

ADB's Practice on Facilitating and Financing Low Carbon Technology Transfer and Investment

Lingshui Mo (Maureen)
Low Carbon Development Expert
Asian Development Bank
June 2016

Outline

- Background
- Practice on climate technology transfer and investment: ADB's Polit Asia-Pacific Climate Technology Finance Centre
- Experience and Lessons learnt

Background

- Rapid growth of GHG emissions while large populations vulnerable to the impacts of climate change in Asia and the Pacific
- Growing needs for getting right climate technology with financing climate technology investment to combat climate change in the region
- ADB's climate change strategic priorities for actions

Background

Modalities

Finance

Knowledge

Partnership

Scaling-up Clean Energy

Encouraging Sustainable Transport and Urban Development

Managing Land Use and Forests for Carbon Sequestration

Promoting Climate-resilient Development

Strengthening Policies, Governance, and Capacity

Priorities

Background

- Supporting the implementation of technology and finance mechanisms established under the United Nations Framework Convention on Climate Change (UNFCCC)

ADB's Pilot Asia-Pacific Climate Technology Finance Center (CTFC)

1. Established in 2012

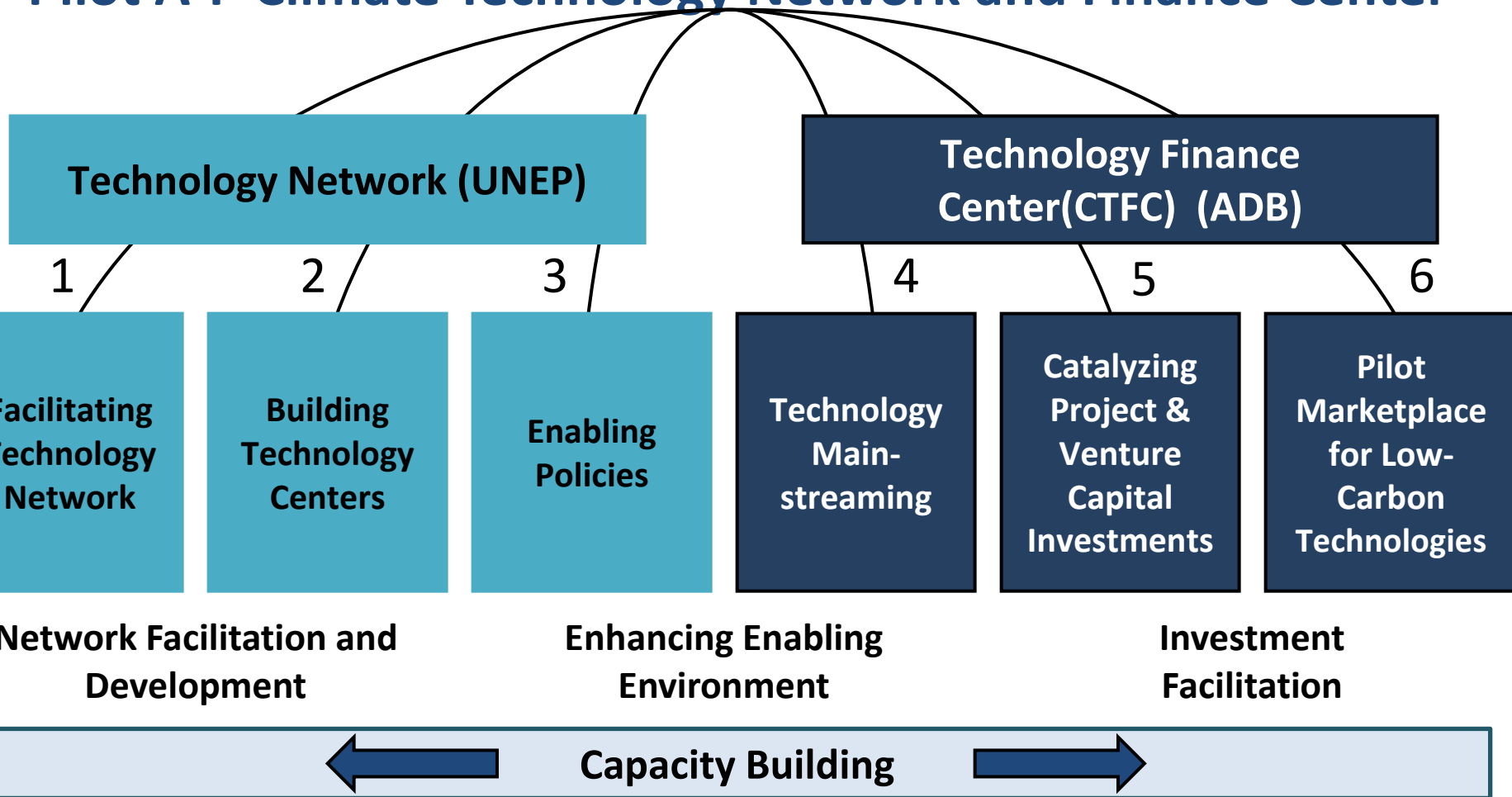
2. Modality and Structure of CTFC

- Working in partnership with UNEP, with funding support of US\$ 17.54 million from GEF, Japan, Republic of Korea, VITO-Flemish Institute for Technological Reserach NV
- ADB-UNEP collaboration = **Pilot Asia-Pacific Climate Technology Network and Finance Center**

ADB's Pilot Asia-Pacific Climate Technology Finance Center

ADB-UNEP Collaboration

Pilot A-P Climate Technology Network and Finance Center



ADB's Pilot Asia-Pacific Climate Technology Finance Center (CTFC)

3. Objectives

Engage both public and private sectors in accelerating:

- Development and deployment of climate technologies
- Investment in climate technology

4. Key Components

- Integrating climate technology financing needs into national development strategies, plans, and investment priorities

