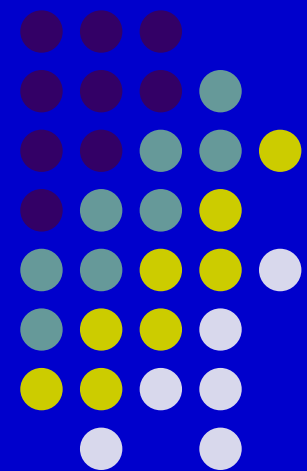


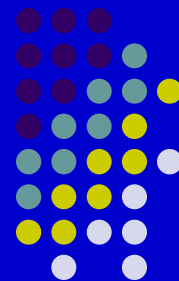
Financing CCS in Developing Countries – Issues and Challenges

CSLF Financial Issue Task Force
New Delhi, 2 December 2008

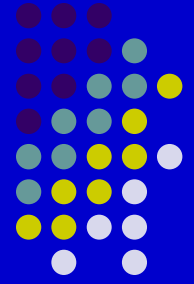
Ashok Bhargava



Disclaimer



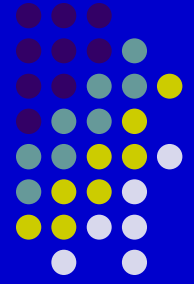
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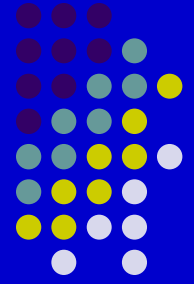
Introduction

- Asian Development Bank (ADB) is providing assistance to developing member countries (DMCs) in Asia –Pacific region for the past 42 years
- In 2007, ADB provided about \$10 billion assistance to its DMCs, including more than \$200 million in technical assistance grant
- Among its DMCs, People's Republic of China (PRC) and India are CSLF member countries

Asia's Energy Challenge



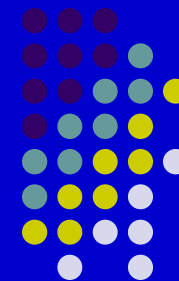
- Still more than 900 million people without access to electricity; most of them in south Asia
- Low per-capita energy consumption; expected rapid energy demand growth to about 30% of the World's total energy consumption by 2030
- Large investment need – estimated \$6.3 trillion investment need in energy infrastructure by 2030
- In 2007, about 65% of the World's coal produced and consumed in Asia – Pacific; about half of it for electricity generation



ADB energy sector priorities

- Targeted approach to improve access to electricity, especially for poor
- Support transition to low-carbon energy path to mitigate climate change impact of energy growth
- Knowledge support to formulate appropriate sector policy framework

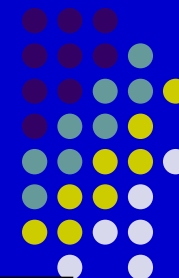
Financing Approaches and Thrusts



Recognizing the energy-climate change correlation, integrate energy sector within the climate change program and seek to

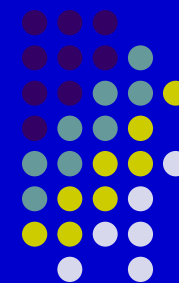
- Mobilize additional concessional resources
- Catalyze private sector capital
- Maximize the use of market-based mechanisms (e.g. carbon market)

