

CDM Risks and Mitigation

Carbon Markets Asia

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The logo for Renewable COGEN Asia features the word "Renewable" in a green, rounded font with a small sun icon above the 'R' and a red wind turbine icon above the 'e'. Below it, "COGEN" is written in a bold, red, sans-serif font, and "Asia" is written in a blue, italicized, sans-serif font.

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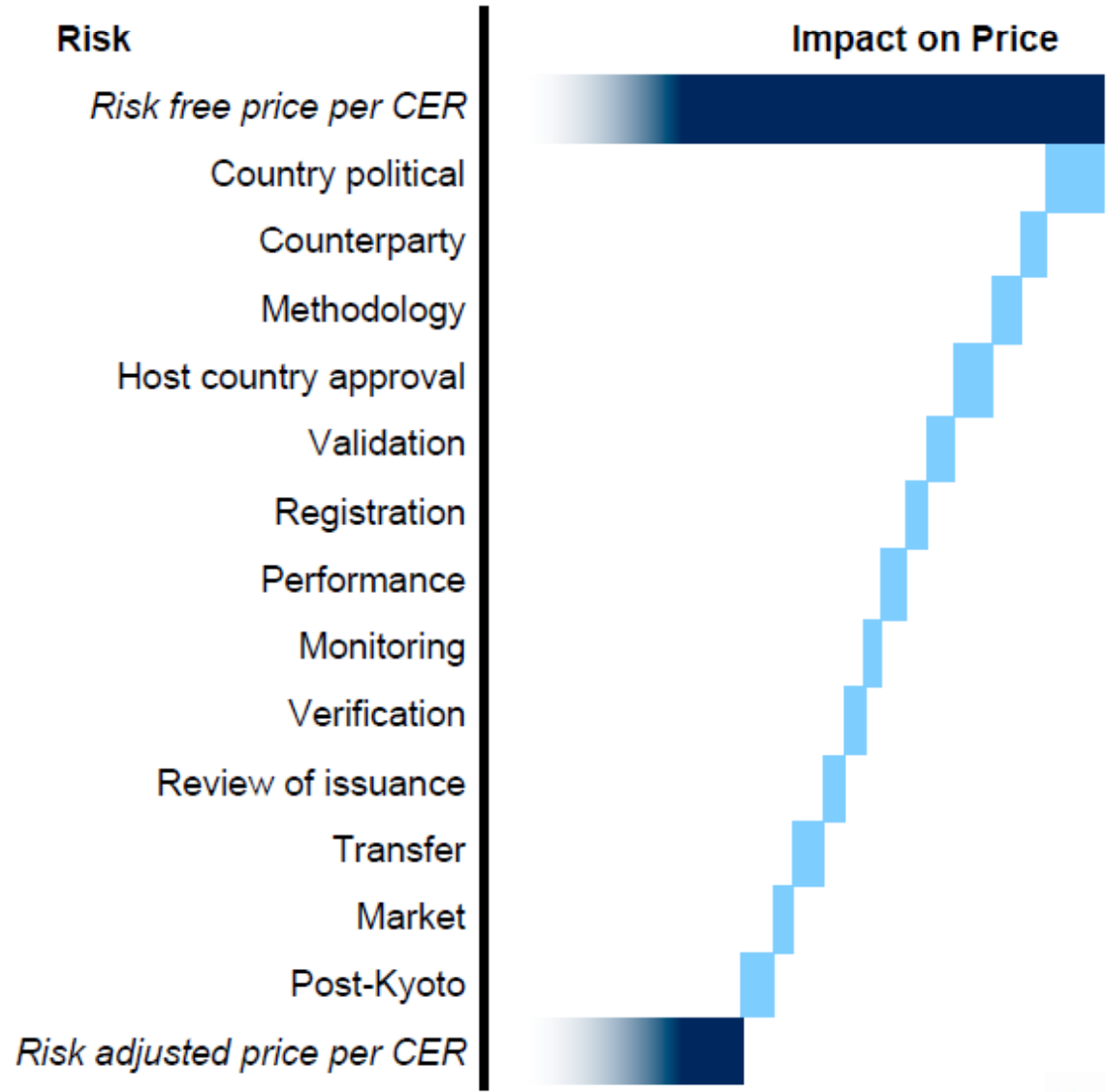


