Preference for large projects
 - Preference to come into the deal at later stage

The additionality dilemma!

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Additionality: “Emission reduction shall be additional to any that would occur in the absence of the certified project activity.” (Kyoto Protocol, Article 12)

Demonstrated through:

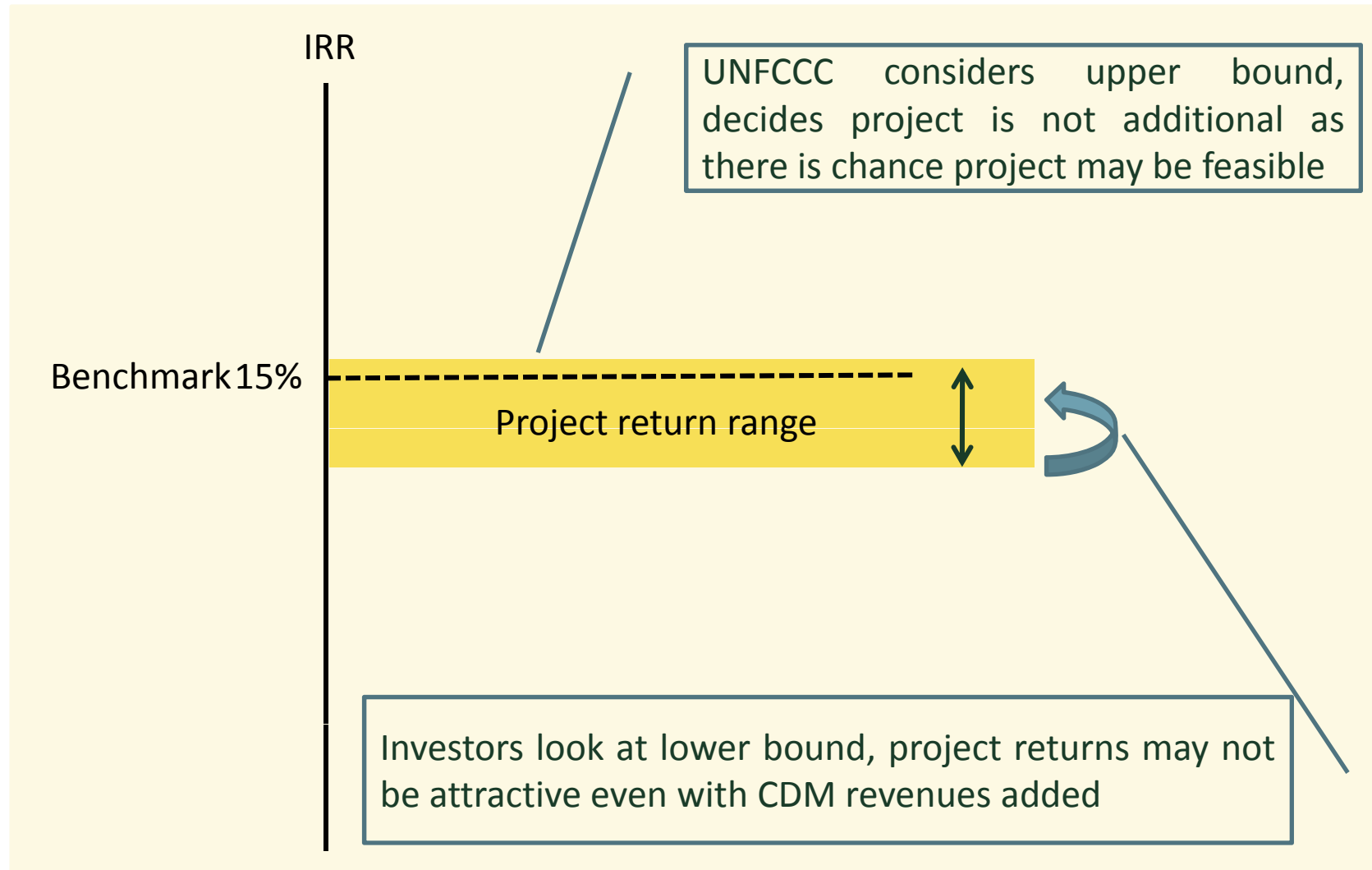
- Investment analysis -> Return on investment needs to be below certain benchmark
- Barrier analysis -> The project is not feasible due to technical, financial or institutional barrier.

Everyone is CONSERVATIVE!

- **Investor perspective:** Banks and equity investors always consider the worst-case scenario.
- **UNFCCC Perspective:** Considers best-case scenario -> If there is a chance the project may be feasible then the project is not additional.

Impact of CDM overrated: in most cases only 2 to 3% improvement of IRR!

The additionality dilemma!