ADB's Pilot Asia-Pacific Climate Technology Finance Center (CTFC)

- Catalyzing climate technology investment
 - *Technical support and advisory service for ADB investment pipeline projects*
 - *Facilitating investment by Venture Capital (VC) and Private Equity (PE) funds in climate technologies*
- Establishing a pilot “marketplace” for low-carbon technologies to facilitate their transfer
- Knowledge Sharing

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5. Achievement

- ❑ Mainstream climate technologies into development plan (Bangladesh, Bhutan, PRC, Mongolia, Pakistan and Viet Nam) via:
 - Country Partnership Strategies(CPS) and Country Operations Business Plans(COBP)(Bangladesh, Bhutan, PRC, Mongolia, Pakistan and Viet Nam)
 - National and/or sub-national development strategies and investment priorities plans(Hunan and Ningxia Provinces of PRC)
 - Contributing to ADB's inputs for the formulation of PRC's 13th Five Year Plan, 2016-2020

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Case example: Bangladesh-pre-feasibility study on options to scale-up rural solar and wind hybrid energy technologies

i. Components of assessment:

- *Assessment of climate technology options*
- *Assessment of financing options*
- *Assessment of site, resource, technology, business model*
- *Policy formulation*

ii. Results of Assessment

(i) Technology Options

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

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- 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.

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(ii) Project recommendation

The Government of Bangladesh has requested the recommended projects to be included in their COBP 2016-2018 (value US\$640 million):

- a. CDTA: Sustainable Management of Solar Pumps for Agricultural Irrigation
- b. PV Pumping Systems for Agricultural irrigation
- c. Rural Hybrid Power Systems
- d. Solar PV Power Development

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□ Providing technical support and advisory service for ADB's pipeline projects.

