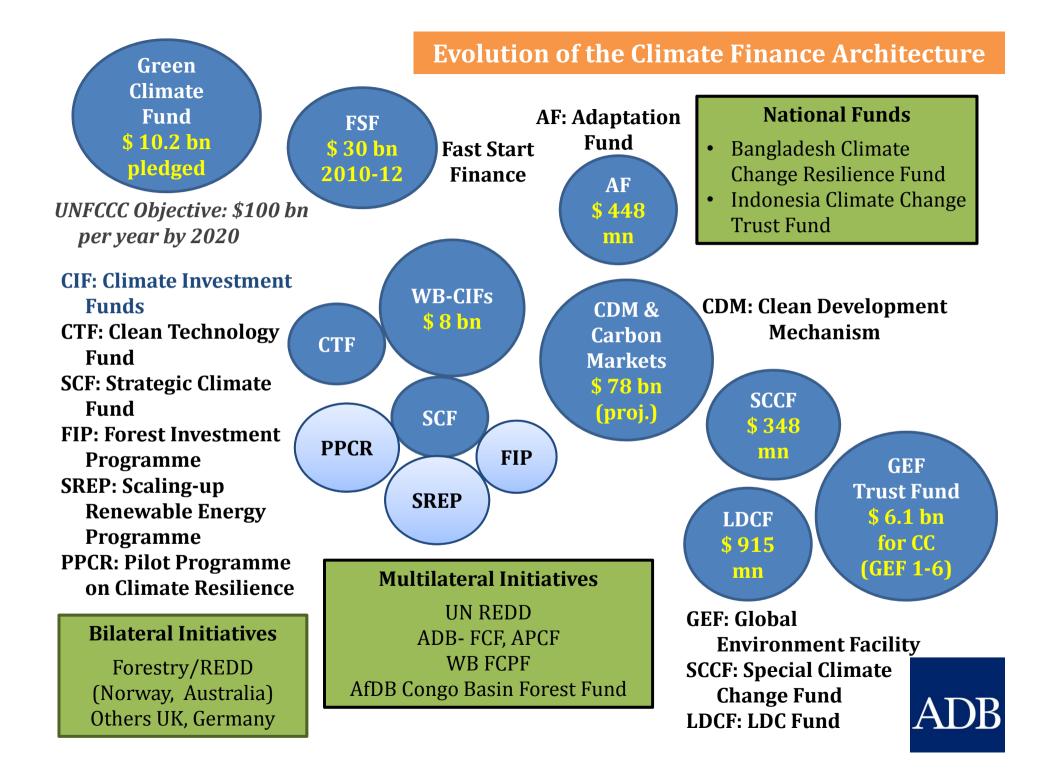


Climate change mitigation financing and the role of ADB





Outline

Priorities of ADB on Environment and Climate Change

ADB and Climate Finance

Some project examples

Finance ++ leveraging knowledge and partnerships

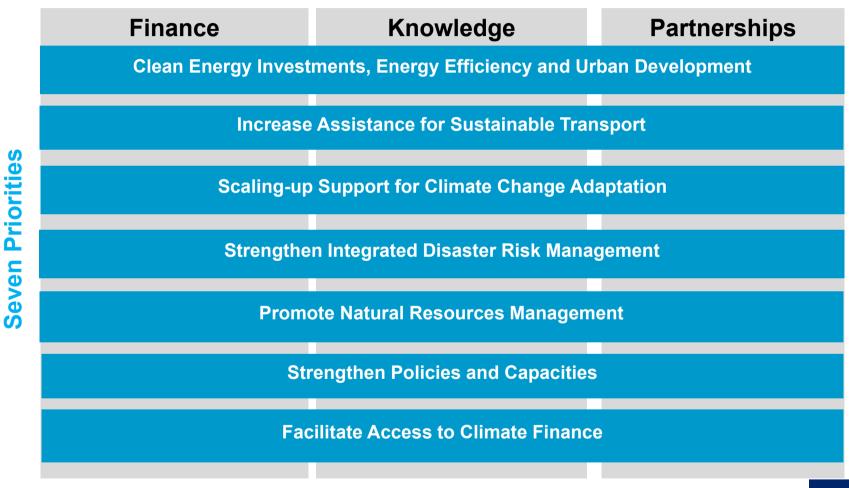


Priorities of ADB on Environment and Climate Change



ADB MTR2020: Strategic Priorities on Environment and Climate Change

Modalities





Corporate Targets and Realignment

- New Corporate Target for Climate Finance
 - ADB to invest \$6 billion for climate change by 2020
 - Of this, \$4 billion for mitigation and \$2 for adaptation
- Targets under the Corporate Results Framework :
 - ADB-assisted projects that support environmental sustainability: 50% for ADB; 40% for ADF by 2016
 - ADB-assisted projects that support climate mitigation and/or adaptation: 45% for ADB, 35% for ADF by 2016
- Revised project classification system: records (i) level of climate risks; (ii) emission reduction/avoidance; (iii) climate mitigation and adaptation finance
- Institutional Realignment: (1 June) Sustainable Development and Climate Change Department and upgraded Climate Change and Disaster Risk Management Division
 - Consolidated adaptation with disaster risk management team
 - Climate change as one of eight thematic groups



