



Climate Change and Disaster Risk Management

AIT Climate Change Seminar

Bangkok, Thailand, 11 February 2020

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OUTLINE

The ADB logo is a dark blue square with the letters 'ADB' in white, serif font.A horizontal bar composed of several colored segments: yellow, orange, blue, light blue, lime green, and green.

Asia-Pacific Climate Change and
Disaster Risk Management (DRM)
Challenge

Priorities of ADB on Climate
Change and Disaster Risk
Management

Climate and DRM Finance

Innovative Projects and
Initiatives

Case Study: PRC Shandong Green
Development Fund



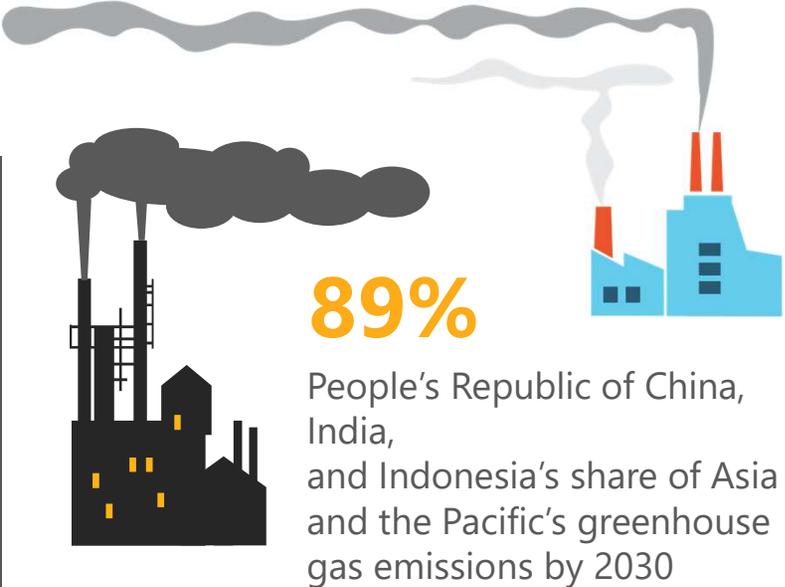
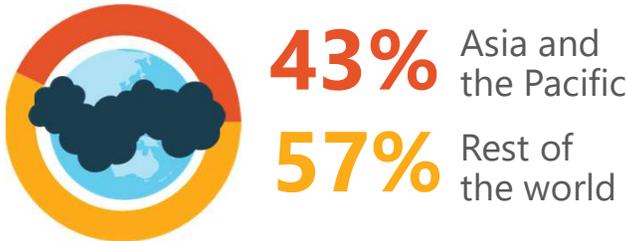
Asia-Pacific Climate Change and Disaster Risk Management Challenges



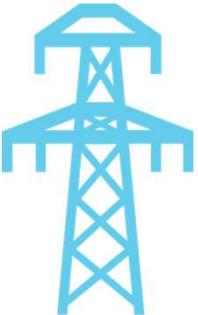
Climate Change and DRM Challenges

ASIA AND THE PACIFIC IS KEY

2017 CO₂ emissions:



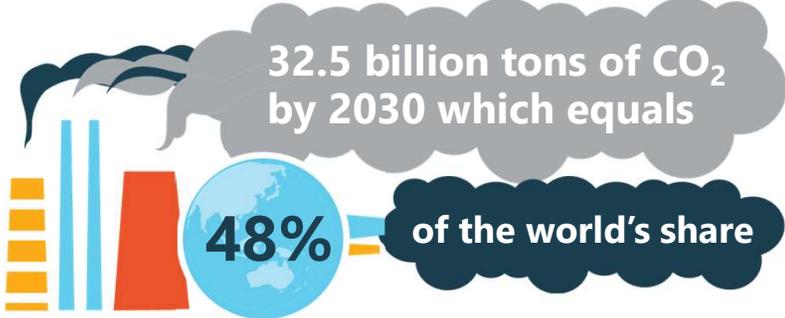
Developing Asia's share of world electricity demand will grow to*



43% in 2030
The PRC and India will make up **64%** of Asia's power consumption

*projection under New Policies scenario

Without radical changes, Asia and the Pacific will emit



Climate Change and Disasters in Asia and the Pacific

Impacts from Disasters in Asia and the Pacific (1989–2018)



