

CDM Project Finance Issues & Opportunities

CDM Opportunities For FIs

ADB-CDM Capacity Building Project

January 24 - 25, 2006

Mumbai

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Outline of Presentation

Opportunities

- **Project finance** for clean energy projects in India
- **CDM - repercussions on project finance deals**
- **Off balance sheet financing of clean energy project vs. pure vanilla lending**
- **Road ahead for carbon finance in the gamut of project funding - project finance as well as corporate finance**
Likely emergence of mixed financing

Issues

- **Regulatory developments and bottlenecks**
- **Impact on RE/EE projects and CDM deals**
- **CDM EB guidance**



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Project Finance for Clean Energy in India



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What is a Clean Energy Project?

**Any project employing a
“better than *business-as-usual*” technology
that substantially reduces
GHG emissions per unit of
energy produced/consumed or
product/service produced/delivered**

Renewable Energy, energy efficiency, switch to cleaner fuels, waste to energy projects that satisfy the above could be termed as

Clean Energy Projects



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Barriers in Financing CEP

- Many RE sectors with exception of wind and biomass are still not commercially viable. Many of them like wind and SHP exhibit low PLF.
- Lower IRRs with conventional funding sources
- EE Projects may comprise several small subprojects that pose problems in bundling them together
- Difficulties in structuring the project as stand alone
- Savings in energy consumption does not form a revenue stream
- Less appreciation from decision makers
- Low visibility to top management hence lower interest among staff



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Clean Energy Project Finance

Clean Energy Projects = **Renewable Energy** + Energy Efficiency improvement + Fuel Switch

- **Renewable Energy financing mainly through:**

- IREDA

IREDA constituted in 1987 by GOI MNES

As of March 31, 2005 -Loan Commitment – INR 69.5 Billion, Disbursement – INR 37 Billion Power Generation Capacity – 2500 MW

- IDFC

IDFC constituted in 1998 has a mission in line with its multilateral shareholders viz. ADB, World Bank to be environmentally responsible.

As of March 31, 2004 financed around 12 RE projects

Major sectors – Minihydel, biomass, MSW to energy and wind

- PFC/REC

Public sector FIs Promoted by Ministry of Power have begun funding state owned and private power projects including biomass/bagasse cogeneration, wind and mini hydel

- Banks: Few banks have begun SBI, Canara, Syndicate (SFCBI). However, no concerted coordinated effort followed



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Clean Energy Project Finance

Clean Energy Projects = Renewable Energy + Energy Efficiency improvement + Fuel Switch

- **Energy Efficiency Financing**

- Traditionally a part of industrial modernization projects financed by Development FIs
- Later some World Bank/ADB funded programmes
 - e.g. ICICI EESP, IDBI EE line
- Off late some dedicated funding lines at IREDA – by IBRD
- SBI and few banks include EE in their Technology Up-Tech activity
- GTZ, USAID and other bilateral institutions programmes
- Fuel Switching projects get camouflaged as modernization/expansion programmes



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Typical Financing Options for CEP

- **Balance Sheet Financing**
 - ploughed back profits or internal cash generation
 - Corporate financing by FIs/Banks
 - Lease or Asset finance
- **Off- Balance Sheet Financing**
 - Project Finance or non recourse finance
 - SPV based finance
- **Third Party Financing**
 - ESCO models
 - Energy Management Companies



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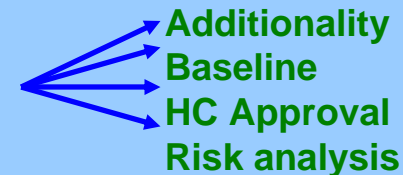
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Fit for Project Finance Structure

- Structure dependent on revenue streams generated by the project
- Project assets serve as lenders security
- No or limited recourse to the promoters' books i.e. "off" balance sheet finance
- Ideal for large infrastructure projects and needs proper legal and regulatory framework
- CER revenues offer only "Icing on the cake"