Mitigation Initiatives

Support to Low-Carbon

Transport

Intelligent

Systems

Green

Industry

Complex

Energy-Efficient

Buildings

Green,

Resilient

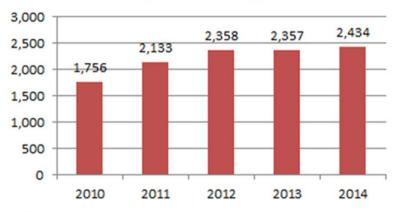
Infrastructure

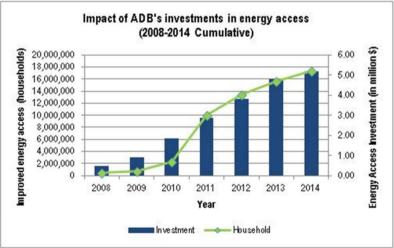
City

Greening

- Clean Energy
 - > \$2 billion since 2011
 - Asia Solar Energy Initiative: 3,000 MW new capacity by 2015
 - Quantum Leap in Wind: 1 GW by 2016
 - SE4All Initiative: access for 100 million poor by 2015
- Sustainable Transport & Urban Devt.
 - Sustainable Transport Initiative
 - Urban Operations Plan: Green, Inclusive, Competitive Cities
 - Cities Development Initiative for Asia
- Land Use and Forest Management
 - Piloting REDD+/FIP: Indonesia, Lao PDR



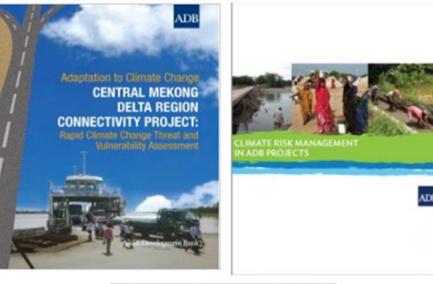






Adaptation Initiatives

- Mainstreaming climate resilience in core development planning
 - Pilot Program on Climate Resilience for Bangladesh, Cambodia, Nepal, Papua New Guinea, Samoa, Tajikistan and the Pacific
- Climate proofing vulnerable projects: roads and bridges, ports, water supply and drainage
- **Knowledge support:** regional climate projections consortium data facility , guidance and tools
- Addressing social dimensions : migration, gender, health impacts
- Greater emphasis on integration of adaptation and disaster risk



