Promotion of Climate Technology Financing

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Outline of Presentation

- Why need climate technology finance?
- Practical experience: ADB Pilot Asia-Pacific Climate Technology Finance Center
- Experience and observations
Why climate technology promotion?

- Developing countries (DCs) have to strike a balance - i.e., achieve socio-economic growth in a sustainable manner that produces lower levels of GHG emissions - advanced technology will be the key to address the two concerns.

- Climate technology: one of the three pillars of addressing climate change by DCs: technology, finance and capacity building
## Climate Technologies

### Mitigation

- **Energy Efficiency**  
  *Industry, power, consumer goods, buildings*

- **Renewable Energy**  
  *Power, biofuels, transport, others*

- **Transport**  
  *Fuel efficient vehicles, electric vehicles, hybrids*

- **Agriculture & Land Use**  
  *Sequestration, fertilizer use,*

### Adaptation

- **Water**  
  *Water treatment and management*

- **Climate Disaster Risk Mgt**  
  *Early warning systems*

- **Coastal Zone/Urban Devt**  
  *Resilience-enhancing technologies e.g., architectural design standards*

- **Agriculture**  
  *Irrigation, Biotech*
Technology from idea to diffusion faces huge challenges

Death valley of emerging tech

Need strong support

Basic research  Applied research  Demonstration  Commercialization  Market expansion  Deployment
ADB’s Pilot Climate Technology Finance Center

1. Objectives
   • Promote climate technology investment

2. Means - Provide advisory and knowledge services on:
   • Climate technology options
   • Climate change policy
   • Climate finance
How does ADB’s Pilot Asia-Pacific Climate Technology Finance Center fit in?

- Basic R&D
- Applied R&D
- Demonstration
- Commercialisation
- Market accumulation
- Diffusion

**ADB’s Climate Technology Finance Center (CTCN)**

IFIs

Market Pull
Center objective - To accelerate access to climate mitigation and adaptation technologies

1. Facilitating Technology Network
2. Building Technology Centers
3. Enabling Policies
4. Technology Mainstreaming
5. Catalyzing Project & Venture Capital Investments
6. Pilot Marketplace for Low-Carbon Technologies

Network Facilitation and Development
Enhancing Enabling Environment
Investment Facilitation

Capacity Building
Pilot Center: How do the services fit?

**Public Sector**

- Technology Mainstreaming in Development Plans
  - Inputs to ADB country partnership strategies and to national/sub-national dev’t plans on:
    * Climate technology options in sectors
    * Key barriers, policies needed
    * Financing options
    * Seminars/workshops

- Investment in Climate Technologies in Priority Projects
  - Technology analysis at project identification & design
  - Demonstration of selected low-cost technology
  - Seminars/workshops

**Private Sector**

- Investment in Climate Technologies via Venture Capital & Private Equity Funds
  - Advisory & knowledge services on:
    * Emerging technologies
    * Technology investment opportunities
    * Potential investee start up companies
    * Technology assessments of fund managers’ proposals
    * Seminars/workshops

- Demonstration of Marketplace for Low-Carbon Technologies
  - Provide match-making services for LCT providers & recipients:
    * Screening participants & technologies
    * Transaction structuring & negotiation support
    * Regulatory & legal support
    * Advice on dispute resolution
    * Potential access to transaction financing

**Enhancing Knowledge on Climate Technologies & Financing**

- Knowledge products e.g. adaptation technologies, private sector climate finance
- Regional dialogues on climate finance

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1. **Working with ADB’s Developing Member Countries (DMCs) to mainstream climate technologies into development plans.**
   - Via Country Partnership Strategies; National and/or sub-national plans; Country Operations Business Plans

2. **Providing technical support and advisory service for ADB’s public sector investment pipeline projects.**
   - Interventions at project design and preparation phase for loans, grants, technical assistance projects
Bangladesh: Pre-feasibility study on options to scale-up rural solar and wind hybrid energy technologies

Process for assistance

ADB

CTFC

CTFC-funded International & National Consultants

Government of Bangladesh

Grid Extension Plans

RE Policies

Mini Grid Policies

Assistance
- Assessment of climate technology options
- Recommendation of financing options
- Selection of site, resource, technology, business model
- Policy formulation assistance

Deliverables
- Pre-feasibility report
- Recommendation of 3 options for pilot project
- Recommendation for policies based on lessons from pilot
Bangladesh: Results - Power Generation Options

- **Upgrading of bagasse-based cogeneration in sugar mills**
  - Expand power generation using combined heat and power from sugarcane bagasse.

