



# New financing for energy efficiency in buildings – can carbon finance deliver?

Introduction

International Workshop

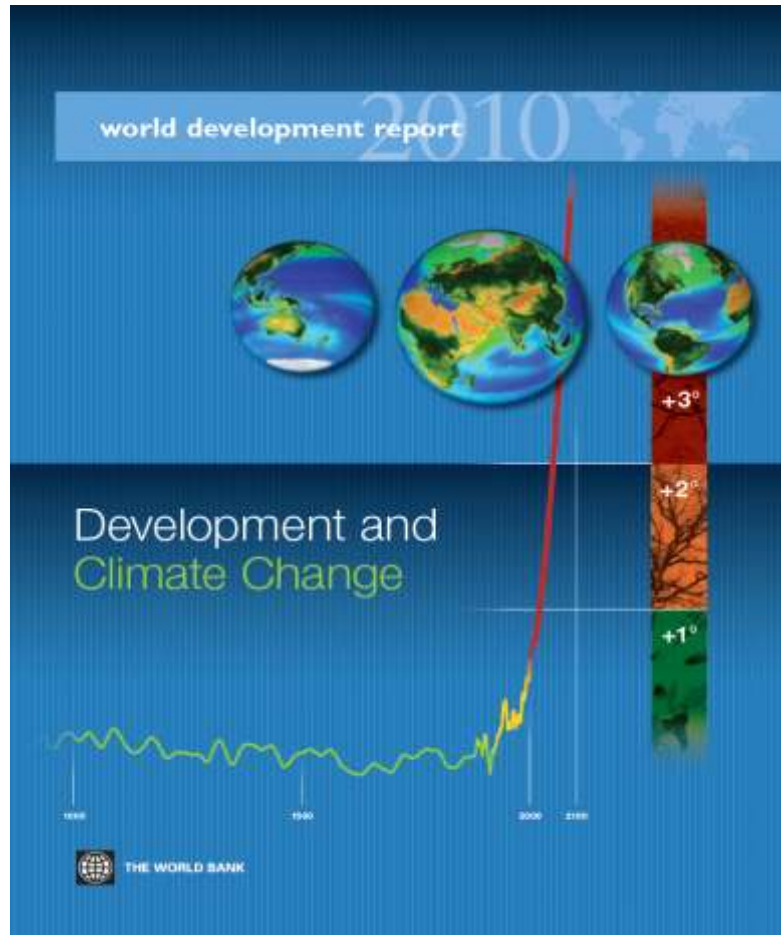
Mainstreaming Building Energy Efficiency  
Codes in Developing Countries