5.2 billion
People affected
by disasters

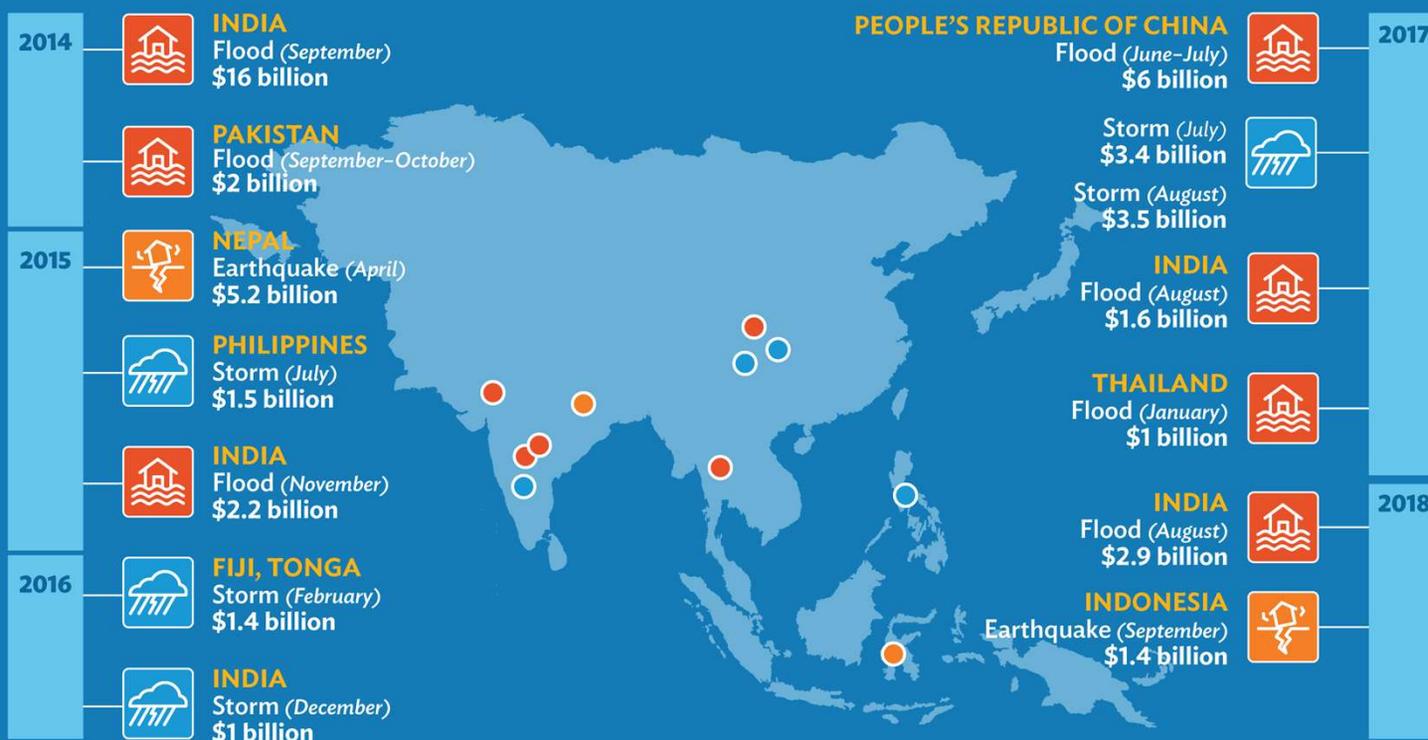


1 million
Disaster fatalities



843.6 billion
Total direct physical loss

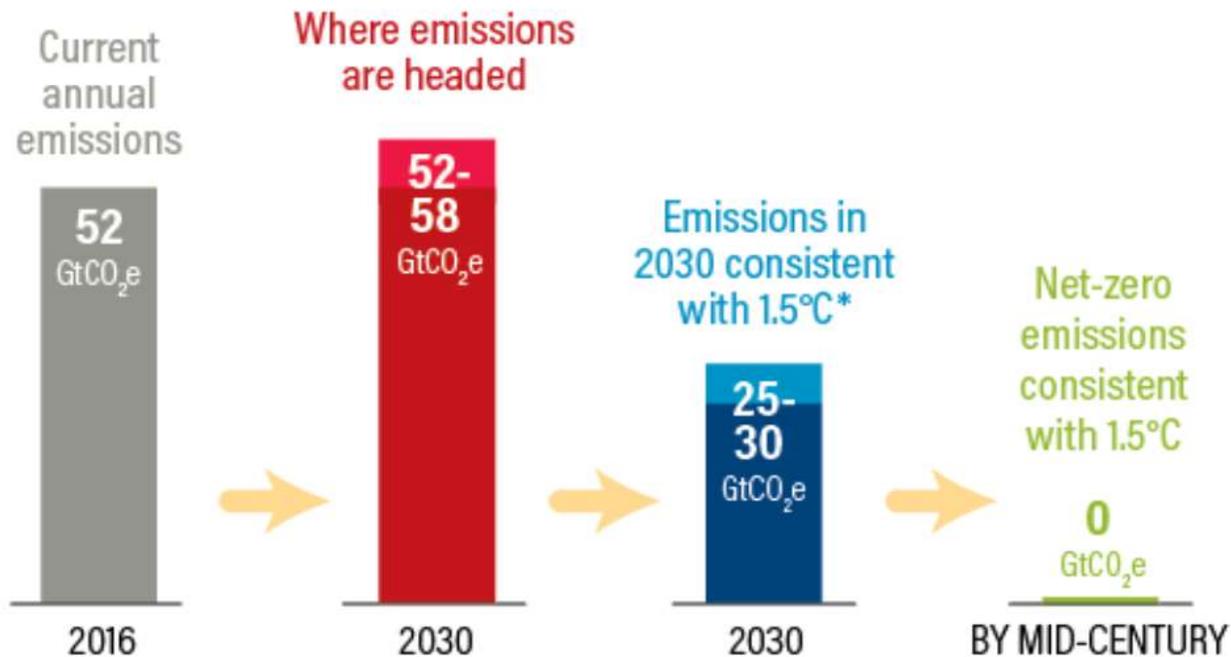
Damages from Recent Disasters in Asia and the Pacific¹



Note: 1. The amounts refer to the monetary amount of damage to property, crops and livestock at the year of the event. (Center for Research on the Epidemiology of Disasters)

The Alarming Gap

The World is **not** on Track to Limit Temperature Rise to 1.5°C

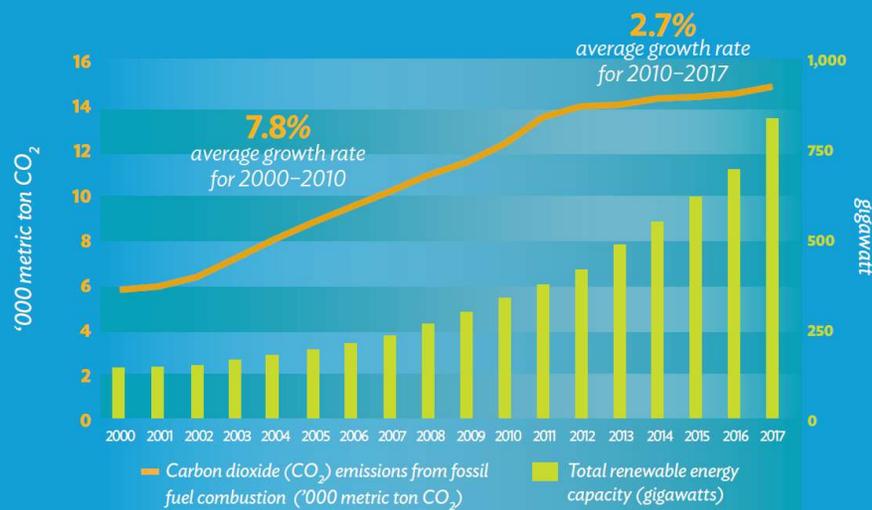


Notes: *on average, no or low overshoot.

The battle against climate change will be won or lost in Asia and the Pacific

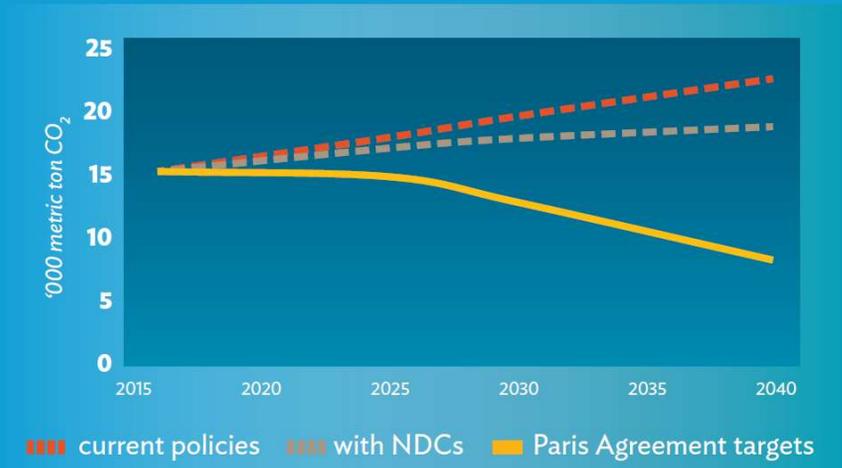


Carbon dioxide emissions from fossil fuel combustion and total renewable energy capacities in ADB DMCs



In 2017, the PRC's renewable energy capacity reached **696 gigawatts**, ranking first among all countries.

THE EMISSIONS GAP IN ASIA AND THE PACIFIC*
Outlook vs Paris Agreement Target



* CO₂ emissions from fossil fuel combustion for Asia Pacific³ for scenarios (Current Policies, New Policies, and Sustainable Development) in World Energy Outlook 2018

Priorities of ADB on Climate Change and Disaster Risk Management

ADB

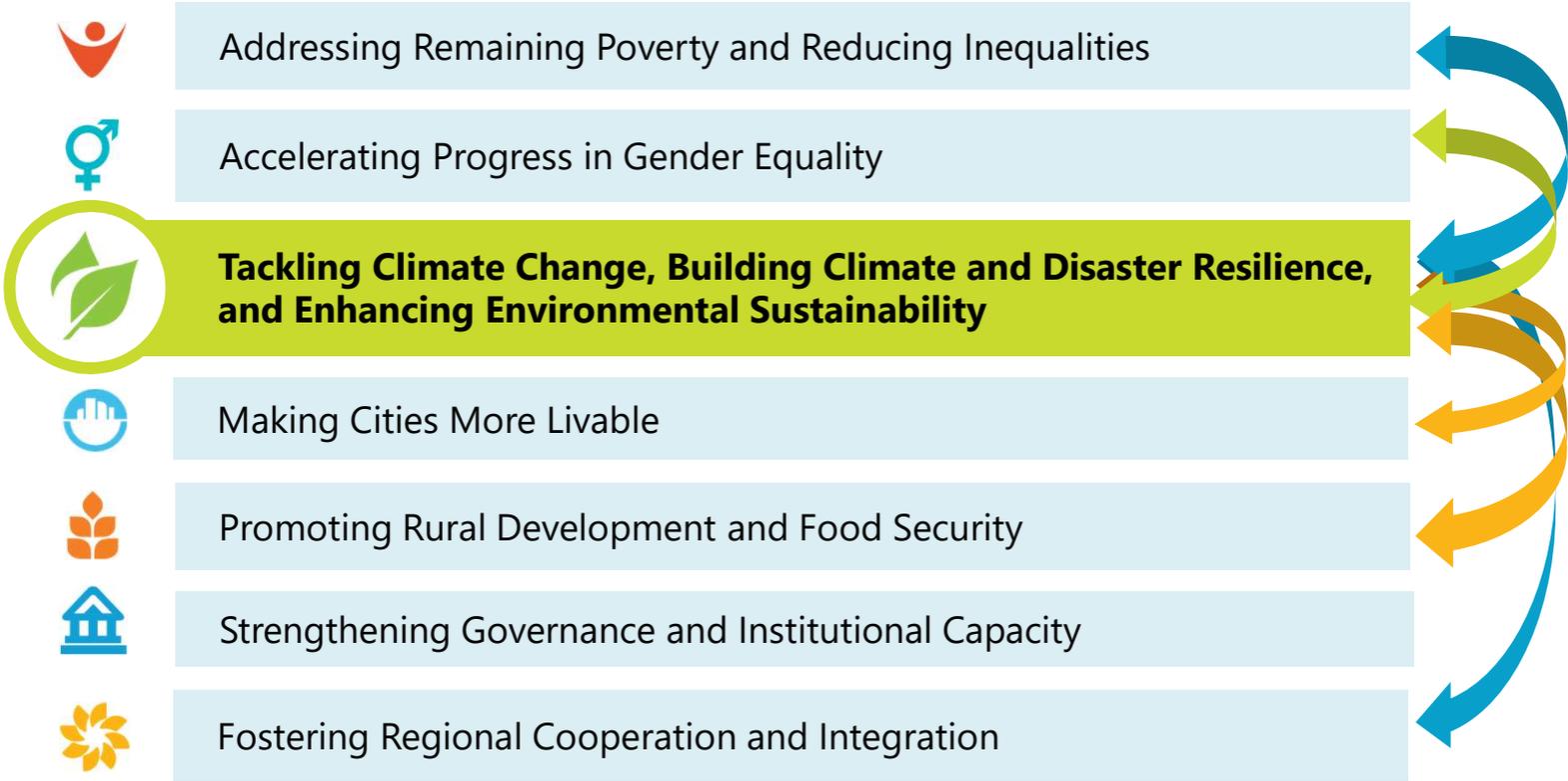


ADB Strategy 2030:

Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific



Seven Operational Priorities



Target 75% of ADB's of the number of committed operations (on a 3-year rolling average) will support climate mitigation and adaptation by 2030



Target Climate finance from ADB's own resources reach \$80 billion (2019-2030)

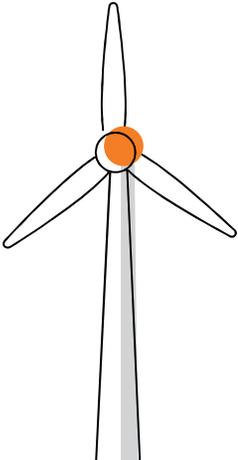
ADB's Climate Finance Target by 2020

Target under the Corporate Results Framework:
ADB-assisted projects that support climate mitigation and/or adaptation: **45% for ADB, 35% for ADF**

Funding for tackling climate change will rise to **around 30%** of its overall financing

ADB will double its annual climate financing to

\$6 billion



OUT OF THE \$6 BILLION

\$4 billion

will be dedicated to **mitigation** through scaling up support for renewable energy, energy efficiency, sustainable transport, and building smart cities.

\$2 billion

will be **adaptation** through more resilient infrastructure, climate-smart agriculture, and better preparation for climate-related disasters.



Enhancing Actions to Tackle Climate Change



Clean Energy

- Expand **demand side** energy efficiency projects (e.g. electrical lighting), requiring new business models
- Increase **cross sectoral projects** (finance, urban, transport, water, agriculture etc.) requiring new financing instruments; integrated approach, e.g. **low carbon cities**



Sustainable urban development

- Promote an integrated approach to address climate risks.
- Knowledge exchange on climate mitigation and adaptation measures.
- Build capacities of cities to utilize climate finance to achieve local environmental improvement objectives.
- Link nationally determined contribution frameworks to city-level greenhouse gas accounting.



Sustainable transport

- Focus on low carbon transport modes (public transport, railways, e-vehicles)
- Ensure climate resilience in project design (additional drainage, raised road levels, storm surge protection)
- Achieving ADB climate change targets in transport sector support

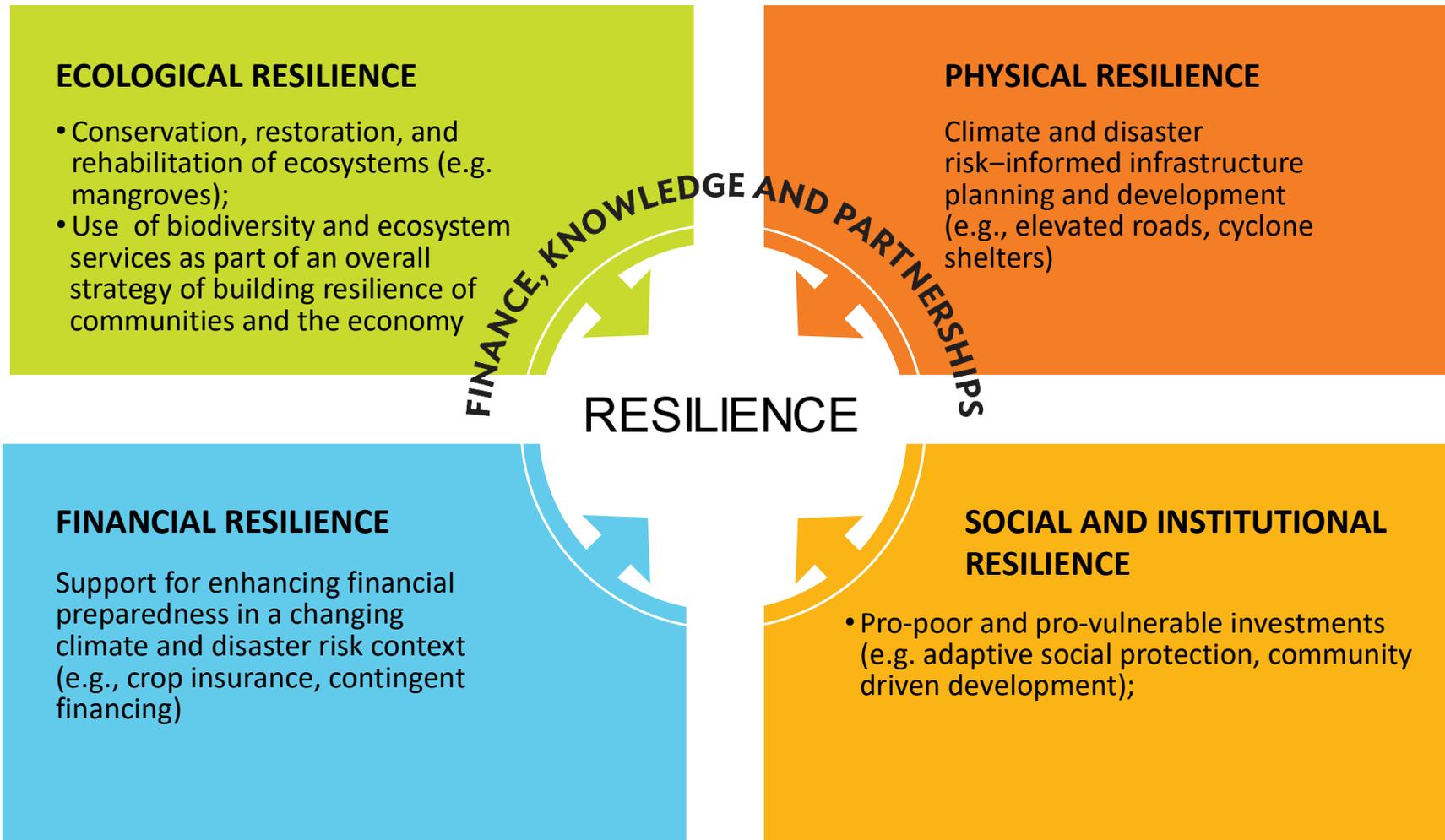


Climate-smart agriculture

- Explore new approaches, innovative ideas, and partnerships to ensure ADB investments are climate-smart by 2030
- Identify adaptation and mitigation measures to integrate in project pipelines
- Prepare guidance notes to track climate finance investments