Risks in the Development, Implementation and Operation of CDM Projects

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CDM RISK AND ITS IMPACT ON CER PRICES



Source: UNEP Guidebook on Financing CDM projects (2007)

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CDM RISKS

- Project risks
- Process risks

PROJECT RISKS

- Technology risk
- Long term fuel supply
- Off-take of electricity
- Construction/operation risk
- Cost over-run risk

PROJECT RISKS

- Project under-performance related risk
- Environmental risk
- Force majeure risk
- Approval related risks
- Delays



Process Risks

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METHODOLOGY RISK

- Existing methodology vs. new methodology
- New methodology: costly, time-consuming and risky
- Changes/amendments are time consuming
- Delay in the potential carbon revenue

DNA RISK

- Project vs. host country regulations: Not in compliance-ineligible for CDM
- DNA requirements for project approval
- Delay in the host country approval
- Heavy impact in the timing of CER flow
- Delay in revenue impacts the projects financial viability

HOST COUNTRY RELATED RISK

- Absence of efficient legal system for parties to enforce their rights
- Project investment risks (Foreign direct investment, financial regulation)
- Change in regulations/laws
- Imposition of tax on CERs
- Requirement of licenses
- Changes in the environmental policy

VALIDATION & REGISTRATION RISK

- Additionality argument
- Incorrect CER calculation
- Incomplete monitoring methodology
- Baseline Risk

VALIDATION & REGISTRATION RISK

- Inconsistencies detected by validators (require lot of time to address)
- Validation stage: further time-delay risk
- Requests for registration are reviewed by the CDM registration and issuance team
 - Risk of outright rejection of a project
 - Time-delay
- Capacity constraints on DOEs

PERFORMANCE RISK

- Issued CERs vs. Project CERs: gap
- Continued time lag in construction and commissioning
- Technology performance
- Availability of infrastructure and technology
- Capacity of staff
- Stakeholders and the control

MONITORING AND VERIFICATION RISK

- Monitoring processes
- Monitoring equipment operation
- Improper calibration
- Capacity constraints on DOEs
- Baseline/Emission factor/HC regulation changes

CER BUYER RISK

- Reliability of the buyer
- Financial stability of the buyer
- Buyer vs. Broker

KYOTO PROTOCOL RELATED RISKS

- New and developing international legal framework
- Legal title to CERs
- Project rejection by CDM EB

KYOTO PROTOCOL RELATED RISKS

- Withdrawal of Party from Kyoto Protocol
 - Force Majeure?
 - Effect on registered CDM Projects?
 - Effect on sale of CERs?
- Change of baseline
 - Baseline set out in PDD
 - Will baseline need to be updated?
 - CERs issued based on reduced baseline?

POST KYOTO RISKS

- Uncertainty in international demand
- Uncertainty in recognition for CERs beyond 2012
- Uncertainty over participation
- December 2009 COP in Copenhagen and the decisions

MARKET RISK

- Openly traded commodity: prices fluctuate over time
- Market volatility
- CER entry restriction
- Behaviour of EU ETS and other markets

COUNTRY RISK

- Risk of political and economical instability
- Violence or infrastructural disruptions
- Physical or financial damage to the project
- Impacts the timing as well as the volume of the CERs

ERPA RISKS

- Knowledge on ERPA
- Capacity to understand and negotiate ERPA terms

DELIVERY RISK

- Construction/commissioning risk
- Non/Under performance
- Asset Transfer
- Shortfalls and failures
- Delay in delivery



CDM Risk Mitigation

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CDM RISK MITIGATION

- Risk is allocated to the party best able to bear it
- Allocate the risks between buyer and seller
- Insurance
- Risk allotment:
 - Project risks borne by seller
 - CDM process risk primarily borne by either the seller or buyer
 - ERPA terms