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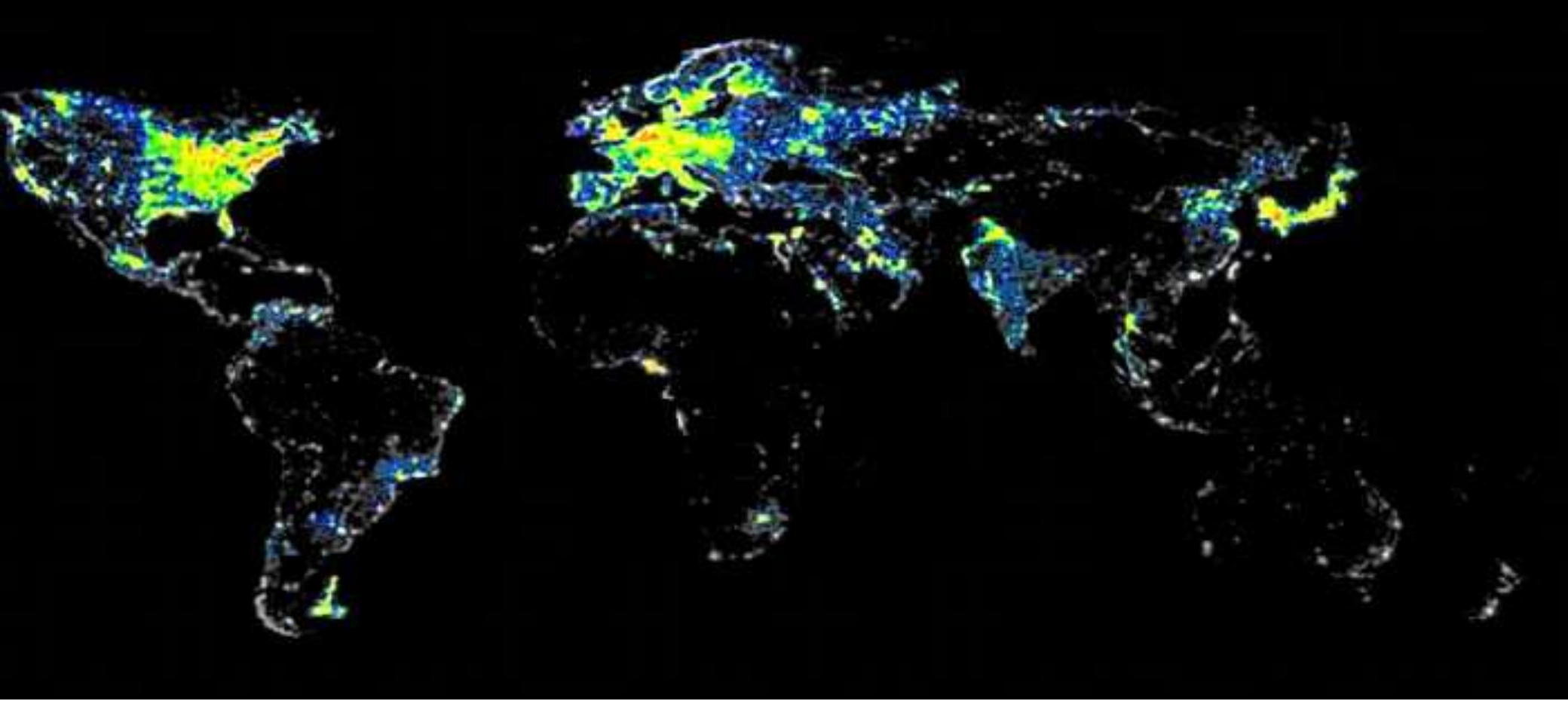
# Context

# Climate change as a development challenge



- Meeting the challenge is not a choice between growth and climate change
- A climate smart world is within reach if we act now, act together and act differently...
- ... building on new finance, technology and capacity at scale

