

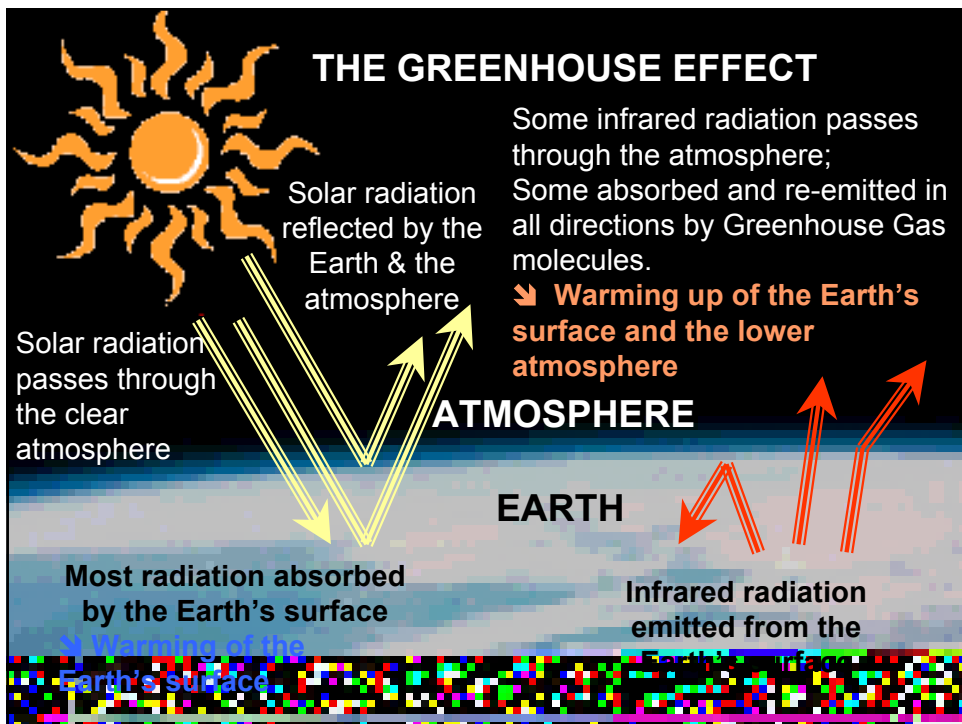
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## **CDM-As a financing tool**

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### **2.1. What is CDM?**

- Market-based instrument to reduce Green House Gas (GHG) emissions
  - GHG emission reductions are transferred to "Annex 1 (Annex B of KP) Countries"
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## Green House Gases

- ◆ The anthropogenic emissions of GHG include
  - Carbon Dioxide (CO<sub>2</sub>)
  - Methane (CH<sub>4</sub>)
  - Nitrous Oxides (N<sub>2</sub>O & NO<sub>x</sub>)
  - Hydrofluorocarbons (HFCs)
  - Perfluorocarbons (PFCs)
  - Sulphur Hexafluoride (SF<sub>6</sub>)
- ◆ CO<sub>2</sub> accounts for nearly 70% of total anthropogenic GHG emissions

## Impact of GHG emissions

- ◆ Change in temperature
- ◆ Rise in sea levels
- ◆ Change in Precipitation Pattern
- ◆ Change in soil moisture

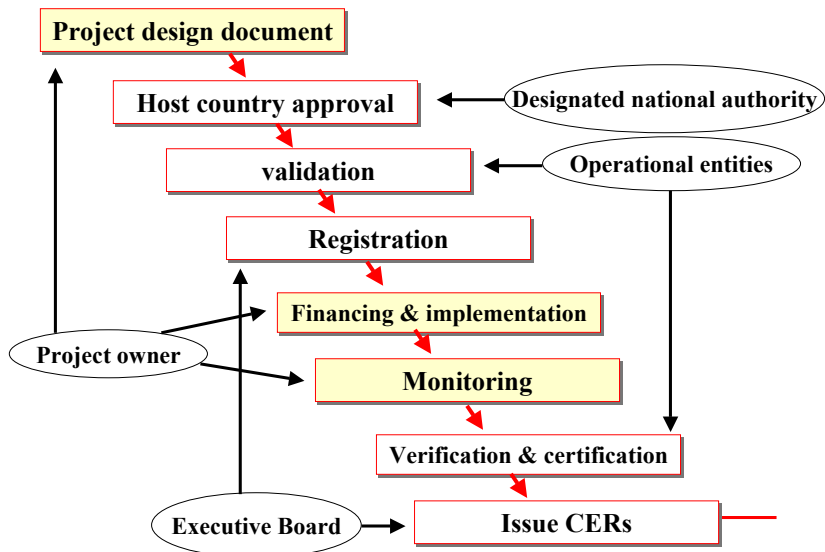
## 2.3. Market Basis of CDM

- ◆ Kyoto Protocol
- ◆ For GHG reduction projects similar to CDM
  - Voluntary Agreements
  - US commitments (especially in some states)