Overview - Low-carbon energy and climate change-related ADB and External funds

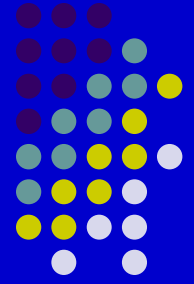


	Mitigation	Adaptation	Both
ADB - DMCS	<p>Clean Energy Financing Partnership Facility (\$93 m)</p> <p>Carbon Market Initiative Funds</p> <ul style="list-style-type: none"> ▪ Asia-Pacific Carbon Fund (\$151 m) ▪ Future Carbon Fund (target \$100 m) 	<p>Small Grants for Promoting Climate Change Adaptation (\$1.2 m)</p> <p>Water Financing Partnership Facility (\$65 m, including adaptation)</p> <p>Poverty and Environment Fund (\$3.6 m, including adaptation)</p>	<p>Climate Change Fund (\$40 m)</p>
EXTERNAL - GLOBAL	<p>Global Environment Facility (GEF) Climate Change Focal Area (\$250 m/ year)</p> <p>Clean Technology Fund of the Climate Investment Funds (WB as Trustee) (target \$5 b)</p>	<p>Least Developed Countries Fund (GEF as administrator) (\$189 m)</p> <p>Strategic Priority on Adaptation (part of GEF Trust Fund) (\$50 m)</p> <p>Adaptation Fund (GEF as administrator in cooperation with UNFCCC Secretariat) (\$100 m by 2009)</p>	<p>Special Climate Change Fund (GEF as administrator) (adaptation priority, target \$75 m; mitigation, target \$15 m)</p> <p>Strategic Climate Fund of the Climate Investment Funds (WB Trustee) Target:</p> <ul style="list-style-type: none"> - Pilot Program for Climate Resilience \$500 m - Forest Investment Prog. \$500 m - Greening Energy Access \$500 m

ADB's Clean Energy Financing Partnership Facility (CEFPF)

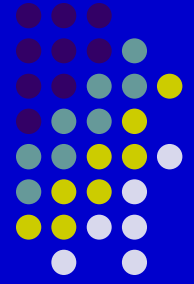


- Established in April 2007 to scale-up ADB's annual energy efficiency and clean energy investment from 2008 to more than \$1 billion; (expected 2008 clean energy lending \$1.5 b)
- currently total approx \$93 m equivalent committed or intended contributions (2007 – 2011) from funding partners— **Australia** (\$28m), **Norway** (\$5.5 m), **Spain** (\$5 m), **Sweden** (\$4.5m); and **Japan** (\$50 m)
- Of the \$31.4 m available with the CEFPF, \$15.6 m were allocated to 18 projects



ADB's Climate Change Fund

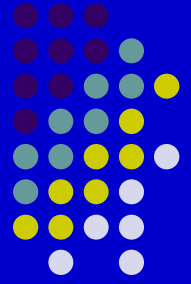
- Established in 2008 from \$40 million contributions from ADB's operational income to facilitate greater investments in DMCs to address the causes and consequences of climate change.
- \$30 million (75%) for mitigation and \$10 million (25%) for adaptation.



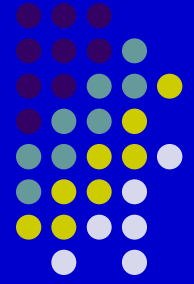
ADB's Carbon Market initiative Funds

- **Asia Pacific Carbon Fund (APCF)** – a \$151 m fund to purchase up to 50% CERs up-front (rather than on delivery) from clean energy projects up to 2012; APCF is operational since August 2007
- **Future Carbon Fund (FCF)** - a \$100 m target fund to work on the similar up-front financing principles of APCF but for CERs for the 2013 – 2020 duration; it is expected to be operational in 2009

ADB funds and CCS related interventions



- **INDIA:** \$2 m grant funded technical assistance (TA) from CEFPF for preparing an IGCC project
- **PRC**
 - \$1.25 m CCF funded TA on Strategic Analysis for CCS and Capacity Strengthening
 - \$200,000 small-scale TA for capacity strengthening in planning and implementation of IGCC plants
 - \$5 m grant from CCF to be blended with \$125 m OCR loan for a potential 250 MW IGCC plant financing