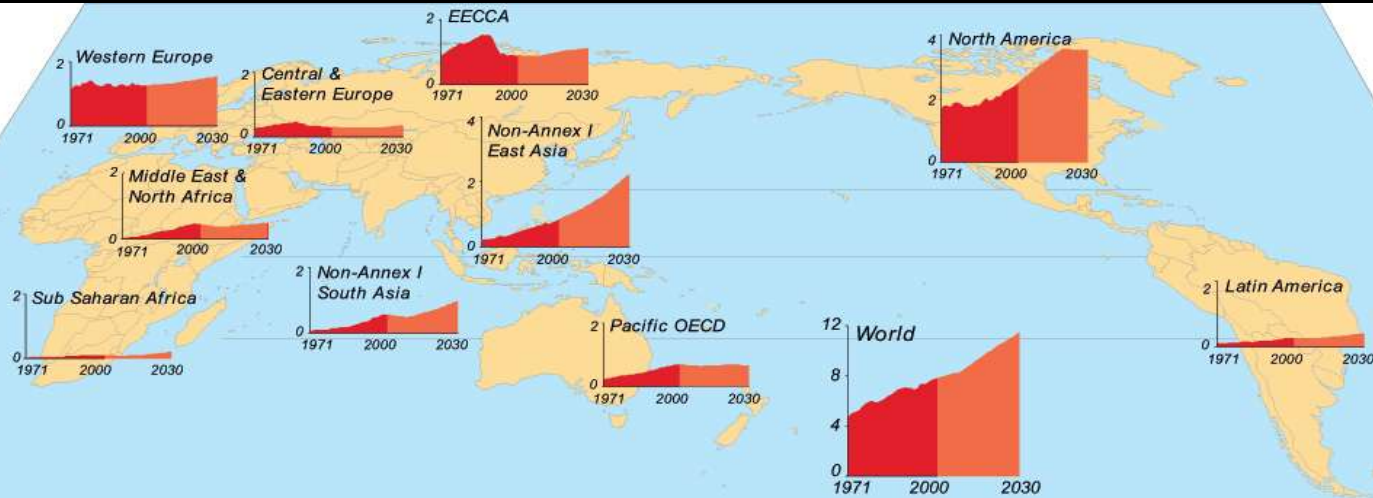




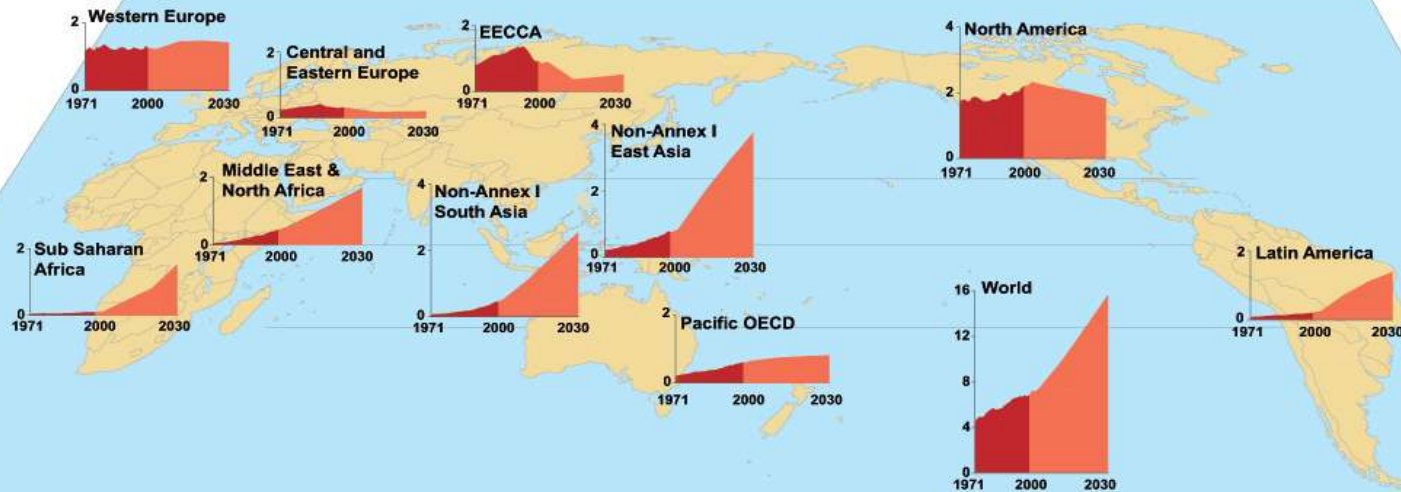
# Buildings related CO<sub>2</sub> emissions