Comprehensive Approach to Climate and Disaster Resilience



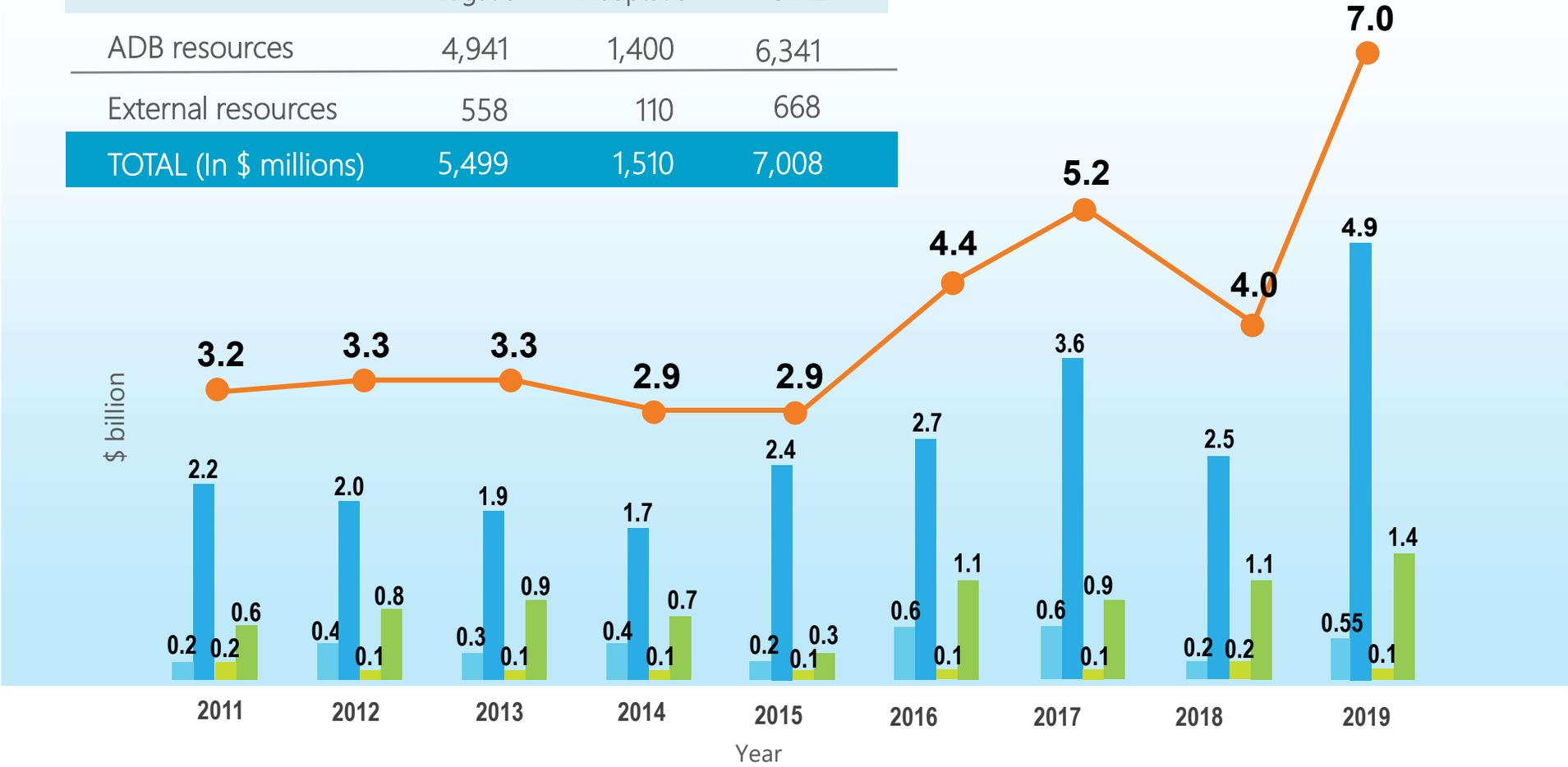
Climate and Disaster Risk Management Finance

ADB



ADB Climate Finance Approvals

2019 Climate Finance	Mitigation	Adaptation	TOTAL
ADB resources	4,941	1,400	6,341
External resources	558	110	668
TOTAL (In \$ millions)	5,499	1,510	7,008



■ Mitigation External ■ Adaptation External
■ Mitigation ADB resources ■ Adaptation ADB resources —●— Total Climate Finance

ADB Approach to Climate Finance Mobilization

Deploying concessional resources

Internally managed resources (ADB donor trust funds and special funds)

- Climate Change Fund (CCF)
- Clean Energy Financing Partnership Facility (CEFPF)
- Urban Climate Change Resilience Trust Fund (UCCRTF)
- **Asia-Pacific Climate Finance Fund (ACliFF)**
- **High Level Technology Fund (HLTF)**
- Others with bilaterals

Multilateral funds

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

Maximizing market mechanisms

- **Upfront carbon finance**
 - Asia Pacific Carbon Fund
 - Future Carbon Fund
- **Carbon Market Technical Support Facility**
 - Clean Development Mechanism support
 - domestic emissions trading
- **Japan Fund for the Joint Crediting Mechanism**
- **Green and Climate Bonds**
- Supporting **other market mechanisms** (e.g. 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

Finance: Deploying Concessional Resources from Multilateral Funds

Established in **2010** to channel climate finance, with pledges of **\$10.3 billion from 43 state governments***

ADB's total GCF Funding to date: **\$473 million**

Green Climate Fund (GCF) has so far committed **\$5.6 billion to**



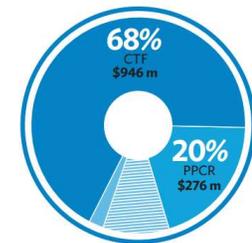
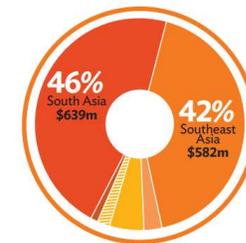
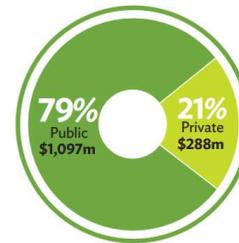
124 projects globally



Established in **2008** represents one of the first global efforts to invest in a dedicated climate finance vehicle.



Note: Out of the \$1.39 billion ADB CIF Portfolio, total project funds approved to date is \$1.28 billion (92%)



*First replenishment received \$9.8 billion in pledges from 28 governments including two additional EU member states with new pledges during the Replenishment Pledging Conference held in Paris on 24-25 October 2019.

CTF=Clean Technology Fund, FIP=Forest Investment Program, PPCR=Pilot Program for Climate Resilience, SREP=Scaling Up Renewable Energy in Low Income Countries Program

ADB and the Green Climate Fund



Established in **2010** to channel climate finance, with pledges of **\$10.3 billion from 43 state governments***

Green Climate Fund has so far committed **\$5.6 billion to**



ADB Project	Total Project Cost (in \$ million)	Type and Approval Date	Total GFC Funding (in \$ million)
Fiji Urban Water Supply and Wastewater Management Project	100 (Tranche 1)	Adaptation November 2015	31 (grant)
Pacific Islands Renewable Energy Investment Program	sum of subprojects	Mitigation November 2016	5 (grant)
Cook Islands Renewable Energy Subproject	14		12 (grant)
Nauru: Sustainable and Climate-Resilient Connectivity Project (formerly Port Development Project)	65	Mitigation and adaptation October 2017	27 (grant)
Tajikistan: Institutional Development of the State Agency for Hydrometeorology	11	Adaptation February 2018	5 (grant)
Cambodia: Climate-Friendly Agribusiness Value Chains Sector Project	140	Mitigation and adaptation February 2018	10 (loan) 30 (grant)
Mongolia: Ulaanbaatar Green Affordable Housing and Resilient Urban Renewal Project (AHURP)	544	Mitigation and adaptation February 2018	95 (loan) 50 (grant)
Kiribati South Tarawa Water Supply Project	58	Mitigation and adaptation October 2018	29 (grant)
Tonga Renewable Energy Project (TREP) under the Pacific Islands Renewable Energy Investment Program	53	Mitigation October 2018	30 (grant)
Pakistan Green Bus Rapid Transit	585	Mitigation October 2018	21 (grant), 29 (loan)
Shandong Green Development Fund	1200	Mitigation and Adaptation November 2019	100 (loan)
Approved Total			473

*First replenishment received \$9.8 billion in pledges from 28 governments including two additional EU member states with pledges during the Replenishment Pledging Conference held in Paris on 24-25 October 2019.