CDM development often aligned with country's development objectives:



Some countries realize they are well positioned to fill the funding gap

China CDM proceeds fund

- China expects 15 billion in CDM revenues of which 3 billion will go to the government in the form of CDM levies
- CDM proceeds to be re-invested in energy efficiency and renewable energy projects.
- Further contributions from world bank and ADB

Indonesia Cleantech Fund

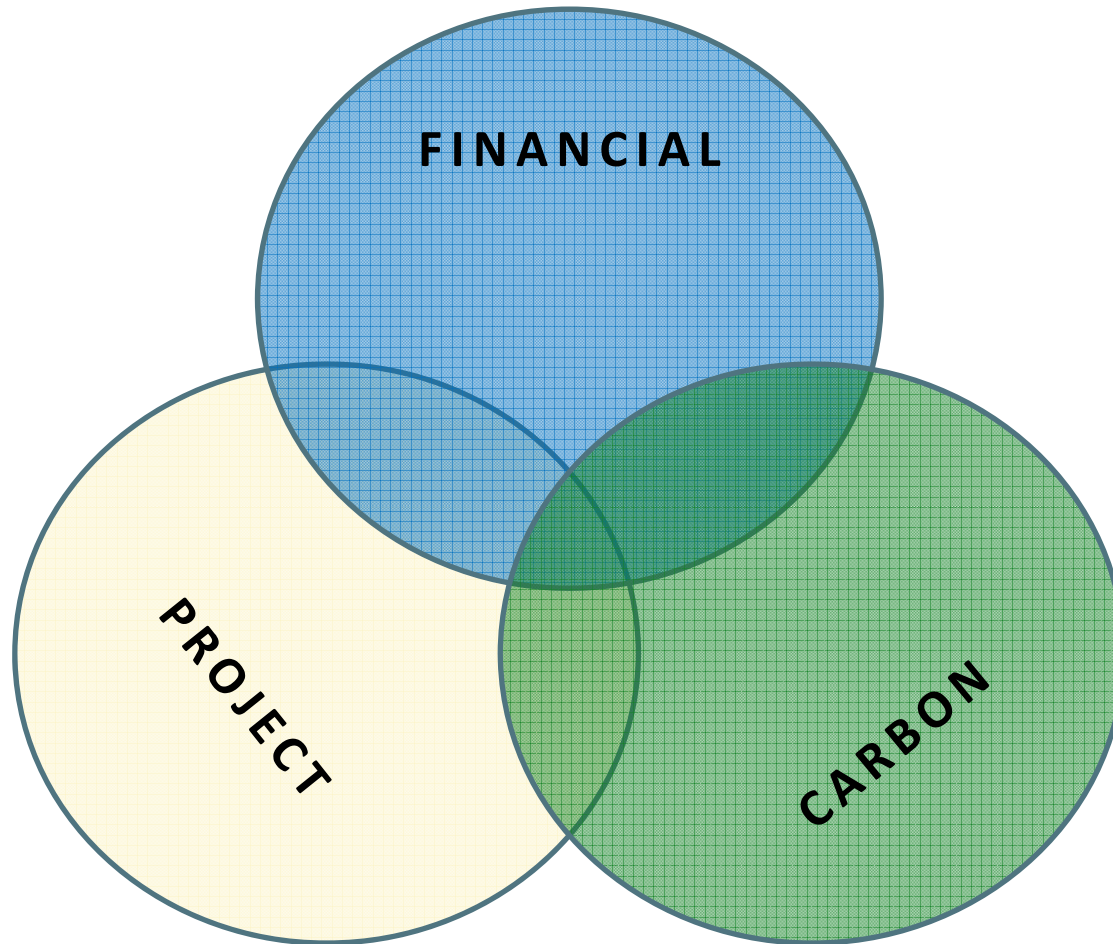
- Indonesia has had more limited success so far in realizing full CDM potential
- Intents to establish Cleantech Fund with focus on water treatment, waste treatment and renewable energy.
- Total targeted fund size: 250 million US\$
- Contributions: Indonesian Sovereign Wealth Fund (10%), global capital markets (90%)

Mitigation Strategies

Integrated approach includes carbon

Include carbon aspects from the early planning stages as it relates to many aspects of the project