CDM RISK MITIGATION

Methodology risk

- Close observation in the development of CDM EB, methodology panel ...
- Engaging experienced consultant

Host country approval risk

- MOU with the DNAs
- Assurances from the government
- Notifying the DNA well in advance

CDM RISK MITIGATION

Validation and registration risk

- Early start
- Independent evaluation of the project

Monitoring and verification risk

- Services of CDM consultants with experience in the specific requirements of monitoring
- Due diligence

CDM RISK MITIGATION

Issuance risk

- Liquidated damages clauses in contracts with DOEs
- Independent checks on the work of the DOE

Transfer risk

- Making the CER buyer a project participant
- Compensation clauses in the ERPA

CDM RISK MITIGATION

Market risk

- Minimum revenue stream to the seller and maximum ceiling to the buyer
- More reliable forecast models of prices
- Hedge using a combination of fixed, floating & holding of CERs

CDM RISK MITIGATION

Post Kyoto risk

- CER sales to carbon funds that guarantee payment for CERs beyond 2012
- Hedge or 'lock in' future CER prices through financial derivatives

CDM RISK MITIGATION

Delivery

- Monitor effectively with CDM consultants
- Use escrow accounts for CERs and revenue streams
- Conduct independent checks on DOE project work
- Add the CER buyer as a project participant

CDM RISK MITIGATION

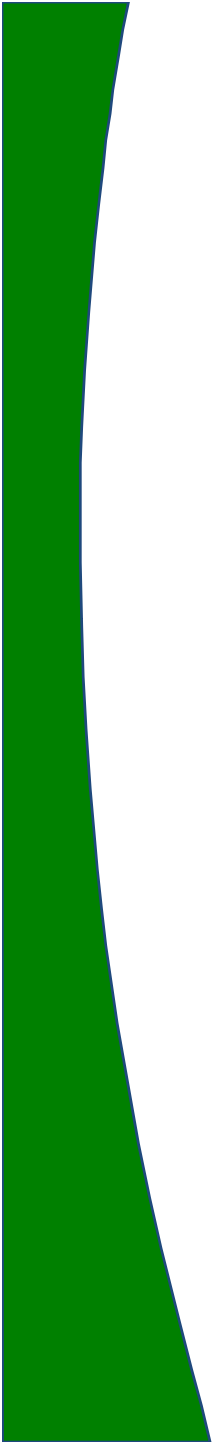
ERPA

- Price: Fixed price or fixed price with adjustment
- Modalities of payment: Upfront or after realization
- Penalties: Late payment, increase in inflation

CDM RISK MITIGATION

ERPA

- Taxes: responsibility?
- Share of proceeds: responsibility?
- Increased cost: responsibility?
- Development cost: responsibility?



Lessons learnt from several CDM project case studies

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LESSONS LEARNT

- Check the CDM applicability
- Plan systematically
- Avoid delays: plan for 6 month project cycle (from PDD until registration)
- Engage only qualified consultants

LESSONS LEARNT

- Conduct the stakeholder consultation properly
- Give importance to financial & technical additionality
- Problems faced in host country approval and regulations
- Sustainable development criteria: sometime different from CDM criteria

LESSONS LEARNT

- Source of energy in the absence of the project: more clarity is needed
- Historical records: sometimes difficult to get
- CER calculations: conservativeness
- Leakage: analyse thoroughly

LESSONS LEARNT

- Key assumptions and source
- Grid emission factor: correct source
- Diesel/fossil fuel emissions: is it justifiable

LESSONS LEARNT

- CER Estimation: Through methodology vs. practicality
- CER realization
- Comparison of the technology details with the contracts
- Validation
 - Proof of all documents

LESSONS LEARNT

- CDM development cost
- Anticipate validation fee: very high these days
- Decide on who will bear the development cost
- Development: Project owner? CER buyer? Broker?

LESSONS LEARNT

- Technical due diligence of the project
- Financial due diligence of the project
- Keep an eye on the potential change in local regulation
- Reasonable expectation on CER price
- CER sales: fixed price, floating price and holding of CERs (trade-off)

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Thank You