Finance: New Trust Fund for the Pacific

Ireland Trust Fund for Building Climate Change and Disaster Resilience in Small Island Developing States (SIDS)

- established by ADB and the Government of Ireland in May 2019
- committing to an initial 6-year program of funding of **€12 million (\$13.5 million)** for the period 2019 to 2024.
- primarily supports technical assistance and capacity development in the SIDS, through activities such as financing climate-proof infrastructure, helping countries plan for and respond to climate change, and leveraging global climate resources for mitigation and adaptation efforts
- aims to increase the preparedness and resilience of SIDS to disasters caused by natural hazards and to the impact of climate change; expected outcome of the fund is an increased number of investments in climate change and disaster resilience

Three proposals currently under consideration:

- i. Regional Technical Assistance (TA): Pacific Disaster Resilience Program (8 countries)
- ii. Tonga - Support to the Tonga Climate Change Trust Fund (CCTF) for community adaptation projects
- iii. Vanuatu, Port Vila - Community Action Plans for Strengthening Urban Resilience



Asia-Pacific Climate Finance Fund (ACliFF)

- A multi-donor trust fund approved on 28 April 2017 with up to US\$30 million contribution from Germany. The maximum amount of aggregate contributions is envisaged to not exceed \$200 million.
- ADB has initial contribution of US\$1 million towards an accompanying Technical Assistance to support the operationalization of ACliFF.
- ACliFF will support the assessment, development and provision of **financial risk management products** that can help unlock financing for climate investments in clean technologies and practices, which are necessary for climate change mitigation and adaptation; and improve resilience of the poor and vulnerable to the impacts of climate change.
- Total contributions received: **\$11.39 million** as of September 2019



Finance: First Approved Annual Plan of Asia Pacific Climate Finance Fund (ACliFF)

- A multi-donor trust fund approved on 28 April 2017 with up to **US\$30 million** contribution from Germany; ADB has made an initial contribution of **US\$1 million** towards an accompanying Technical Assistance to support the operationalization of ACliFF.
- ACliFF supports the assessment, development, and provision of **financial risk management products** addressing climate investments and extreme weather risks

2020 ACliFF Pipeline approvals (in \$'000)

Project	Total	Direct Charges	Investment Grants
Bangladesh: Scaling up Weather Index-Based Crop Insurance Pilot Project	200	200	
Afghanistan: Wind Project	2,000		2,000
Pacific: Renewable Energy Guarantee Program	3,200	200	3,000
Philippines: City Disaster Insurance Pool	5,000	200	4,800
Regional: Climate Disaster Facility for Microfinance Institutions	190	190	
Total	10,590	790	9,800

Canadian Climate Fund for the Private Sector in Asia (CFPS) II

- established in April 2017 with a **CAD \$200 million contribution (US\$149.5 as of September)**
- designed to support greater **private sector participation** in climate change mitigation and adaptation in low and lower middle income countries and upper middle-income small island developing states in Asia and the Pacific.
- will seek to **promote gender equality and the empowerment of women** and girls in projects supported by the fund.
- will aim to play a key role in helping the private sector **overcome development risks** (including market risks, technology risks, financing risks, regulatory and other risks) by offering financing on **concessional terms** and conditions to projects that would not proceed solely on a commercial basis.



Sernsang Khushig Khundii Solar Project

provided a technical assistance grant to offset first mover costs and to catalyze the financing of ADB's first private sector solar power project in Mongolia

Innovative Projects and Initiatives



Cambodia: National Solar Park Project



Innovative Project Design

TOTAL FINANCING: \$21.65 million

- \$ 7.64 million COL/ADF
- \$ 11 million Strategic Climate Fund (loan)
- \$ 3 million Strategic Climate Fund (grant)

DATE APPROVED 23 May 2019

TA 9736-CAM: Capacity Development in the Electric Utility Industry
\$500,000 Republic of Korea e-Asia and Knowledge Partnership Fund (grant)

TOTAL CLIMATE FINANCE \$21.64 million

TOTAL ADAPTATION FINANCE

\$1.17 million

TOTAL MITIGATION FINANCE

\$6.47 million (COL/ADF)
\$14 million (Strategic Climate Fund)

Collaboration between:

- Southeast Asia Department
- Office of Public-Private Partnership
- Private Sector Operations Department

CONTEXT

Project will support the expanded deployment of solar photovoltaic power plants in Cambodia and address the country's need to (i) expand low-cost power generation; (ii) diversify the power generation mix with an increase in the percentage of clean energy, in line with its greenhouse gas emission reduction targets; and (iii) expand the use of competitive tenders and other global best practices in the energy sector.

DESCRIPTION

The project will have two outputs: (i) a 100 MW solar power park in Kampong Chhnang Province and a transmission interconnection system to grid substation 6 (GS6) near the Phnom Penh demand center to supply power to the national grid.; and (ii) strengthened capacity of Electricite du Cambodge (EDC) in solar power plant construction and operation, project design and supervision, grid integration, and competitive procurement. EDC with ADB's support has tendered out the first 60 MW of generating capacity at the solar park to the private sector (independent power producer).

UNIQUE FEATURES

- (i) first large-scale solar park in Southeast Asia
- (ii) exhibits **ONE ADB** approach (OPPP, SERD and PSOD working together) in providing end-to-end support to the country
- (iii) obtained the lowest solar procurement price in the ASEAN in 2019 at 3.88 cents/kilo watt-hour for the electricity

PRC: Shandong Green Development Fund Project (SGDF)



Innovative Financing

TOTAL FINANCING: \$ 200 million (w/o cofinancing)

- \$100 million (OCR)
- \$100 million
Green Climate Fund (concessional loan)
- \$ 84.53 million
Agence Francaise de Developpement
(Not ADB Administered)
- \$113.69 million
KfW Bankengruppe
(Not ADB Administered)

DATE APPROVED 25 September 2019

TOTAL CLIMATE FINANCE: \$200 million

TOTAL ADAPTATION FINANCE

\$25 million (OCR)

\$25 million (GCF)

TOTAL MITIGATION FINANCE

\$75 million (OCR)

\$75 million (GCF)

East Asia Department

CONTEXT

PRC plays a pivotal role in managing the climate change challenge in Asia and the Pacific. Given the country's current level of greenhouse gas (GHG) emissions and climate vulnerability, there is a vast need for climate-related investments going beyond business as usual to underpin its development targets. With high reliance on coal power and heavy industry, Shandong Province is initiating systemic interventions to build climate resilience and decarbonize its economy.

DESCRIPTION

The project will create a "fund" to catalyze private, institutional and commercial (PIC) capital for the development of climate positive infrastructure and business in Shandong Province and will support a portfolio of mitigation and adaptation subprojects assessed against both climate and financial eligibility criteria. It will also enhance knowledge and skills of local governments, civil society, and private sector to prepare climate-positive subprojects

UNIQUE FEATURE

The project will have a leveraging effect with SGDF financing and will be time bound and targeted. It will incentivize subprojects to adopt green procurement standards, as greening a subproject's supply chain such that it shifts from "good practices" to "advanced benefits" will enable access to better financing terms and conditions from the SGDF. The project will also adopt SOURCE, a multilateral digital platform to fast-track the delivery of quality infrastructure projects.

Pacific Renewable Energy Program



Innovative Project Design

TOTAL FINANCING: \$100 million

- \$50 million
OCR
- \$50 million
Partial Risk Guarantee

DATE APPROVED 17 April 2019

TOTAL CLIMATE FINANCE: \$80 million

TOTAL MITIGATION FINANCE

\$40 million (OCR)
\$40 million (Guarantee)

Collaboration between:

- Private Sector Operations Department
- Pacific Department

CONTEXT ADB's 14 Pacific DMCs are undergoing a structural transition from power generation based on fossil fuels to generation from renewable energy sources, in an effort to lower power generation costs, reduce greenhouse gas emissions, and improve energy security. However, lack of technical capacity of power utilities in the renewable energy sector limits the internal skills available to manage grids that are moving rapidly from relatively simple single-source generation systems (diesel) to grids with multiple intermittent renewable energy sources. Private sector investment in owning and operating intermittent renewable energy generation facilities is crucial to supplementing local capacity and filling the investment gap in the sector.

DESCRIPTION The program will provide a financing structure to support the power payment obligations of power utilities where governments are unable to guarantee a utility's offtake obligations under power purchase agreements due to fiscal constraints. **The output will support an estimated 5 separate renewable energy projects in Pacific DMCs over a 5-year period.**

UNIQUE FEATURE The program was developed by PSOD (PSIF2) and PARD (PAEN) under a **One ADB** approach to provide a credit enhancement structure for supporting the credit worthiness of Pacific power utilities where governments are no longer able or willing to provide government guarantees for their power utility's offtake obligations. It was designed to encourage private sector investment by using donor funds to backstop the power payment obligations of the power utilities. The design for each project under the program includes one or more of the following forms of financing support: partial risk guarantee, direct loan, letter of credit, and technical assistance.

Myanmar: Resilient Community Development Project



Innovative Project Design

TOTAL FINANCING \$225.58 million

- \$10 million
ADF (Grant)
- \$185 million
COL (Concessional Loan)
- \$27.58 million
Asia Investment Facility
- \$3 million
Japan Fund for Poverty Reduction

DATE APPROVED 26 November 2019

TOTAL CLIMATE FINANCE: \$59.54 million

TOTAL ADAPTATION FINANCE
\$59.54 million

Collaboration between:

- Southeast Asia Department

CONTEXT

Myanmar ranks among the highest in the 2017 Global Climate Risk Index. Almost the entire country is affected by a range of natural hazards. Project areas are particularly prone to landslides, floods, droughts, cyclones and storms depending on their location. Resilience-building measures can support communities in coping with Climate Change and Disaster risk.