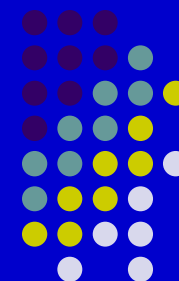


External Fund - Climate Investment Funds

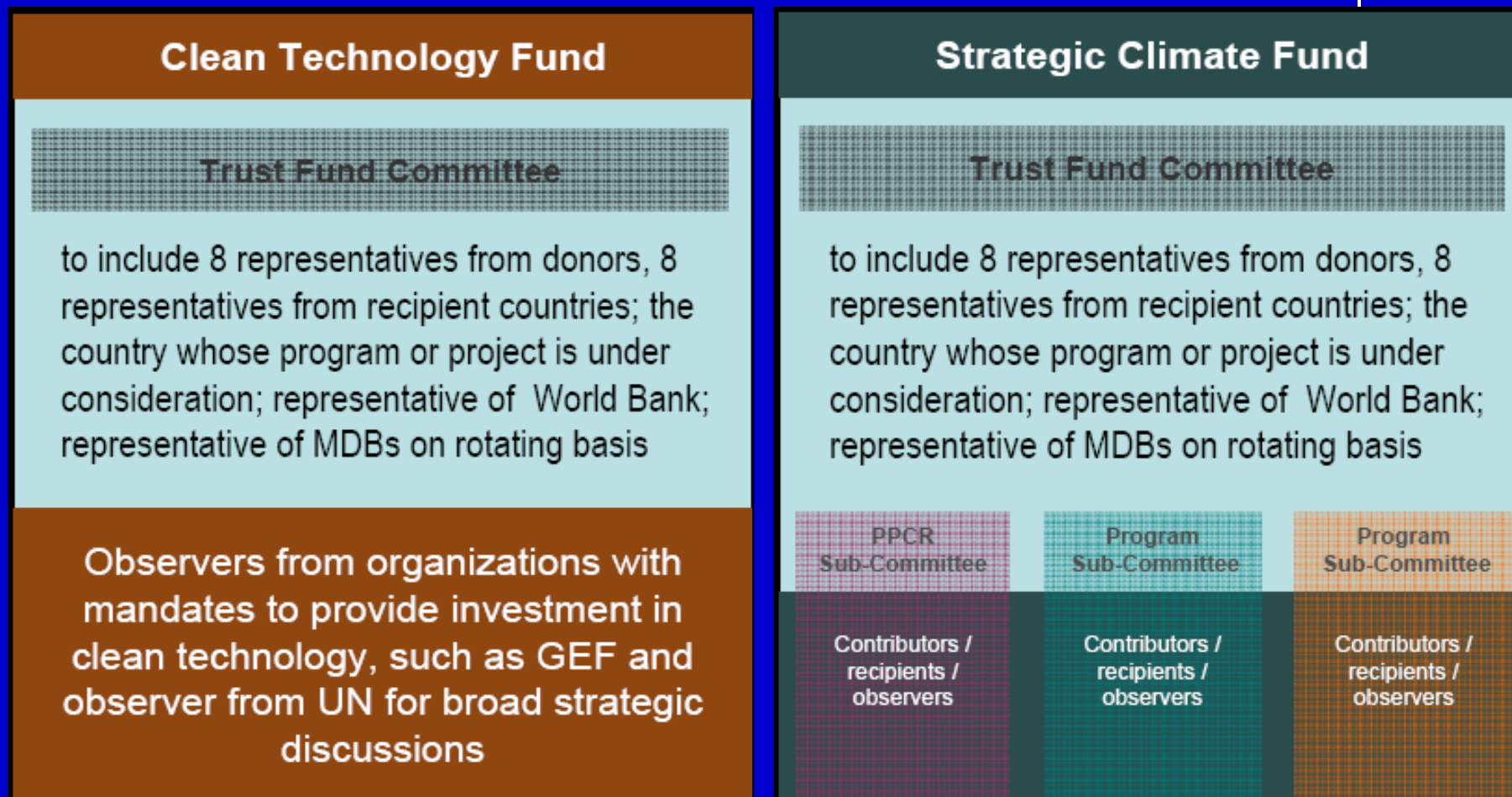
- **Climate Investment Funds (CIF)** – an additional concessional resource to support early action by developing countries in climate change management

Key features of CIF:

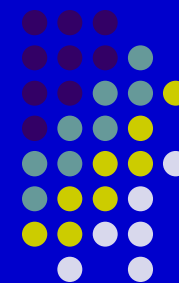
- World Bank (WB) is the trustee but all MDB's are equally eligible for seeking co-finances
- Approved by WB in July 2008
- Donors have pledged more than \$6 billion in the CIF
- Comprises two main funds – *Clean technology Fund (CTF)* and *Strategic Climate Fund (SCF)*



CIF – organization structure

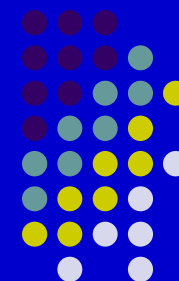


Clean Technology Fund (CTF)



- Scale up demonstration, deployment, and transfer of low carbon technologies
- IDA-like concessional loans, grants, guarantees
- Supports programs involving – renewables, energy efficiency, improved efficiency of energy supply
- Accessing CTF
 - Country request
 - Prepare investment plan embedded in national development plan
 - Selection criteria:
 - Potential GHG emission savings
 - Demonstration potential
 - Development impact
 - Implementation potential

CTF - Trust Fund Committee



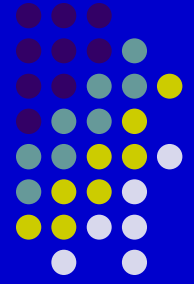
Donors

- Australia, France, Germany, Japan, Sweden, UK, and US

Developing countries

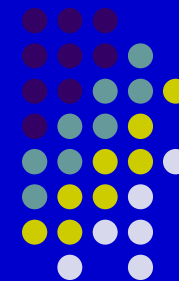
- Brazil, **China**, Egypt, **India**, Mexico, South Africa, Turkey (+Morocco, if and when 8th donor joins) plus WB/MDB

CIF and CCS demonstration in developing countries – some issues



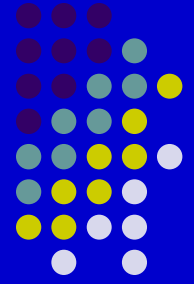
- Mismatch between limited funds and large concessionality needs of an industrial-scale CCS project
- CCS demonstration investment is unlikely before 2012;
- But the incremental costs to make coal-based power plants CCS ready can be considered

Looking ahead – CCS demonstration in PRC and India : key issues



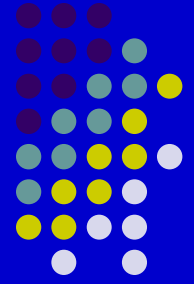
- No economic drivers / regulatory need. Uncertainty about carbon revenues
- CCS application in coal-based power plants offer largest opportunities; first projects are likely to utilize enhanced oil / gas recovery
- A national champion for CCS with a clear mandate is essential to move forward the pre-demonstration preparatory activities

Key challenges in financing CCS - role for MDBs and policy makers



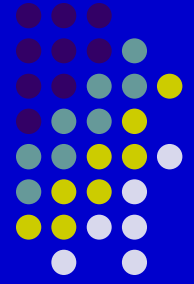
- Perceived risks are too high for private investors, it will need support from Governments, and multilateral development banks (MDBs)
- MDBs like ADB can play an important role in mitigating high transaction cost by providing grant finances to prepare bankable CCS demonstration project(s)
- But national policies should demonstrate commitment and vision for CCS as a low carbon technology option

Conclusions



- CCS will remain at the high end of the risk spectrum among climate change mitigation technologies; a differentiated approach is needed for accelerated CCS development
- Fast-track globalization of CCS technologies is essential; developing countries need to be included in the demonstration phase itself to reduce time lag
- Critical need to support upstream preparatory activities - analytical work, knowledge sharing, capacity building, legal and regulatory issues, short-list of demonstration projects
- Innovative low-cost financing exist from MDBs for upstream preparatory activities; an appropriate sized and targeted concessional financing should evolve to support demonstration projects

For further details



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