Carbon Finance
Analysis



Conventional
Due
Diligence



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Off Balance Sheet Financing

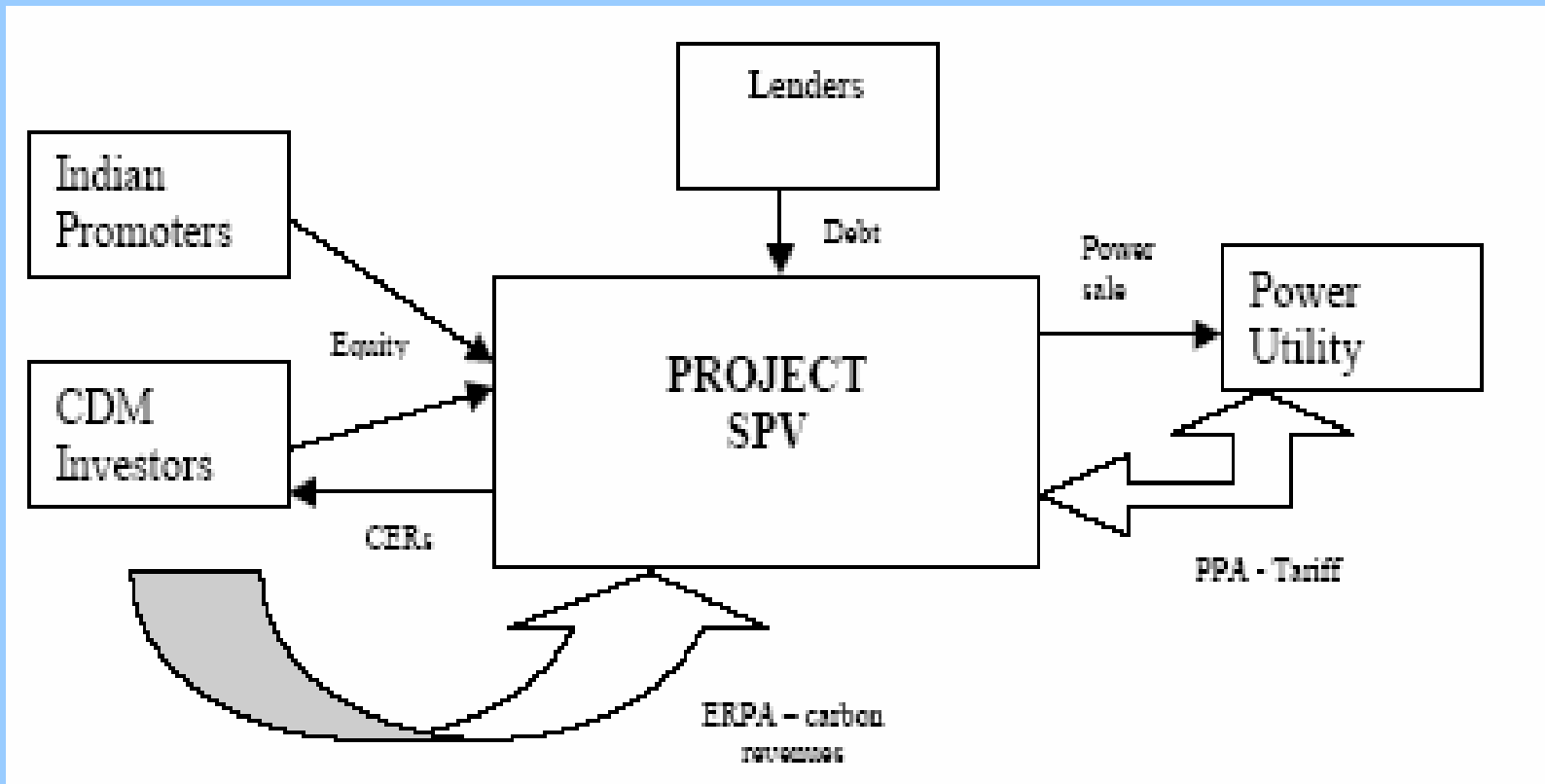
- **Is already a business as usual in Infrastructure finance especially the independent power producers (IPP) projects; CEPs would essentially add a category**
- **Commercial Banks, flush with funds are also acquiring skills in project finance deals**
- **Experience in sectors like bagasse based cogeneration and wind has shown the direction**
- **Thus, the off balance sheet financing would soon be the mainstay of CEP funding**
- **Electric Power Policy is expected to bring large fresh investments in power sector**
- **Availability of funds to enable such growth is crucial – Project finance and market based instruments are likely to play important role**



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CDM Project Structure



Financing Structures for CDM Projects in India and Capacity Building Options for EU-Indo Collaboration,
Vinay Deodhar, Axel Michaelowa, Matthias Krey HWWA Discussion Paper 247, September 2003



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CDM - Repercussions on Project Finance Deals



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Results of the Survey of FIs

A survey of Indian FIs to know awareness about Carbon finance among bankers last year

- **Majority of specialized FIs like IDFC, IREDA aware of Carbon Finance but not sure its usefulness in off balance sheet deals**
- **Commercial Banks are significantly unaware of Carbon revenues (barring few exceptions)**
- **Vague ideas about carbon trading**
- **RE/EE financing taken up by stray branches in various zones but lack of coordination and data sharing**



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Clean Energy and Project Finance