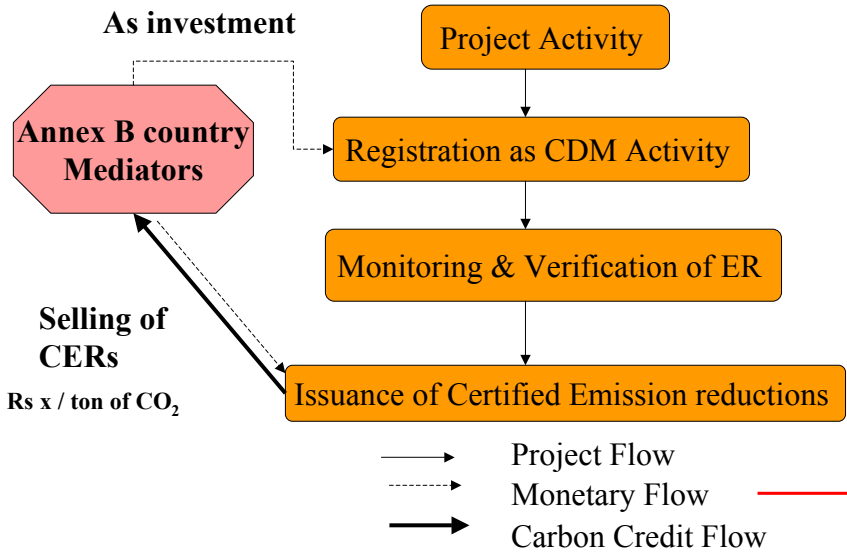
## 2.4 Typical CDM Projects

- ◆ Methane capture in land fields
- ◆ Methane capture in waste water treatment plants
- ◆ Fuel switch projects
- ◆ Energy Efficiency Projects
- ◆ Renewable Energy Projects
- ◆ Cogeneration

### Interactions involved in a typical CDM project and actors responsible



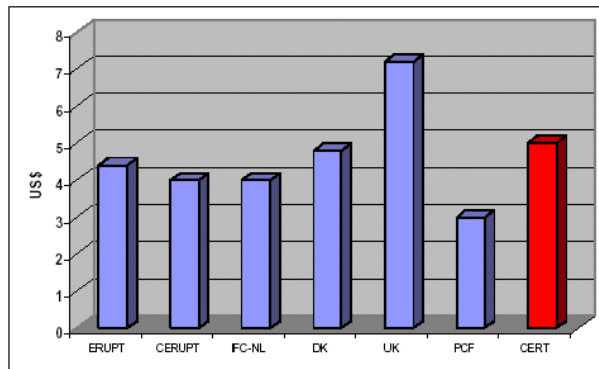
## How Money flows in ?



### 3.3. Most recent Prices and Volumes

Scenario	world market price per tC	Traded volumes in MtC (imports Annex B)	export revenues non-Annex B in millions
Low BAU estimates	1	390-420	20-40
Medium BAU estimates	2-7	460-530	220-840
high BAU estimates	7-15	520-580	1'500-3'400

### 3.4. Real Market Prices per ton



### 3.5. Conclusions

- ◆ GHG prices might be lower than have thought initially
- ◆ Volumes of GHG trading will be lower than Expected
- ◆ But: there is an increasing market and some projects are being financed

## CDM: Situation in India

- ◆ Projects can get interim approval from the Government of India
  - ◆ A number of projects have already been approved
  - ◆ There exist provision approval criteria
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## Indian Provisional Approval Criteria

- ◆ Additionalities
    - Emission Additionality
    - Financial Additionality
    - Technological Additionality
  - ◆ Sustainable Development Indicators
    - Social well-being
    - Economic well-being
    - Environmental well-being
    - Technological well-being
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## Indian Provisional Approval Criteria

### ◆ Baselines

- Precise, transparent, comparable and workable
- Should avoid overestimation
- Methodology reliable
- System boundaries
- Project life time clearly mentioned
- Others

## Indian Provisional Approval Criteria

### ◆ Financial Indicators

- Flow of additional investment
- Cost effectiveness
- IRR with and without CERs
- Liquidity, N.P.V., cost benefit analysis
- Inclusion of CDM specific costs
- others



## Indian Provisional Approval Criteria

- ◆ Technological Feasibility
  - Proposed technology / process
  - Technical complexities
  - Preliminary design
  - Technological reliability
  - Organizational and management plan

## Conclusions

- ◆ CDM is an innovative option
- ◆ Demand is limited
- ◆ Price per ton CO<sub>2</sub>e low (3 - 5 \$/tCO<sub>2</sub>e)
- ◆ Significant transaction costs