

Financing CDM Projects

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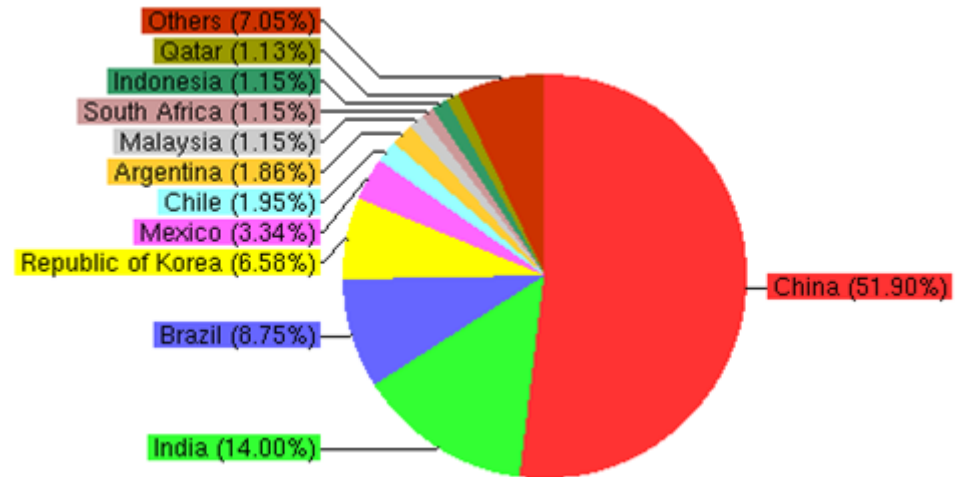
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Snapshot of the CDM Market

Expected average annual CERs from registered projects by host party. Total: 221,996,290



CDM projects registered by the CDM Executive Board in India as at 15 November 2006

Project category	Number of projects	Expected annual CO ₂ e reductions up to 2012 (in 1,000 t)
Renewable energies	83	approx. 2,802
Biomass/Biogas	51	approx. 1,810
Small hydropower	16	approx. 449
Solar energy	1	approx. 1
Windpower	15	approx. 542
Energy efficiency	34	approx. 2,123
Cement industry	9	approx. 869
Other	25	approx. 1,254
Other	5	approx. 7,422
Industrial gases (oxidation of HFC23)	2	approx. 7,227
Fuel switch	2	approx. 155
Landfill gas	1	approx. 40
Total	122	approx. 12,348

CO₂e = carbon dioxide equivalent

Source: UNFCCC website, UNEP Risø centre

<http://cdm.unfccc.int> (c) 02.09.2008 15:53



Indian CDM Market - Sectors

Projects with Indian host country approval as at November 2006)*

Project category	Number of projects
Renewable energies	246
Energy efficiency	134
Industrial and other gases (HFC, PCF, methane)	29
Fuel switch	22
Solid waste treatment	8
Total	439

*) For detailed project information see website: www.cdmindia.nic.in.

Source: Ministry of Environment and Forests

Financing Options/ Models

✓ Senior Loans or Debt/ Bridge Financing

Wherein typical models are

▪ Financing Models:

- Limited recourse financing
- Corporate Financing
- Monetization of CERs through ERPAs

✓ Missing Pieces:

- External Commercial Borrowing
- Mezzanine Debt
- Volumetric Guarantees

From a Lenders Perspective: Financial Assessment Process of CDM Projects

- ✓ **Development of Project Model**
 - Assumptions, calculations, outputs

- ✓ **Analysis of Financial Indicators (inclusive of CER flows)**
 - Project NPV, IRR, Equity IRR, EBITDA, Interest Cover Ratio, DSCR

- ✓ **Sensitivity Analysis**
 - Undertaken if the above tests are cleared. Used to determine which of the financial model's input assumptions has greatest impact on financial outcome

- ✓ **Risk Assessment/Mitigation**
 - Planning phase: feasibility risk, permit risks
 - Construction phase: time, capital over-run risks
 - Operation phase: technology, market, supply, operating, political/legal/regulatory, financial, counterparty risks

- ✓ **Technology Assessment**
 - Undertaken by external parties; banks are not equipped to assess PDD/underlying technologies etc

From a Lender's Perspective: Issues

- ✓ **External Issues:**
- ✓ Post Kyoto uncertainty
- ✓ Lack of clarity on treatment of CER revenue under Indian Accounting standards poses evaluation problems.
- ✓ RBI, Ministries of Finance and Commerce need to clarify taxation, cross border financing and related issues.
- ✓ Bilateral ERPA requires project developers to have strong credit rating; many developers lack sufficient credit history/rating leading to excessive reliance on Buyer's credit history

From a Lender's Perspective: Issues

✓ **Process Related Issues:**

- ✓ Lack of knowledge of CDM modalities/procedures and financial appraisal methods make it difficult to evaluate risk, curtailing local bank participation
- ✓ Lack of history and experience of risks with CDM Projects :
 - Technology risks, Delivery risks, Market risks, supply risks, Operating risks, Financial risks, Methodology risks, Political/Legal/Regulatory, Counterparty risks, Monitoring/Verification risks; Credit risks of buyers under ERPA
- ✓ Risk related to generation of CERs (particularly in monetisation transactions) do not decrease significantly until after a project is commissioned, impacting terms of financing
- ✓ High transaction costs pertaining to ERPA
- ✓ Banks require time to assess risk through the financial assessment process; often project developers require capital at short notice

From a Lender's Perspective: Issues (contd.)

- ✓ **Bank Reaction:**
- ✓ Owing to above, banks like to base funding on balance sheet/corporate risk and credit rating. This rules out small developers.
- ✓ Projects land up being placed in higher risk category leading to “difficult” repayment terms /interest rates
- ✓ Banks are not allowed to utilize ECB route; forced to resort to expensive Rupee borrowing
- ✓ 48% of projects in the CDM pipeline are small scale*. Smaller financing requirements cause higher transaction costs per unit of finance

* According to EcoSecurities, Financing CDM Projects: Approaches and Lessons Learned

Mitigating Risk

✓ Financial risks:

- Match currency of debt to currency of revenues (CERs in hard currency help)
- Establish overseas escrow accounts for deposit of payments from buyers, safeguarding revenue stream for debt service and addressing currency risk
- Structure loan repayments to match CER payment schedule (or vice versa)
- Market risks: Can assign some risk to buyer through ERPA
- Raise cash for capital investment through ERPA
- Securitize CERs
- Work with private insurers to provide credit enhancement
- Most CER buyers have good credit ratings



Mitigating Risk (contd.)

✓ **Country risks:**

- Partial risk guarantees such as assurances from the host government w.r.t. CER nationalization, ERPA re-negotiation, availability of key project inputs

✓ **Delivery risks:**

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

✓ **CDM risks**

- Small scale projects can be bundled, increasing loan size without proportional increase in project risk
- Sell CERs to carbon funds which guarantee some payment for CERs post 2012

Thank you

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