**Scenario 1  
(B2)**



**Scenario 2  
(A1B)**



Dark red – historic emissions 1971–2000

Light red – projections 2001–2030

Source: IPCC AR4, WGIII Ch 6, Fig 6.2, 2007



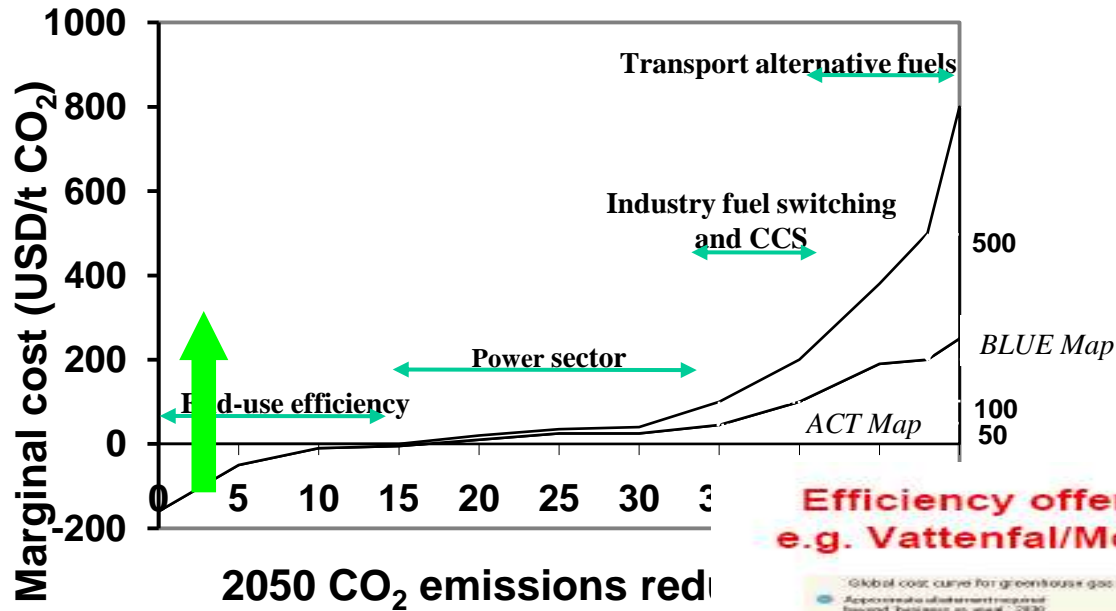
# Energy Efficiency and Carbon Finance



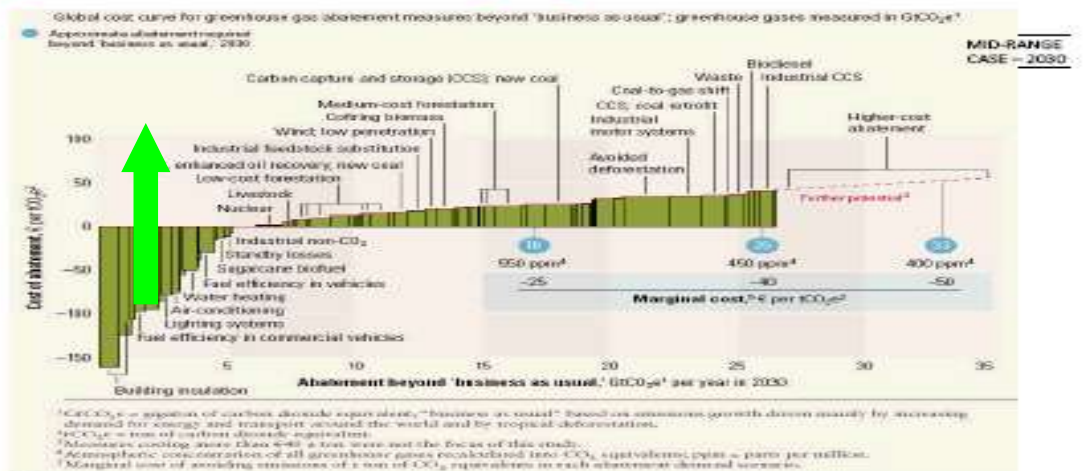
What can carbon finance bring to energy efficiency programs?

How does CDM work with EE programs, and buildings in particular?