DESCRIPTION

The project will improve standard of living and community resilience through: (i) Climate- and disaster-resilient community infrastructure (e.g. cyclone shelters, water harvesting infra, embankment and water management); (ii) Resilient livelihood activities for the poor (e.g. income diversification, adaptive crops); (iii) Institutional and organizational capacity building of communities and government (e.g. climate and disaster information included in Village Development Plans).

UNIQUE FEATURE

1. Builds on TA Strengthening Climate and Disaster Resilience of Myanmar Communities which provided climate and disaster risk modeling information and climate forecasts.
2. Includes a Disaster contingency feature.
3. Uses climate projections and disaster data to select cluster project areas.



Pacific Disaster Resilience Program (Phase 2)



Innovative Financing

TOTAL FINANCING: \$24 million

- \$21 million
ADF
- \$3 million
Concessional OCR

DATE APPROVED 27 September 2019

TOTAL FINANCING: \$9.6 million

TOTAL ADAPTATION FINANCE
\$8.4 million (ADF)
\$1.2 million (Concessional OCR)

Pacific Department

CONTEXT

ADB's Pacific DMCs are highly exposed to many different types of natural hazards, including tropical cyclones, earthquakes, tsunamis, volcanic eruptions, floods, and droughts. The region also experiences a disproportionately high share of global disaster impacts relative to its economic and demographic size. Disaster risk is increasing because of climate change.

DESCRIPTION

The project will provide a source of financing for timely disaster response and early recovery and support policy actions to strengthen policy and institutional arrangements for disaster risk management (DRM), improve the disaster and climate resilience of physical infrastructure, and expand disaster risk financing. The program is the second phase of the Pacific Disaster Resilience Program, approved in December 2017 for Samoa, Tonga, and Tuvalu. It will provide a second round of contingent financing for **Tonga** and add three new countries (the **Marshall Islands**, the **Federated States of Micronesia**, and **Solomon Islands**) to the program.

UNIQUE FEATURE

ADB's first use of the new Contingent Disaster Financing option under the policy-based loan modality.

In December 2019, this program was approved for the **Cook Islands**, marking the first time that the CDF option has been applied to a regular OCR-only country. After the occurrence of a qualifying disaster during the term of the program, the government may request one or more loans of up to a total of \$10 million. At that time, ADB and the Cook Islands will enter into a short-form agreement that will specify the actual loan amount requested by the Cook Islands, as well as the lending terms, and only then will ADB commit the requested amount. Upon signing the short-form agreement, there will be a one-time front-end fee of 0.10% of the committed loan amount.

Bangladesh: Dhaka and Western Zone Transmission Grid Expansion Project



Innovative Technology

TOTAL FINANCING: \$500.75 million

- \$300 million OCR
- \$200 million Asian Infrastructure Investment Bank (AIIB) (loan)
- \$ 0.75 million People's Republic of China Poverty Reduction and Regional Cooperation Fund (grant)

DATE APPROVED 8 November 2019

TOTAL CLIMATE FINANCE: \$315 million

TOTAL ADAPTATION FINANCE
\$70.70 million (OCR)
\$47.10 million (AIIB)

TOTAL MITIGATION FINANCE
\$117.20 million (OCR)
\$80 million (AIIB)

South Asia Department

CONTEXT

Despite its economic success, Bangladesh faces major challenges in maintaining growth trends and reducing poverty because of infrastructure deficiencies in the energy sector and elsewhere. To address these deficiencies, the government is prioritizing the provision of modern, reliable, and affordable energy services to those who lack access. The project will contribute to the goal of the Government of Bangladesh to achieve electricity for all by 2021.

DESCRIPTION

The project will help expand and strengthen the transmission networks in the Greater Dhaka area and western zone of Bangladesh, improve financial management in Power Grid Company of Bangladesh Limited (PGCB), and apply best practices in operations and maintenance. It will: (i) construct 40 kilometers (km) of transmission lines and 4,450 megavolt-amperes (MVA) of substations in Greater Dhaka; (ii) construct of 368 km of transmission lines, 3,070 MVA of substations, and 20 bay extensions in the western zone; and (iii) establish an enterprise resource planning (ERP) system and a drone inspection center to strengthen capacity in asset management and operation and maintenance.

UNIQUE FEATURE

The project uses gas insulated substations that will address climate risks; uses low-sag power line conductors to deal with high temperatures drastically cutting systems losses; it will also employ drones that can be operated remotely to monitor transmission lines. Project design also includes capacity building, including promoting women employment in technical positions at the drone inspection center.

Regional: Legal Readiness for Climate Finance and Climate Investments

TOTAL FINANCING

- \$0.875 million
TSAF

DATE APPROVED 16 August 2016
DATE CLOSING 30 June 2020

TOTAL CLIMATE FINANCE
\$0.88 million

TOTAL ADAPTATION FINANCE
\$0.44 million

TOTAL MITIGATION FINANCE
\$0.44 million

Office of the General Counsel

CONTEXT

Legal readiness for climate finance will become increasingly critical as DMCs start to translate their commitments under the Paris Agreement into specific actions on the ground. ADB provides TA to help its DMCs identify legal barriers to accessing climate and disaster finance, find opportunities for legal reform to address legal barriers to finance, and recommend ways to address interlinked regulatory, institutional, and administrative impediments to such finance.

UNIQUE RESULT:

LAO PDR

- ✓ **Climate change decree enacted** providing an umbrella framework for climate finance and coordination mechanisms for climate change monitoring and reporting requirements. Currently *developing a national climate change strategy*
- ✓ **Disaster management law enacted** setting out coordination mechanisms among the national and sub-national entities involved in disaster prevention, response and recovery efforts. Currently *developing a national disaster risk reduction strategy and related infrastructure*

FIJI

- ✓ **Climate Change Bill introduced** providing a comprehensive framework to guide Fiji's response to climate change, including key operative provisions of the Paris Agreement, governance structure and climate finance mechanisms

NAURU

- ✓ **Legal assessment conducted** identifying the absence of legal framework to support renewable energy projects and to regulate an energy market in general. Currently *developing a new energy law* to fill the gap.

Philippines: City Disaster Insurance Pool Project

Total Cost: \$100 million (OCR)

Status: Proposed

CONTEXT

The Philippines is one of the world's most disaster-prone countries. Urban areas account for a high and increasing share of the country's disaster risk, with 70% of GDP already generated in urban areas. City governments face significant challenges in securing timely financing for rapid early recovery in the event of major disasters.

DESCRIPTION

The proposed Philippine City Disaster Insurance Pool Project (PCDIP) will provide seed capital to establish and capitalize a **pooled** insurance company from which cities can purchase parametric insurance against **typhoons** and **earthquakes**. It will support cities to become self-sustaining in managing disaster risk and rehabilitating their infrastructure. These 10 cities were chosen to pilot PCDIP and are expected to be the first batch of policyholders: Bacolod, Baguio, Butuan, Caloocan, Dagupan, Davao, Iloilo, Marikina, Paranaque and Quezon City. 7 more cities joined consultations.