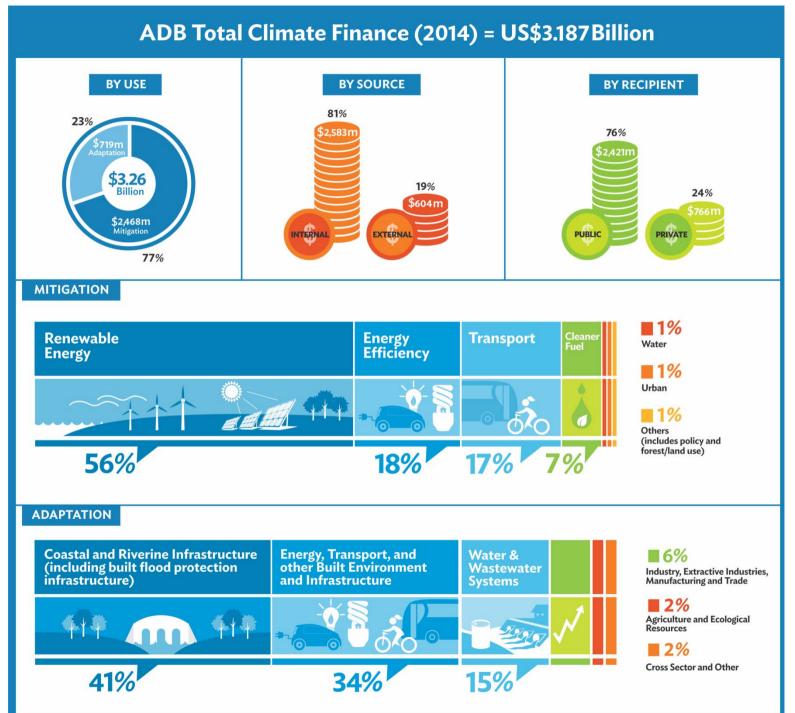


CLIMATE PROOFING ADB INVESTMENT IN THE TRANSPORT SECTOR INITIAL EXPERIENCE



ADB and Climate Finance







ADB Approaches to Climate Finance Mobilization

Deploying concessional resources

Internally-managed funds

- Clean Energy Financing Partnership Facility (CEFPF)
- Climate Change Fund (CCF)
- Others with bilaterals

Externally-managed funds

- Climate Investment Funds (CIFs)
- Global Environment Facility (GEF)
- Green Climate Fund (GCF)

Maximizing market mechanisms

• Carbon finance

- ✓ Asia Pacific Carbon Fund (closed in 2014)
- ✓ Future Carbon Fund
- Carbon Market Technical Support Facility
 - ✓ CDM support
 - ✓ domestic emissions trading
- Supporting other market mechanisms
 - ✓ Japan Fund for the Joint Crediting Mechanism
 - ✓ Renewable energy credits; feed in tariffs

Catalyzing private capital

- Direct project finance (lending, guarantees, syndications), and equity investment
- Public private partnerships: (PPPs) working with client DMCs across stages of PPPs



Deploying Concessional Resources Multilateral Climate Funds

Fund	Date Established	Total Global Fund Size (\$ million)	Allocated to ADB (\$ million)
A. Climate Investment Funds		8,081	1,552
Clean Technology Fund (CTF)	2008	5,300	1,288
Scaling-Up Renewable Energy Program for Low Income Countries (SREP)	2008	796	78
Forest Investment Program (FIP)	2008	785	31
Pilot Program for Climate Resilience (PPCR)	2008	1,200	286
B. Global Environment Facility (GEF)	1991	7,410.4	133.9
B.1 GEF Trust Fund	1991	6,127	105.14
B.2 GEF-Least Developed Countries Fund (LDCF)	2002	934.5	13.94
B.3 GEF-Special Climate Change Fund (SCCF)	2005	348.9	14.80
C. Kyoto Protocol Adaptation Fund (AF)	2009	351	0
Total		15,842.4	1,685.9



Internally-Managed Funds

Fund	Date Established	Fund Size \$ million
ADB Climate Change Fund (ADB net income)	May-08	59.1
Clean Energy		34.0
REDD and Land Use		6.8
Adaptation		18.0
Climate finance readiness		0.3
Clean Energy Financing Partnership Facility		290.4
Clean Energy Fund (multi-donor)	Apr-07	81.1
Asian Clean Energy Fund (Japan)	Jan-08	57.1
Carbon Capture and Storage Fund (Global CCS Institute and UK)	Jul-09	70.7
Canadian Climate Fund for the Private Sector in Asia	Apr-13	81.5
Urban Climate Change Resilience Trust Fund	Nov-13	140.7
Asia Pacific Disaster Response Fund (ADB, from Asian Tsunami Fund)	2009	60.2
Japan Fund for the Joint Crediting Mechanism	2014	31.6
Integrated Disaster Risk Management Fund (Canada)	Feb-13	9.7
Carbon Finance (multi-donor)		
Asia-Pacific Carbon Fund (up to 2012)	Nov-06	151.8
Future Carbon Fund (post-2012)	Jul-08	115.0
Total		858.5

Some project examples



Mobilizing Private Sector Resources for Renewable Energy in Thailand

PROVINCIAL SOLAR POWER PROJECT WITH BANGCHAK CENTRAL THAILAND SOLAR POWER PROJECT WITH SOLARCO SOLAR ENERGY The project will install and operate 32 MW of solar power generation. The project will install a 57 MW solar power project. Financing: The project's cost is \$63 million, of which \$12.6 million Financing: The project's cost is \$159 million, of which \$35 million is from CTF, \$25.2 million from ADB, and \$25.2 million from local is from CTF, \$52 million from ADB, and 72 million from local Thai Thai commercial banks. commercial banks. Increase in RE supply: 32 MW of solar power capacity. Increase in RE supply: 57 MW of solar power capacity. GHG emission reduction: 38,000 tCO₄e will be avoided annually. GHG emission reduction: 66,576 tCO.,e will be avoided annually. Economic and livelihood opportunities: Over 100 people will Economic and livelihood opportunities: At least 50 permanent be employed during construction and over 80 people for the staff positions will be filled from the start of commercial eventual operation of electricity generation facilities. operations and at least 150 people (full-time equivalent) will be employed during construction.