- Insistence on security mechanism originating from the apprehensions about promoters credentials and fear of asset turning non-performing
- Many hurdles faced at the state agencies level
- Power being a “Concurrent” subject (Both Central and State Governments have power/responsibilities)
- However, the potential for future fund requirement is phenomenal in view of mandates from **Electricity Act 2003** and Energy Conservation Act 2001
- Many of the commercial banks like SBI and quasi FIs like LIC are gearing up to meet the fund requirements



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Bright Future for Infrastructure Project Financing

- Core infrastructure sectors continue to drive the growth for project finance
- Recent acceptance of **Power Policy** by the cabinet has been a shot in arm
- Few FIs like ICICI Bank are adopting complex project structures for easing fund availability while mitigating risks
- These include, full debt funding by collateralizing existing cash flows, third party credit enhancements, take-out financing and possibility of issuing tradable bonds in the emerging debt market



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Repercussions of Market Based Instruments on Finance Sector

- Instruments like CDM CERs show a direction for **Innovation** in the financial engineering
- Traditionally conservative FIs are interested in new flexible funding architecture
- Scope and encouragement for innovative project structure
- In tandem with emerging debt market the market for the commodities like **Emission Reductions**, weather derivatives and new insurance products is bright



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Issues in CDM Project Finance



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Regulatory Developments

- **Electricity Act 2003**
- **National Electricity Policy**
- **Energy Conservation Act 2001**
- **State Electricity Regulations**
- **Tariff Policy**
- **Misc. regulations e.g.**
 - MSW (M&H) Rules 2000
 - Notifications



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Regulatory Developments ..2

- **Electricity Act 2003 – Section 86 (1)e**

“promote congeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licence”

provides the essential boost for RE projects. However, this RPO may be tantamount to a baseline.

- **Tariff Policy clause 5.1 (i)**

“**Benefits under CDM** Tariff fixation for all electricity projects (generation, transmission and distribution) that result in lower Green House Gas (GHG) emissions than the relevant base line should take into account the benefits obtained from the Clean Development Mechanism (CDM) into consideration, in a manner so as to provide adequate incentive to the project developers”

- **SERC pronouncements in the past for share of CER benefits with utilities or pass through the tariff**



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Impacts on CDM Projects

- Any requirement for sharing the CERs discourages promoters from making additional efforts for CDM registration
- Uncertainty with respect to Additionality of projects in grid connected RE as RPO obligations would be effective April 2006.
- Rules like MSW Rules 2000 may make MSW to Energy projects baseline once compliance crosses 50% (as per AM 0012)



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EB Sectoral Policies Clarification

- At the 22nd meeting EB clarified that only E+ policies issued prior to 11/12/97 (date of adoption of KP by COP) shall be taken into account and E- policies issued after 11/11/01 (date of adoption of CDM M&P by COP) need not be taken into account, while deciding baseline scenario
- This would assist Indian project developers as most of RPOs have been issued after 2004 - 05



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Road Ahead for Carbon Finance

- Carbon finance has taken off with coming into force of Kyoto protocol a year ago
- A large number of CEPs are being structured as CDM project activity – Estimated over 80 consultants assisting project promoters!
- A vibrant CDM National Authority set up by GOI has formalized modalities and begun according “**Host Country**” clearance
- Experience with project registration at CDM Executive Board is increasing
- Finally good price for CERs will provide the necessary boost for carbon finance
- CERs expected to boost the project **IRR** in the range of **1 -5%** depending on the GHG abated and CER price



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Road Ahead for Carbon Finance