- Interventions at project design and preparation phase for loans, grants, technical assistance projects
- ✓ *e.g. technical advice given to 21 mitigation and adaptation projects involving solar energy, renewable energy, energy efficiency, and flood risk management*
- Produced Climate technology information as reference material for ADB loan projects design used by Regional Operation Departments
- **Case example: 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:
 - ✓ *Design improvement of grid-connected solar system for increased safety and reliability*
 - ✓ *Configuration of the right size for the SHS (Solar Home System)*
 - ✓ *Coordination on co-financing for the solar pumping*

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□ Facilitating engagement with private capital to encourage greater level of investments into climate technologies

(i) Collaborating with accelerator and incubator programs for cleantech entrepreneurs with promising investment potential

➤ *Supported 3 accelerators: 2 in India + 1 in Vietnam*

➤ *Evaluated 500+ companies*

➤ *Accelerated 50+ companies*

➤ *8-10 companies successful access funding from VC, angels or donor*

(ii) Nurturing cleantech focused VC and PE funds

➤ \$500m Asia Climate Partners Fund (HK-based)

➤ \$25m Infuse fund

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(iii) Enabling knowledge sharing on best practices and market trends

- *Hunan CTPM workshop*
- *First Asian Start-Up Accelerator Roundtable ADB-Ideaspace Startup Café*
- *APEC Official Startup Event*
- *Infographics and Blog*
- *Non-institutional cleantech Investor assessment*

(iv) creating a regional cleantech network

Climate Technology Investments via VC & PE Funds

CTFC as Climate Technology Investment Catalyst

Cleantech Investment Industry Services

VC and 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, (boot camps)

Research Think Tank

- Analyze best investment practices and frontier investment sectors
- Support pilots of new investment innovations
- Identify investment barriers

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- **Piloting 1st Low Carbon Technology Exchange and the first of its kind cleantech intellectual property (IP) Platform in Asia-Pacific-IPEX Cleantech Asia**
 - *Active identification of deals that could create value for both technology holders and acquirers*
 - *Pre-qualification of counterparties and low carbon technologies*
 - *Enhanced technical, commercial/ financial and legal due diligence*
 - *Cross border deal structuring for IP licensing, joint venture and*
 - *Access to financing, if needed*

4 technology transfer deals that are in various stages of negotiations.

Low-Carbon Technology Marketplace



1

Technology market place and brokerage platform formed by a consortium of ReEx Capital Asia and DNV GL with the support of ADB.



2

Designed to facilitate the transfer and deployment of new low carbon technologies to developing Asia and the Pacific



by

3

Providing a range of matching, advisory and brokerage services to technology suppliers and adopters



4

Resulting in technology assets monetized; new and validated cleantech solutions bridged into developing Asia