THEPPANA WIND POWER PROJECT

The project will install and operate a 7.5 MW wind power plant.

- Financing: The project's cost is \$13.08 million, of which \$4 million is from CTF, \$4.54 million from ADB, and \$4.54 million from local Thai commercial banks.
- Increase in RE supply: 7.5 MW wind power capacity.
- GHG emission reduction: At least 7,000 tCO₂e will be avoided annually.
- Economic and livelihood opportunities: Over 250 persons (full-time equivalent: 45 persons) will be employed during construction.

CTF - Clean Technology Fund, GHG - greenhouse gas, MW - megawatt, RE - renewable energy.



Rajasthan Renewable Energy Transmission Investment Program

The program will support the development of the in-state transmission network to evacuate and transmit at least 4,300 MW of renewable-energy installations over the period 2012-2018.

- Financing: Total project cost is \$800 million (\$200 million from CTF, \$300 million from ADB, and \$300 million from the state government of Rajasthan).
- GHG emission reduction: 5.4 MtCO, e yearly.
- Economic and livelihood opportunities: Employment opportunities are expected during the construction and implementation of the projects, and private sector participation (e.g., solar industries, including manufacturing and energy services) will create value-added employment. Communities in Western Rajasthan will benefit from livelihood opportunities identified in the gender action plan.
- Gender and community development: The gender action plan provides for a state-level framework for community-related interventions, and a community development fund for social development and economic rehabilitation projects, a pilot water project, and livelihood opportunities.
- Institutional capacity building: Training for 15 corporate social responsibility champions in private companies and other stakeholders in the government of Rajasthan
- Public-private partnership:
 - The program will demonstrate the commercial and technical viability of developing large-scale projects through public-private partnerships (PPPs). The innovative PPP scheme streamlines the development timeline, reduces development costs, and addresses replication and scale-up issues faced by stand-alone projects.
 - The government, through CTF, will address key investment and technological barriers (site preparation, development of common infrastructure, first-mover risks, etc.) to mitigate perceived risk and promote private sector investment.



Preparing for Carbon Neutrality in the Maldives

The project will demonstrate 100% renewable energy-based systems on 10 small islands and deployrenewable energy-diesel hybrids on some medium to large islands.

- Financing: Total project cost is estimated at \$40.2 million (\$12.8 million from SREP, \$6 million from ADB, \$8 million from the Government of the Maldives, and \$13.4 million from other sources).
- GHG emission reduction emissions: About 5,000 tCO₂e per year.
- Increase in renewable energy capacity: 2 MW of renewable-energy generation installed with adequate storage on 10 islands.
- Energy security: The purchase of about 2 million liters of diesel will be avoided per year.
- Economic and livelihood opportunities: The productive use of power supported in small and medium
 electricity-consuming islands will foster employment creation and business opportunities.
- Institutional capacity development: Support will be given to Fenaka, a state-owned utility company, in designing
 and implementing the project, including capacity building for staff and international expertise to strengthen and
 complement the organization's capabilities.





Delivering Transformative Technologies

Sarulla Geothermal Development Subproject

Will develop steam resources in the Sarulla concession area and construct, operate, and maintain three geothermal power generation units with a total capacity of about 320 MW.

- Increase RE supply and energy savings: about 320 MW of geothermal capacity with output of 2,925 GWh/year.
- GHG emission reduction: 1.3 million tCO2e annually.
- Energy security: The project will help displace fossil fuel-generated power.
- Access to RE: Approximately 500,000 households will benefit from the project.
- Employment opportunities: At least 1,600 persons will be employed during construction (802 skilled or semiskilled and 822 full-time unskilled) and 100 full time skilled or semiskilled workers during operations.
- Women and indigenous people will compose at least 20%–30% of the unskilled/semiskilled positions.
- Health and environment: Pollutants (i.e., (carbon dioxide [CO2], nitrogen oxide [NOx], sulfur oxide [SOx]) and total suspended particulates (including black carbon) will be reduced.
- Gender: Assistance for vulnerable women affected by the land acquisition, employment facilitation for women and indigenous people (IP), and collection of sexdisaggregated data during surveys.