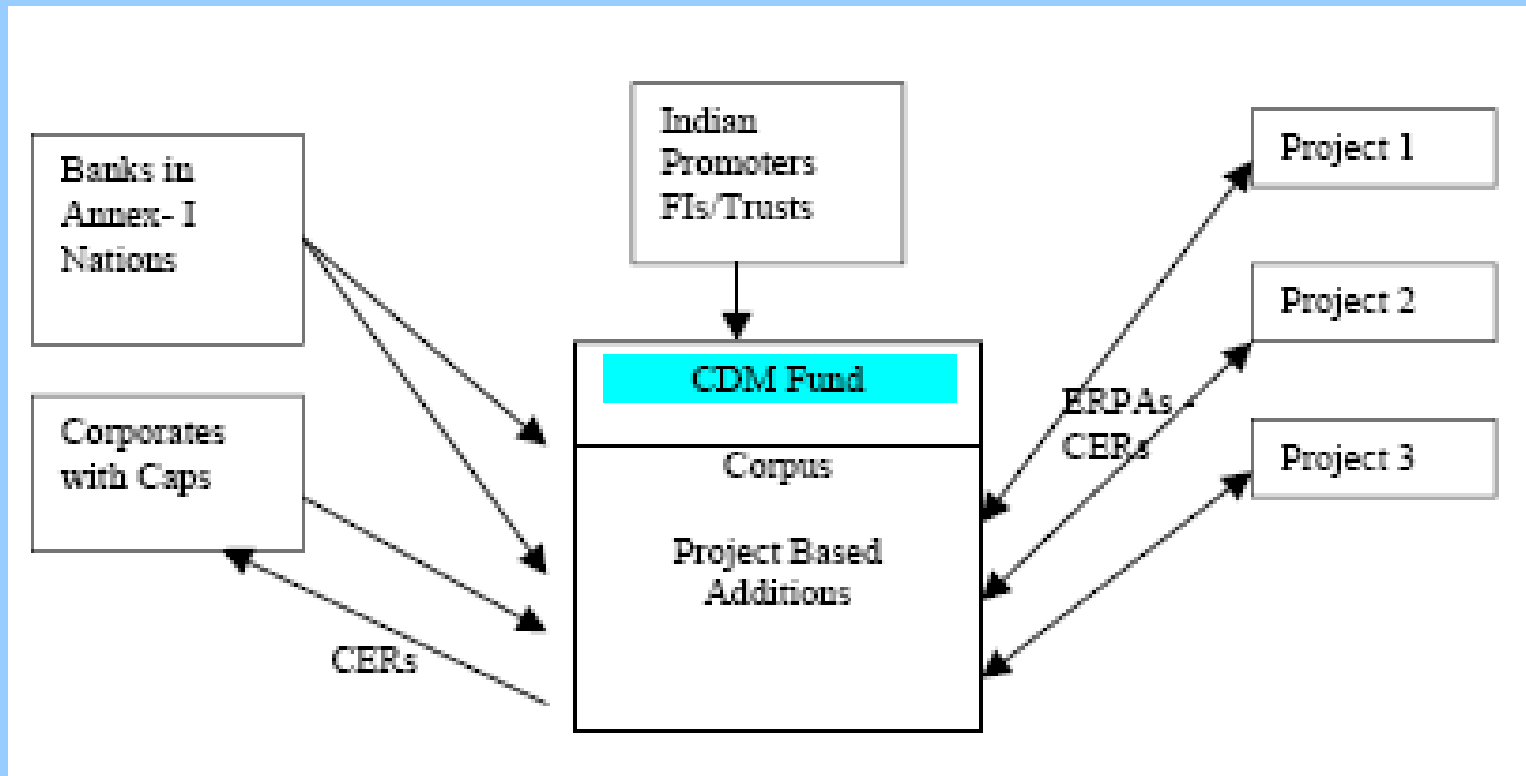
- Many international FIs and bilateral agencies viz. KfW, JBIC, World Bank, GTZ, FCO and Private firms in EU have promoted Carbon Funds
- They would cater to investors with targets under the Kyoto protocol for meeting their emission reduction obligations
- Indian financial sector needs to be ready to take up CDM projects by adopting the project finance structure
- Need to improve the reach to cover SME sector
- Need for a CDM Project Fund and a vibrant Domestic ER trading system