# Real Cost of "Delivering" EE and GHG Emissions Reduction



Efficiency offers most cost-effective abatement: e.g. Vattenfall/McKinsey CO<sub>2</sub> abatement cost curve



Significant potential; but need to consider: direct costs to deliver energy savings, i.e., costs of accessing and implementing a technology

# Can carbon finance help remove barriers?



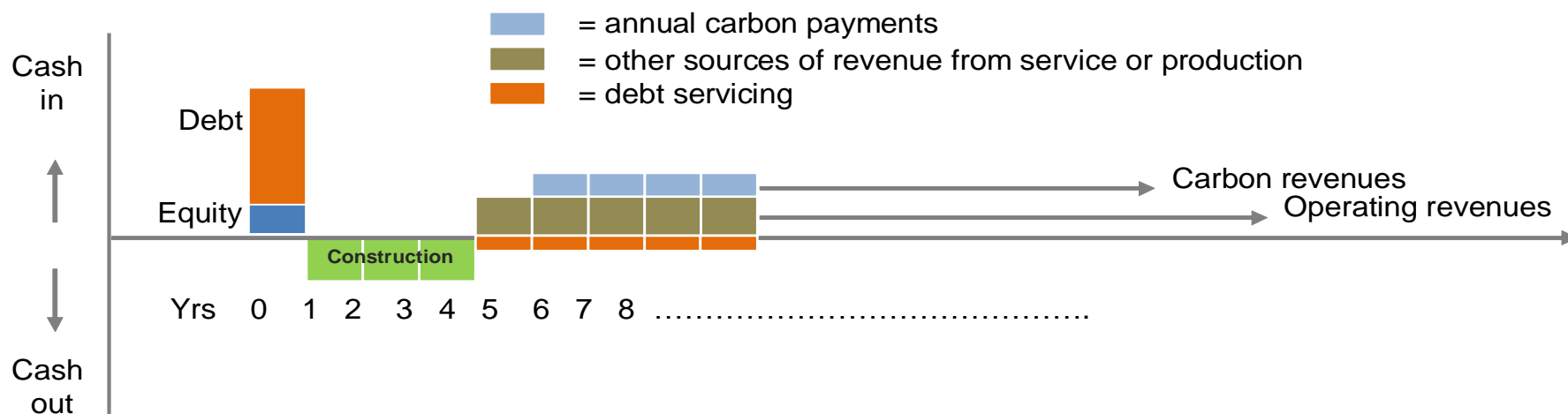
- The market is not delivering all cost-effective savings:
  - Despite large apparent low/negative cost potential, building EE potential remains untapped.
- Barriers, e.g.,
  - Split incentives: landlord-tenant issue; division of capital acquisition vs operation & maintenance budgets; energy capital lifespan often longer than ownership period
  - Transaction costs
  - Typical small-scale of EE in buildings (EE bundled with more important capital decision factors)
  - Initial investment barrier; decisions not based on life-cycle cost basis.
- Can carbon finance be part of the missing link?



# Carbon finance: provides an additional revenue stream

## Improves project cash-flows for climate-friendly projects

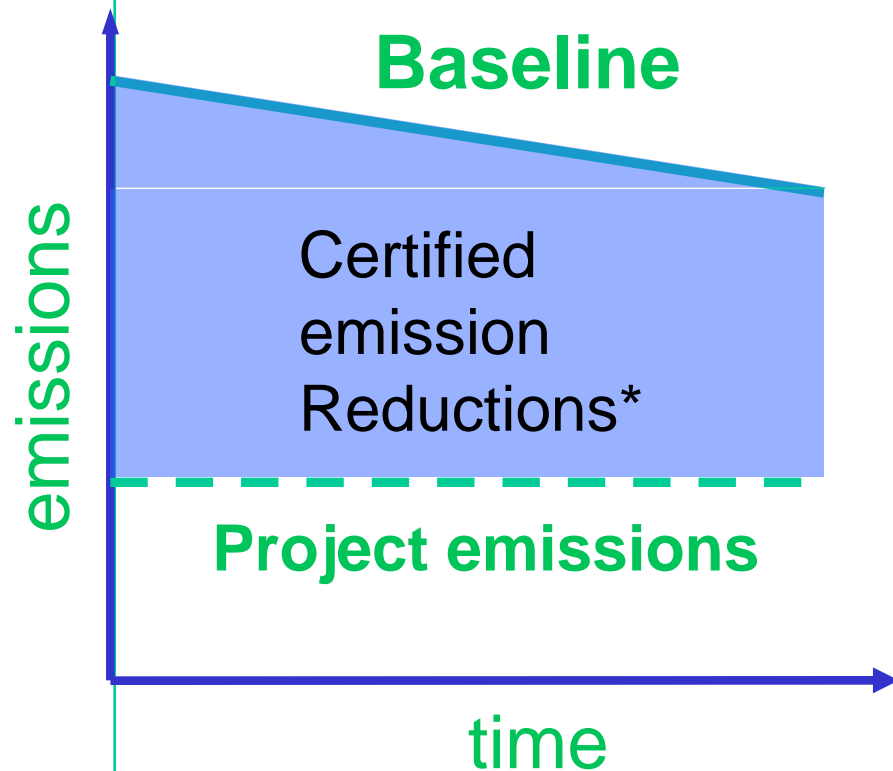
### Carbon finance: stream of emission reduction revenues