Enhancing Energy Sector Innovations New business model



- Simpa Networks ("Off Grid Pay-As-You-Go Solar Project") in India ADB Investment: \$2 million equity investment in 2013, \$5 million CTF loan under preparation in 2015
- **Investee:** Simpa Networks, a venture-backed technology company with a bold mission: to make modern energy simple, affordable, and accessible for everyone.
- **Strategy:** Simpa offers an unique pay-as-you-go metering solution for off-grid solar home systems in rural India by using mobile phones technology to transform recurring energy expenditures into an eventual capital asset purchase. Scaling up of solar "leasing as a service" model.
- **Development Impacts:** Increased access to affordable clean energy for base of the pyramid (BoP) consumers in rural India (10,000 systems installed as of April 2015), avoiding the greenhouse gas emissions by reducing kerosene usage.

Finance ++ Leveraging Knowledge and Partnerships



Catalyzing Private Capital

- Private equity: clean energy funds (e.g. ADB investment of up to \$20m each in China Environment Fund III, South Asia Clean Energy Fund, Asia Clean Energy Fund; \$15m in Mekong Brahmaputra Clean Development Fund)
- Thailand Solar PV output: 1st large-scale PV farm, \$2m grant from ADB's Clean Energy Financing Partnership Facility finances contingencies; reduces project costs and debt servicing
- Bangladesh Industrial Energy Efficiency: \$30m credit line plus technical assistance to domestic private banks to support introduction of energy saving technologies in the brick kiln and other targeted industries
- PRC Building Energy Efficiency: CNY800m partial credit guarantee to partner banks to cover a portion of principal payments due to the banks for building energy efficiency projects; grant to reduce financing cost and develop capacity of banks to process EE finance projects

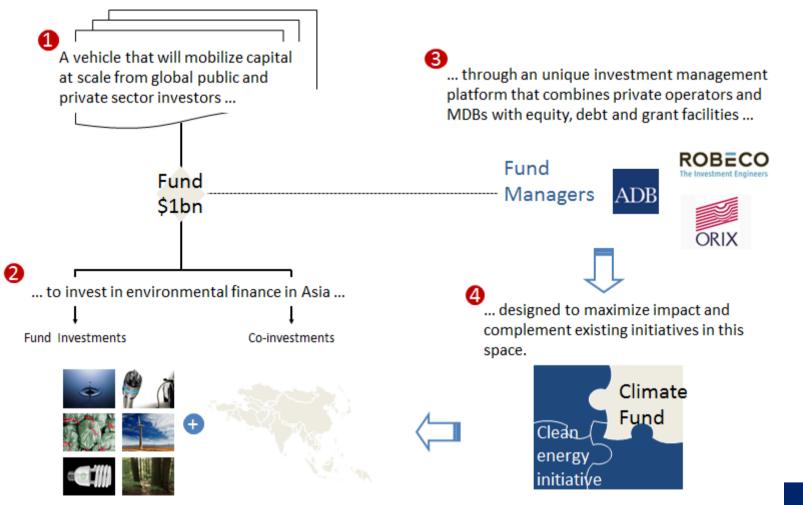


Additional Initiatives

- ADB-Canada Climate Fund for the Private Sector in Asia (\$81.5 million)
 - **\$74.1M of non-grant (loan) funds** exclusive to private sector operations
 - \$7.3M of grants must be private sector oriented
- \$500 million raised for green bonds, issued last March 2015
- CIF-SCF Private Sector Competitive Reserve Funds
- IPEx Cleantech Asia first low carbon technology exchange and IP transfer platform (marketplace)
- Climate Public Private Partnership Fund (now Asia Climate Partners) (next slide)



Asia Climate Partners





Knowledge and Partnerships

Knowledge Products

- Economics of climate change and GHG accounting
- Flagship studies (migration, agriculture, health)
- Mitigation, clean energy and energy access
- Adaptation, risk management and climate risk screening tools
- Climate technology and climate finance
- Urban resilience and sustainable transport

Partnerships

- Climate finance tracking and reporting, GHG accounting, transport (with MDBs, others)
- Asia Pacific Adaptation Network (with UNEP, IGES, others)
- Asia Clean Energy Forum, Urban Forum, Transport Forum (with several partners)
- The Global Commission on the Economy and Climate
- Centers of excellence (COEs) actively providing ideas (knowledge solutions) to solve problems
- Regional Consortium and Data Facility
- Climate services for resilient development



Plans for 2016

- Development of a climate change strategic framework to deliver scaled up climate finance
- Engagement with DMCs on INDC implementation
- Enhancing readiness of DMCs for accessing climate finance from Green Climate Fund and others
- Continue bilateral work on climate change (e.g. with PRC)
- Engagement with other emerging economies
- Piloting innovative financial instruments



Thank You

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