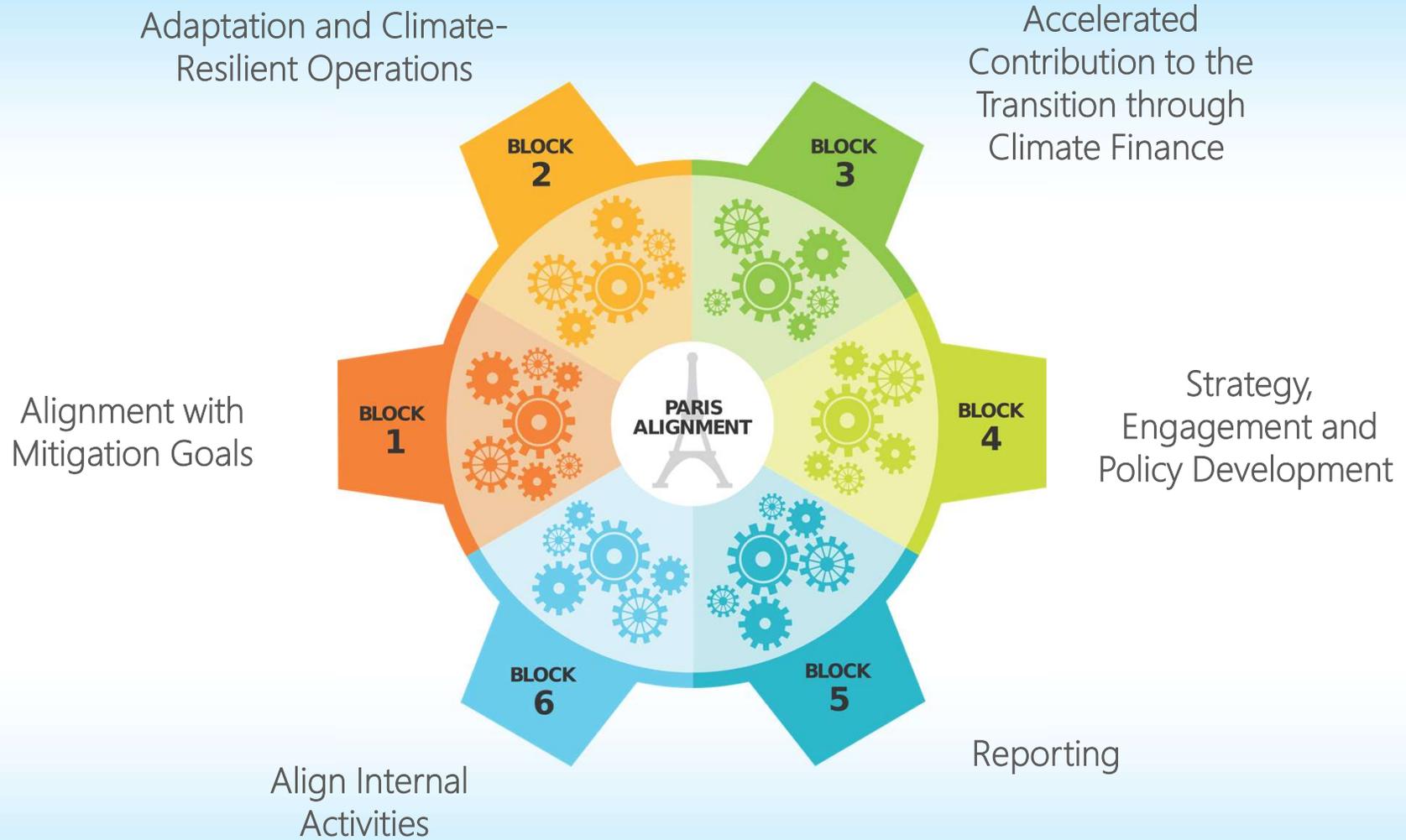
UNIQUE FEATURE

PCDIP will be the world's first city insurance pool. The risk pooling mechanism will reduce premium costs via risk diversification, economies of scale, and profit retention and provide payouts within 15 business days of qualifying disasters.

Recent Initiatives



Paris Alignment and the 6 Building Blocks

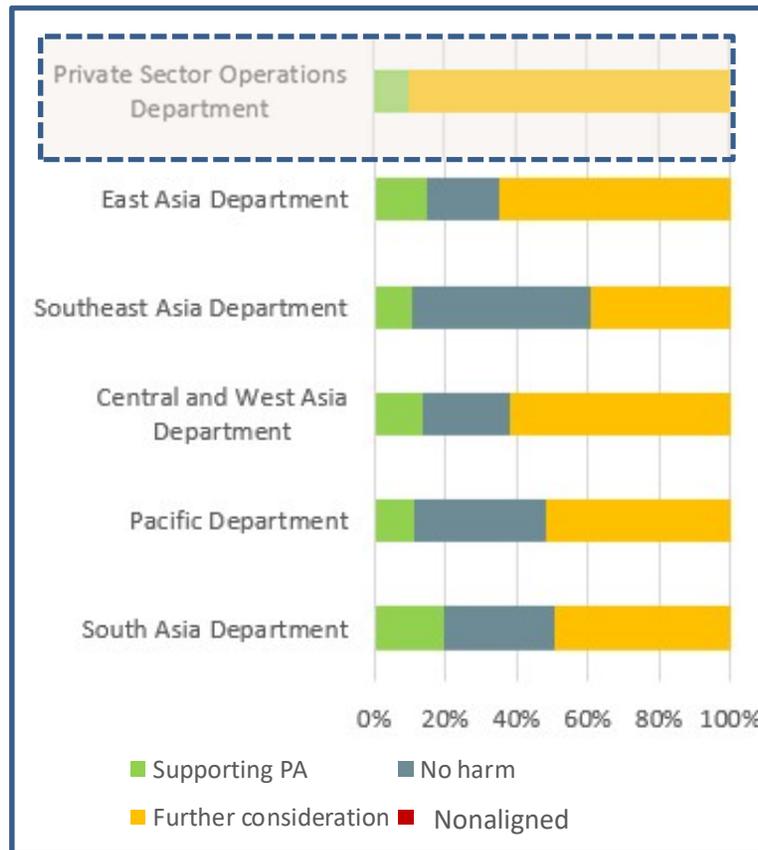


Paris Alignment: ADB operations alignment with mitigation goals



Initial Portfolio Analysis (2016-2018):

Breakdown of total financing volumes by categories to departments



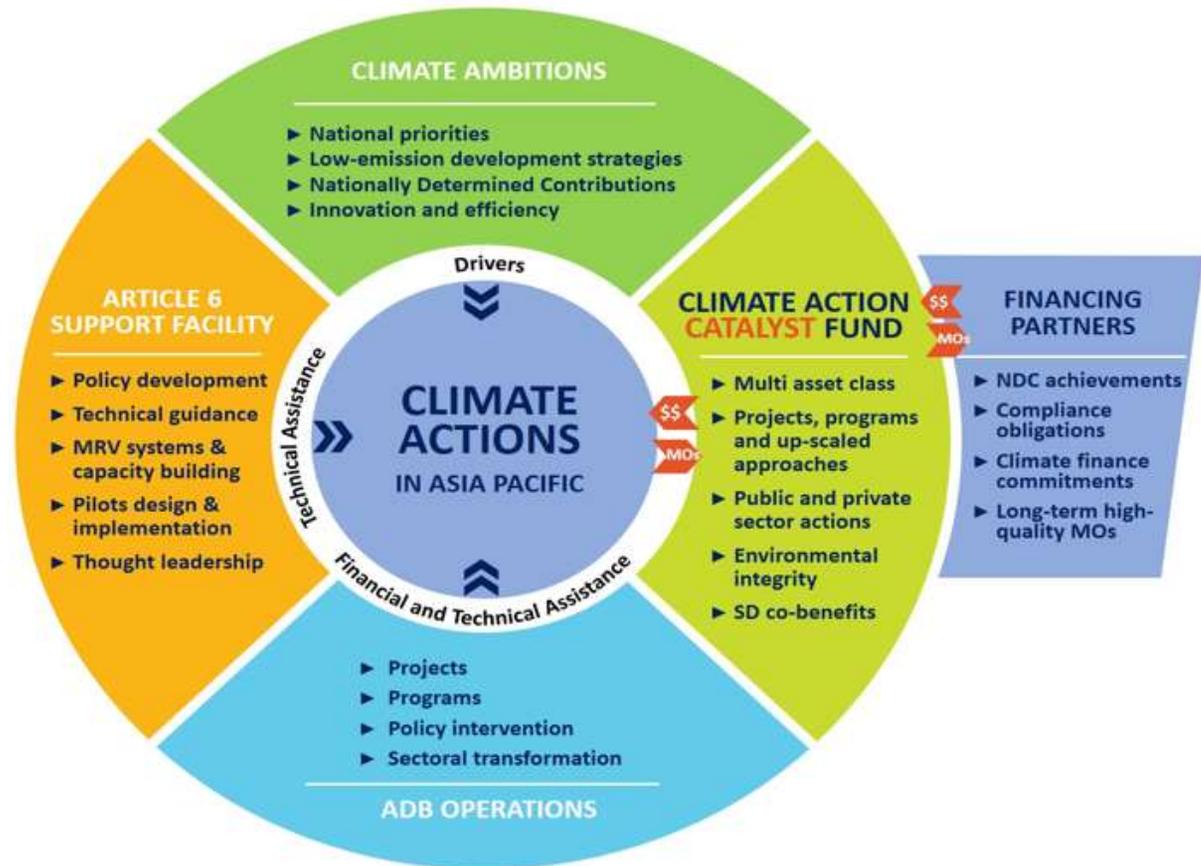
Actively supporting PA	No harm	For further consideration	Non aligned
E.g. solar PV, wind energy, energy utility reform, agricultural policy, institutional development...	E.g. health system development, education, banking systems, ...	E.g. oil and gas transmission and distribution, road transport, air transport, energy efficiency,...	*

*Potentially nonaligned projects are e.g. oil and gas exploration, unabated coal fired power plants. Some of those are already on exclusion lists at ADB, others not financed in practice, or not mentioned specifically as a subsector (e.g. no differentiation by fuel in conventional energy supply).