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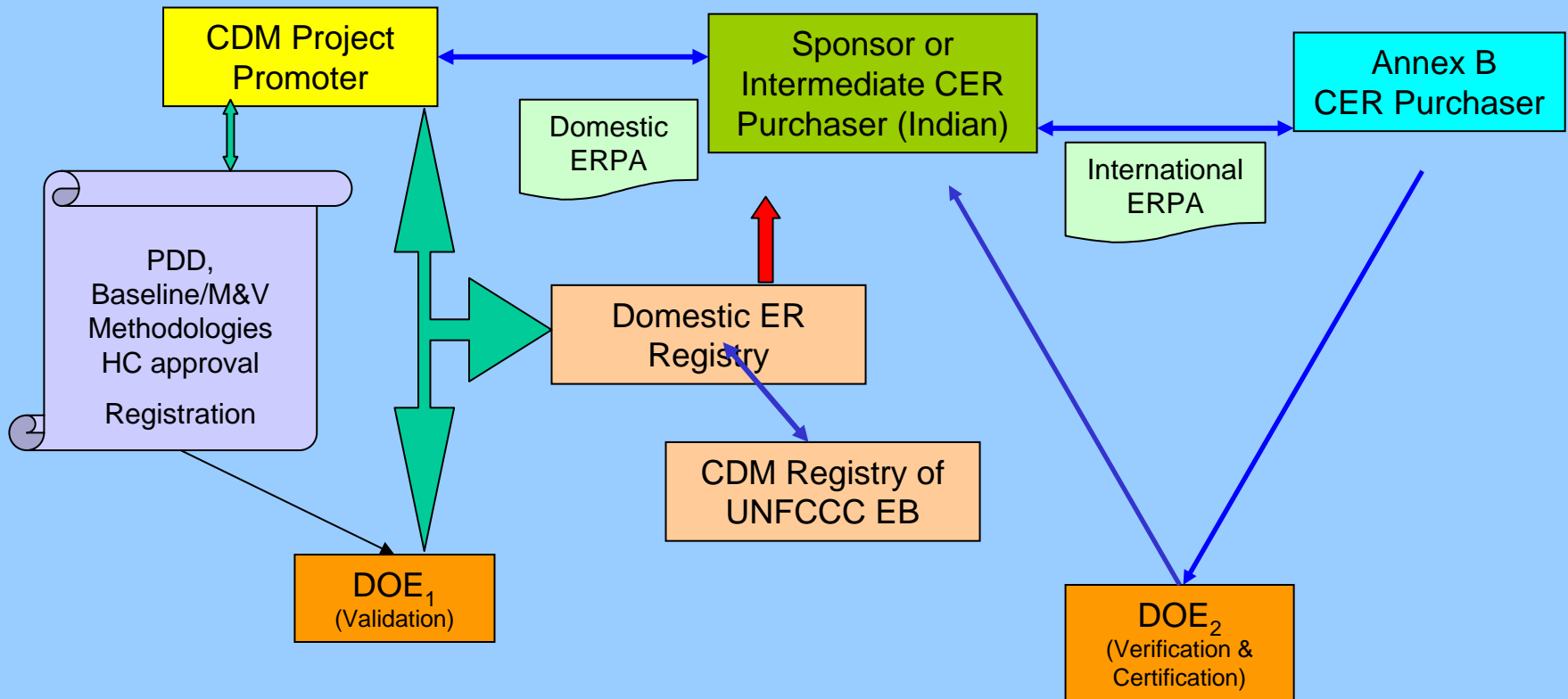
CDM Fund Structure



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Suggested ER Trading System



Operational Features

- Primary responsibility of development of the CDM Project, baseline/M&V methodologies, PDD, host country approval and hiring of DOE₁ for validating the document lies with the promoter
- The project is registered with an ER Registry, which also conducts background due diligence and acts as “depository” to market the project to Indian Corporates and HNIs
- Indian Sponsors/Intermediaries interact with the Registry, DOE₁ and do their own due diligence and enter into a domestic ERPA with Promoters
- They hire the DOE₂ for verification and certification of project CERs
- They scout out for international CER purchasers from investors in nations covered in KP Annex B and negotiate and sign International ERPA
- Both interact with the DOE₂
- Actual transaction takes place when the project performs and Annex B party pays to Sponsor and they in turn pay off the original promoter
- Project performance is the key to the whole transaction structure



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Co-Benefits of the ER Trading System

- Encouragement to small promoters for taking up CDM project development
- Possible development of native DOEs
- Experience with drafting and operating ERPAs
- Increasing awareness among industry on resource conservation and eco efficiency improvement
- A positive step towards adoption of Life Cycle cost/ Full cost concepts
- Increased level of understanding through learning by doing
- Overall development of Commodities market and new tradable products e.g. weather futures
- Transfer of learning of market based mechanisms to other sector
- Need based structured products development e.g. CER insurance
- Spread of sustainable development concepts like Triple Bottom line
- **Useful for preparation for Cap in future for India**



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About Clean Tech Solutions

- Clean Tech Solutions – a trim consulting organization
- Specializing in cleaner **techno-commercial** solutions
- Thrust on **Practicable**, **Effective** and **Affordable** options that result in **Bankable** projects
- A **Participative** approach – Association with clients at each stage
- Cleaner production technologies, clean energy projects, waste to energy, carbon finance
- **Collaboration** with International consultants



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CTS Services

- **Carbon Finance for Clean Energy Projects**
 - Promoter analysis, Baseline and M&V Methodology, PDD, Additionality evaluation and ERPA development
- **Urban Bodies/State Administration – Solid Waste Management**
 - SWM policy development, Integrated MSW management Roadmap development
- **Industrial Environmental Analysis**
 - Operations review and emissions inventory
- **Energy Efficiency and Renewable Energy Project development**
 - DPR Preparation, finance syndication
- **Urban Bodies/State Administration Water Supply Networks**
- **Project environmental reviews for multi and bilateral aid agencies**



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Thank you for your attention!!

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