➔ Carbon should not be considered an add-on only

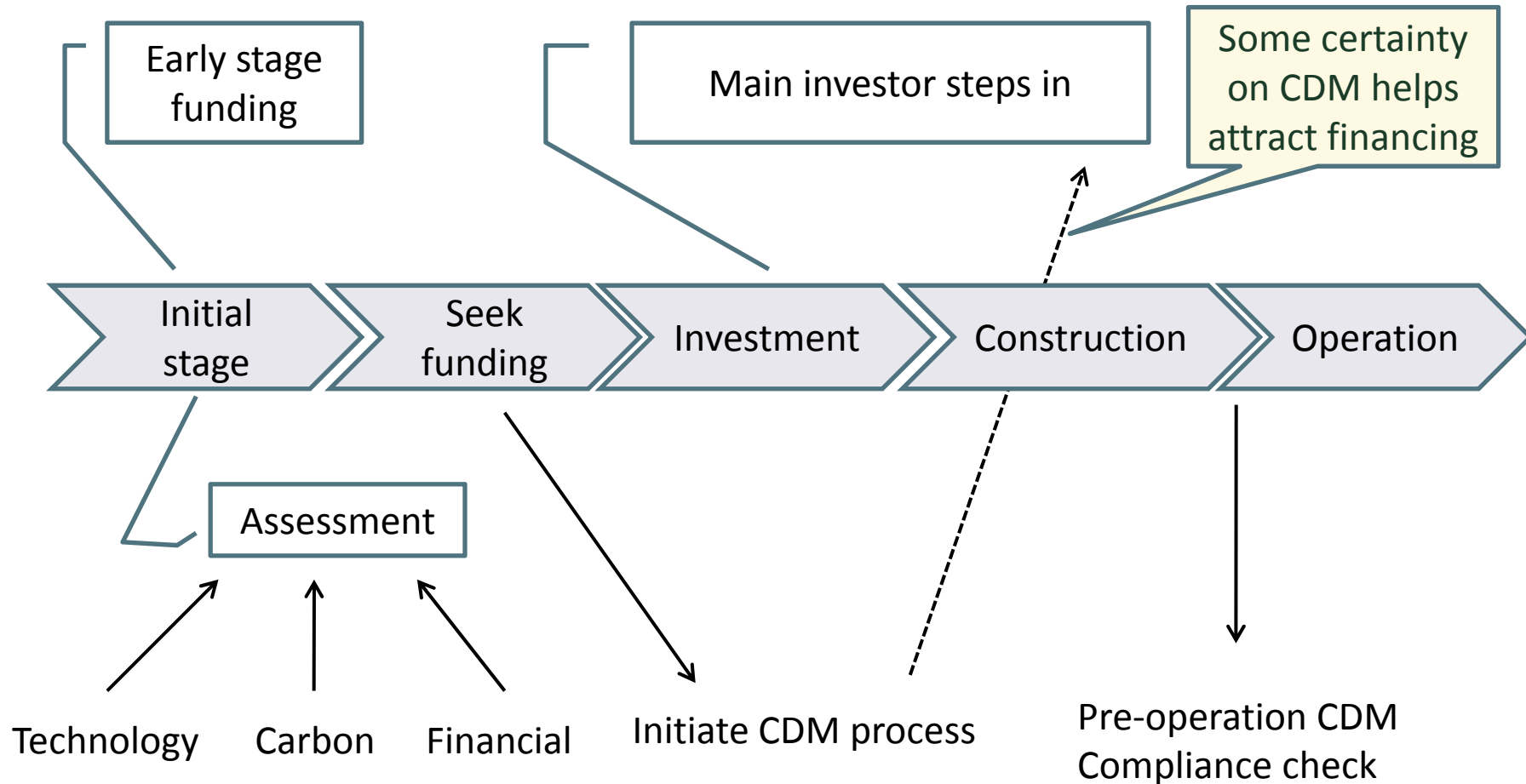


- Identify and assess risks properly
- aim to reduce risk to make project more investable.

Performance risk	<ul style="list-style-type: none"> ▪ Project poorly managed ▪ Monitoring is not carried out well → ▪ Project is deviating from the registered PDD 	Good Monitoring Plan, regular check ups
Financial risk	<ul style="list-style-type: none"> ▪ CDM revenues are relatively uncertain → ▪ Counterparty risks ▪ Project based on wrong estimates and assumptions 	Multiple revenue sources preferred
Regulatory & Protocol risk	<ul style="list-style-type: none"> ▪ Kyoto period ends in 2012 → ▪ What will future price of 1 ton of CO2 be? ▪ Country eligibility → ▪ Technology eligibility 	Conservative values for post 2012 CER's Proper assessment at early stage

Project development sequence

Proper sequencing can improve probability of success:



Improvements to CDM System

What are the needs of potential investors in CDM projects:

- Certainty that CDM revenues can be obtained
- Speed: investors need to know early on whether project is eligible
- Reduced transaction cost / simplification

Solutions:

- Early stage additionality checks
- Positive / negative lists
- Improve efficiency and capacity of UNFCCC system
- Consistency and stability of UN rules & guidance
- Standardized baselines and use of default values

Thank you very much for
your attention

Q & A



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