- ❑ Carbon revenues provide an additional revenue stream that can help:
  - reward more GHG-friendly investment and purchase decisions,
  - create incentive for good management / operational practices to sustain emission reductions over time,
  - enhance the financial viability of the project,
  - leverage capital for underlying investments by
    - addressing the initial investment barrier;
    - providing incentives to overcome social inertia, lack of awareness, transaction costs and financing of programs, etc.

• Help address other barriers, such as split-incentive barrier

# How does the CDM Work?



## Important Methodological Issues:

- Baselines are allowed to be counterfactual/hypothetical
- Determining Additionality
- Ex-post monitoring of emission reductions

\*The difference between the actual project emissions and the emission baseline constitute the volume of emission credits

\*If project = baseline → no credits

# World Bank's carbon finance activities – link with building energy efficiency



- Carbon finance: In collaboration with public and private sector participants, WBG played a critical role in creating the carbon market, with over \$2 billion of carbon funds under its management
- Carbon Partnership Facility ([www.carbonfinance.org](http://www.carbonfinance.org)) launched in fall 2008.
  - *Partnership* between buyers and suppliers of carbon credits.
  - Use carbon finance / carbon markets to catalyze a *transformation* toward low-carbon economic development.
  - *Scaling-up* of carbon finance:
    - Programs and sector interventions.
    - Long-term emissions from all sources.
    - Low-carbon technologies.
- During consultations on CPF, client countries highlighted importance of EE programs in general and buildings in particular



# World Bank Efforts to Support Greater EE through Carbon Finance

- In addition to supporting EE projects in the portfolio and pipeline...
- Increased focus on demand side energy efficiency
  - Small-scale CDM methodology: Demand-Side Activities for Efficient Lighting Technologies - SSC AMS III (approved in summer 2008)
- Support for CDM Programme of Activities
- Active Member and supporter of the recently established International Expert Group on Energy Efficiency and Carbon Finance (launched in Bali, Dec. 2007)
- Technical reports and studies, e.g.:
  - Report on *Scaling-Up Demand-Side Energy Efficiency Improvements through Programmatic CDM* (December 2007)
  - Paper on *Achieving GHG Emission Reductions in Developing Countries through End-Use Energy Efficient projects in the CDM* (December 2006)
- Development of new methodologies and approaches
  - Work on methodology for building energy efficiency currently underway
  - EE and buildings : key component of "city-wide" approach under development



# Today's discussion

Can carbon finance help remove barriers for energy efficiency in buildings?

International carbon finance mechanisms:

- Clean Development Mechanism (CDM)
- Nationally Appropriate Mitigation Measures (NAMAs)

Methodologies:

- Practical ways to calculate energy savings and translate them in emission credits
  - What are the issues that need to be addressed?
  - Can we build on existing monitoring and verification practices?