

## **Accelerating clean technology commercialisation in India**

**OR**

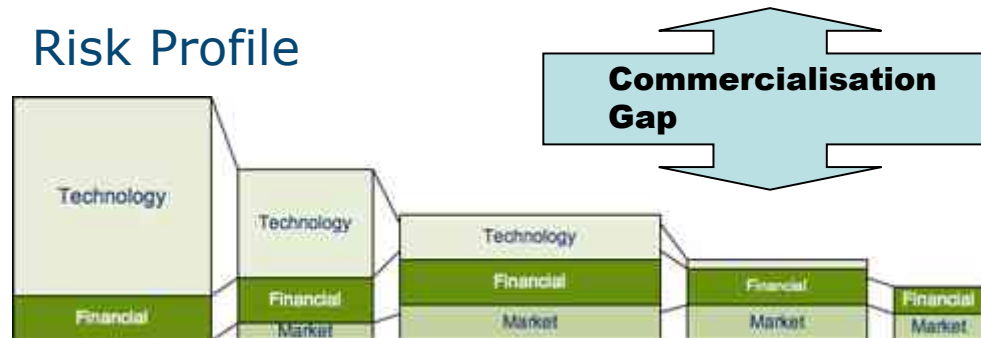
**“How do we ensure that companies who have successfully negotiated the innovation gap are able to then able to bridge the commercialisation gap and make fortunes for their owners?”**

## Bridging the commercialisation gap

### Stages of Technology Development



### Risk Profile



## What contributes to successful technology commercialisation?

- **Access to adequate funding**
- **Supportive shareholders**
- **Good management with a clear strategy**
- **Sound market knowledge**
- **Market access**
- **Entrepreneurial vision**
- **Supportive institutional mechanisms**
- **Supportive environment in country**

## Why do companies get caught in the commercialisation gap?

- **POOR Access to adequate funding**
- **UN Supportive shareholders**
- **POOR management with un UNFOCUSED strategy**
- **LACK OF entrepreneurial vision**
- **LACK OF market knowledge**
- **POOR market access**
- **UNsupportive institutional mechanisms**
- **UNsupportive environment in country**

## Follow my leader

\$'bn	Early	1st	1st round &	Early vs later
	stage	round	follow on	(%)
				later (%)
2003	4	16	23	17%
2004	8	23	40	20%
2005	14	24	52	27%
2006 to Q3	9	12	38	24%



## The role of CDM in helping to achieve technology commercialisation

- **Officially CDM has an indirect role in assisting technology transfer, within a wider and more specific mandate under Kyoto**
- **In practice, CDM has had an important role to play in helping to introduce new technologies:**
  - 40% of all CDM projects claimed an element of technology transfer
  - These projects that accounted for over 60% of GHG emissions abatement under CDM
  - Based on 2005/6 data, this would imply a total €9 billion investment in projects claiming an element of technology transfer

## Could it be made to work better for technology commercialisation?

- **Credit system stability**
- **Carbon price stability**
- **Information availability**
- **Reinforcement of technology innovation as an additionality hurdle**
- **Differential credits**

## Differential credits

• Hugely disproportionate impact on financial returns from higher potency greenhouse gases:

Project type	CDM impact on IRR (%)
Wind/solar/hydro/geothermal	0.5-3
Biomass	3-7
MSW	5-60
HFCs	>500

Source: UNEP

## Alternatives to CDM in helping to achieve commercialisation

- **P2E2 – Pollution Prevention & Energy Efficiency**
- **US environmental financing initiative**
- **Uses existing legal and financial systems to mobilize private sector capital, management and technology**
- **Form of creative financing and public-private partnership**
  - Uses ADB or IFC loan guarantees and US Export-Import credits and guarantees to enable commercial banks to make working capital loans, equipment leases and trade finance available to Environment and Energy Service Companies
  - EESCO's in turn carry out P2E2 technology and equipment upgrade work on factories, power plants and real estate developments
- **Unlike CDM, there's no additionality test, and no sensitivity to high project returns**

## Role of the public sector

- **Clear IP protection and process**
- **Innovation support mechanisms**
- **Funding initiatives**
- **Financial incentives – tax treatment etc**
- **Removal of barriers to change**
- **Minimum standards in certain technology areas – cars, buildings**
- **Knowledge transfer networks**
- **Removal of trade barriers – direct and indirect (eg standards)**

## How well does India fare in using the CDM for technology transfer?

Country	TT (%)	Projects with TT	FDI index
Egypt	100	5	Above potential
Mexico	94	142	Below potential
Indonesia	86	18	Under-performer
Morocco	80	4	Above potential
Argentina	78	10	Below potential
Malaysia	70	29	Front-runner
Thailand	65	18	Front-runner
Vietnam	50	5	Above potential
China	49	195	Front-runner
Korea	46	13	Below potential
Peru	38	6	Under-performer
Brazil	33	72	Below potential
S. Africa	29	5	Under-performer
Chile	17	5	Front-runner
India	7	44	Under-performer?

Source, Schneider et al., Energy Policy Journal

## Accelerating Clean Tech Commercialisation in India

- **Commercialisation support appropriate fiscal incentives**
- **Maximise use of external support mechanisms such as CDM and P2E2, encouraging reform where necessary looking at:**
  - Credit system stability
  - Carbon price stability
  - Information availability
  - Reinforcement of technology innovation as an additionality hurdle
  - Differential credits
- **Review and reform in country processes and institutions to remove impediments to rapid commercialisation of clean technologies, specifically looking at:**
  - Clear IP protection and process
  - Innovation support mechanisms
  - Funding initiatives
  - Financial incentives – tax treatment etc
  - Removal of barriers to change
  - Minimum standards in certain technology areas – cars, buildings
  - Knowledge transfer networks
  - Removal of trade barriers – direct and indirect (eg standards)