- **Poultry manure to biogas to power**
  - Waste from poultry farms as fuel through an anaerobic digester system → treat chicken manure and produce enough biogas to generate needed power and heat.

- **Solar nanogrids**
  - Link households in rural communities to a communal solar power system → connected to a small-scale agricultural or industrial application, like an irrigation system.

- **Solar minigrids**
  - Solar photovoltaic plants with a localized distribution network → to a single village, or cluster of villages.
**Tonga: Outer Island Renewable Energy Project**

Assistance in design/implementation of components for a 0.8 MW* solar power capacity connecting existing diesel networks of 3* outer islands.

**Process for assistance**

- **ADB**
- **Tonga Outer Island Renewable Energy Project**
- **CTFC**

**CTFC Solar expert advisory service**

- **Grid-connected solar – 1.25 MW**
- **Solar Home System (SHS)**
- **Solar pumping**

**Advisory Assistance**

- Design improvement of grid-connected solar system for increased safety and reliability
- Configuration of the right size for the SHS
- Coordination on co-financing for the solar pumping

*Total solar power project = 1.25 MW covering 9 islands*
Climate Technology Finance Center:

3. Working with Venture Capital (VC) and Private Equity (PE) Funds to encourage greater level of investments into climate technologies.
   • Capacity building and creating a regional network
Climate Technology Investments via VC & PE Funds

CTFC AS CLIMATE INVESTMENT CATALYST

CLEANTECH INVESTMENT INDUSTRY SERVICES

VC & PE FUNDS SUPPORT
- Catalyze risk capital
- Assist first-time funds
- Engage non-institutional VCs

REGIONAL NETWORK
- Connect cleantech investors and start-ups

START-UP ACCELERATOR PLATFORM
- Support start-ups via accelerator and incubator programs, (bootcamps)

RESEARCH THINK TANK
- Analyze best investment practices and frontier investment sectors
- Support pilots of new investment innovations
- Identify investment barriers
Climate Technology Finance Center:

4. **Setting up of IPEx Cleantech Asia** (1st Low Carbon Technology Exchange and IP Platform in Asia-Pacific).
IPEx Cleantech Asia = match-making platform bringing together selected low carbon technology holders worldwide to technology acquirers in Asia

The Marketplace will bridge the gap by providing services to facilitate transactions...

To LCT Providers

- Monetize existing IP Assets
- Access to rapidly developing markets
- Technology development collaboration
- De-risk deployment
- Access to counterparties and markets

To LCT Adopters

- Access to proven low carbon technologies
- Fast track valuation process
- Commercial, technological, and legal risk mitigation through enhanced due diligence
- Access to financing
Integrating CTFC components:
Climate Technology Promotion Mechanism

- Policy
- Finance
- Climate Technology Selection
- Capacity Building
- Markets

CTPM
Experience and lessons and observations:

Advanced climate technology financing and investment needs

- A good policy environment: incentive policy, subsidiary policy, environment safeguard policy, ….
- A good application environment: entry into market policy, safe guard of technology application, …
- A good business chain and environment, including life time service
- A strong local team with technical and professional capacity
- Financial support
- …..
Experience and lessons and observations

- Integration of climate technology into national development strategies, plans, and investment priorities is critical to facilitate direct investment in priority climate technology projects.

- Substantial technology needs assessment such as prefeasibility studies encourage DCs to integrate climate technologies in their national investment plans.

- Climate technology needs assessment with financing climate technology needs can catalyzes climate technology investment.
Experience and lessons and observations

- Technical assistance and manpower have catalytic role in putting forward private investments on climate technologies.

- Public sector (government, multilateral organization etc) and private sector (technology providers and adopters, solution providers, investors) all are indispensable actors.

- Network, business mentoring and information are important factors for the VC/PE to implement climate technology investment.
Thoughts for thinking

- Low Carbon technology: what is unique feature?
- Taking carbon reduction as asset to develop carbon finance -- a real financial instrument for low carbon technology
- Would low carbon technology + Carbon market work?
Climate technology cooperation promotion

- China has a lot of advanced climate technologies that may be easily adapted and adopted in South Asia and Southeast Asia countries.

- Exploring the practical way for win-win cooperation should be encouraged, and will need government agencies, technical institutions and business companies to work together.
Thank you!

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