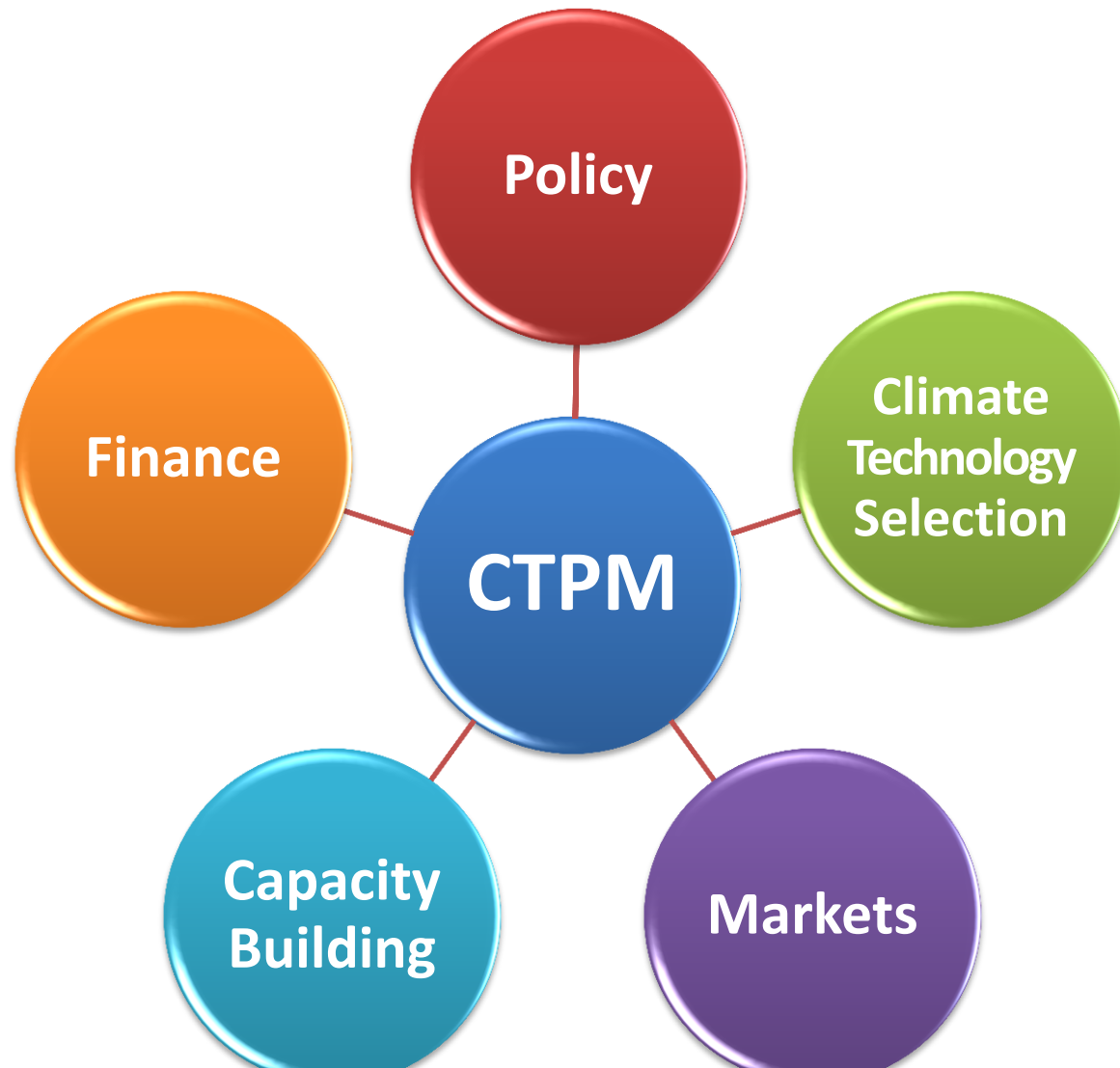
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□ Knowledge Sharing

- Generation of Knowledge products
 - *Technologies to Support Climate Change Adaptation in Developing Asia* (<http://www.adb.org/publications/technologies-support-climate-change-adaptation-developing-asia>)
 - *Sustainable Energy Access Planning: A Framework* (<http://www.adb.org/publications/sustainable-energy-access-planning-framework>)
- Partnership with GCF for Policy and Technical Dialogues on the GCF Business Model Framework and Operations
- Coordination and knowledge sharing with UNEP, CTCN, GEF, other MDBs, etc.

ADB's Pilot Asia-Pacific Climate Technology Finance Center (CTFC)

- Piloting Climate Technology Promotion Mechanism in Hunan, PRC



**ADB's Pilot Asia-Pacific Climate Technology Finance
Center (CTFC)**

International Forum on Low Carbon Technology

18-19 October 2016 (tentatively)

Changsha, Hunan, China

Experience and Lessons Learnt

- ❑ 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 DMCs to integrate climate technologies in their national investment plans
- ❑ Climate technology needs assessment with financing climate technology needs can catalyze climate technology investment
- ❑ Technology transfer and investment of climate technology take time but present in different forms at different stages
- ❑ A multilateral institution like ADB is a driving force for the promotion and implementation of climate technology

Experience and Lessons Learnt

- ❑ 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,investers) all are indispensable actors
- ❑ Network, business mentoring and information are important factors for the VC/PE to implement climate technology investment

Next Step of ADB CTFC

- ❑ Continue to deliver more services of existing components (Component C+D)
- ❑ Assess the low carbon technology needs under INDCs and financing low carbon technology investments through ADB loan, co-financing and leveraging more private finance

Thank you!

Imo.consultant@adb.org, lingshui524@hotmail.com