Carbon Market 2.0

Climate Action Catalyst Fund (CACF)

- a multi-partner trust fund to channelize carbon finance to ADB funded projects through purchase of carbon credits Article 6 of the Paris Agreement for governments, public, and private sector financing partners in developed countries;
- a post 2020 carbon fund designed to support DMCs and financing partners to use cooperative approaches for achieving their NDCs and raising ambition over time in line with spirit of the Paris Agreement;
- will provide much needed financing to support and catalyze mitigation actions while simultaneously benefitting financing partners in accessing high quality mitigation outcomes over 2021 to 2030 period;
- Will support DMCs to use carbon finance to promote and scale-up the application of innovative low-carbon technologies to accelerate the transition to low carbon growth

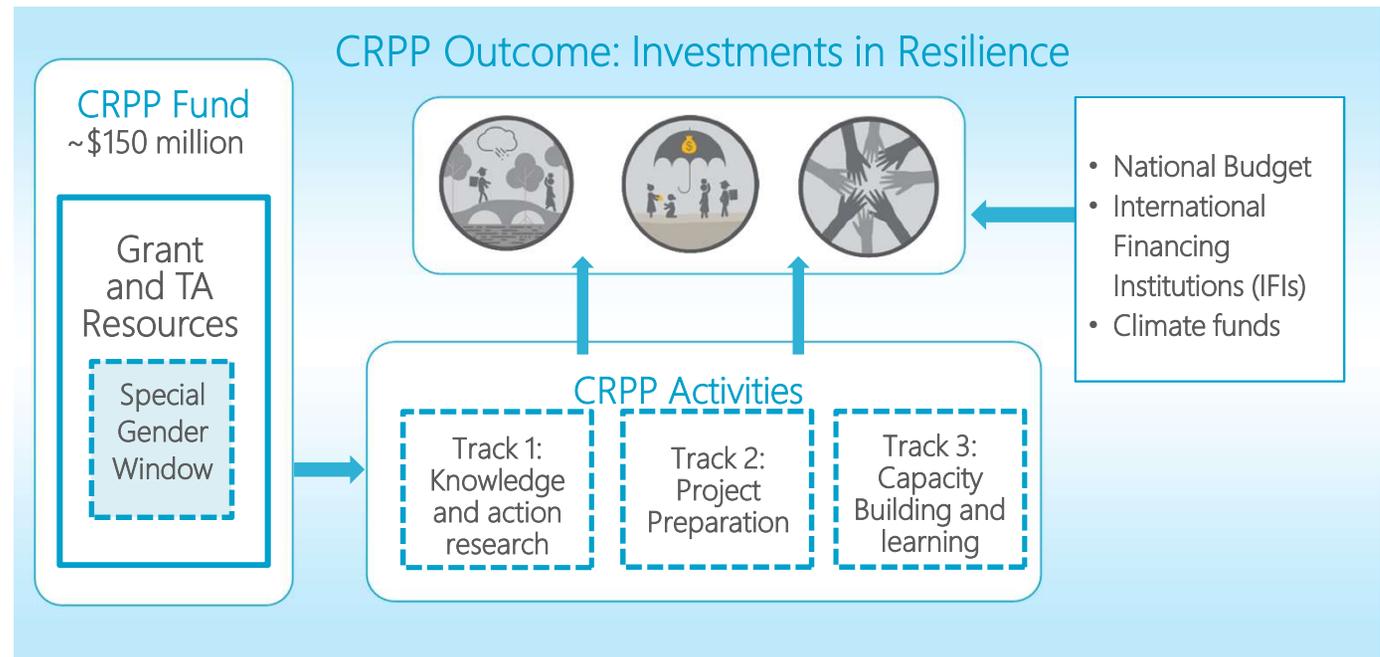


- aims to also contribute to the development of post-2020 carbon markets;
- initial support of US\$ 20-40 million from the KLIK Foundation, Switzerland and US\$5 million from the Swedish Energy Agency.

Community Resilience Partnership Program (2020-2029)



- Partnership-based initiative to support DMCs scale up investments in local resilience that explicitly tackles the nexus between poverty and climate and disaster risk.
- Support to be provided for (i) knowledge and action research, (ii) project preparation, and (iii) capacity building for integrating resilience in poverty reduction programs in different sectors (e.g. agriculture, social protection, community-driven development etc.)
- Directly supports Global Commission on Adaptation's priorities on local action.
- Linkage of OP3 with OP1, OP2, OP4, OP5 and OP6.



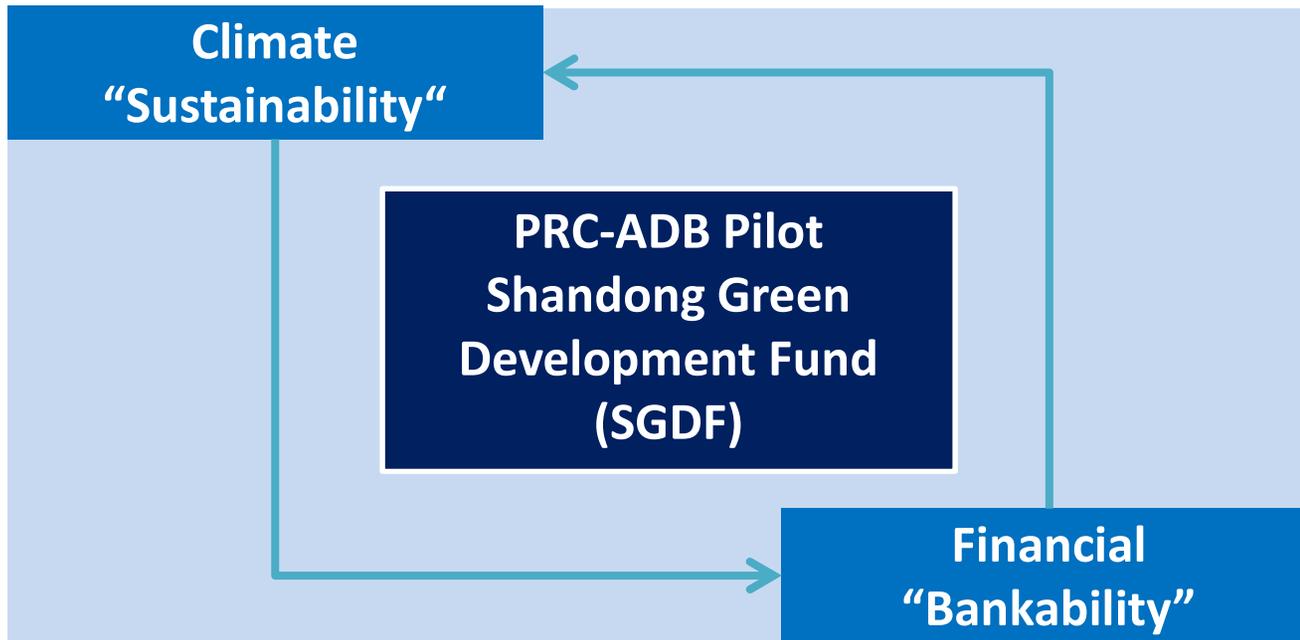
Case Study: PRC Shandong Green Development Fund



The background of the slide is a nighttime photograph of a city skyline. The most prominent feature is a large, modern skyscraper with a unique, angular, and perforated facade, illuminated from within. To its left, another tall building is visible. In the foreground, a multi-lane highway with light trails from traffic runs diagonally across the frame. The sky is a deep twilight blue.

**From Concept to Project:
Shandong Green Development Fund**

Catalyzing Green Finance



CATALYZING GREEN FINANCE
A CONCEPT FOR LEVERAGING BLENDED
FINANCE FOR GREEN DEVELOPMENT

- Enabling financial close of climate-positive projects involving private finance
- Leveraging catalytic funding with more than 5 times multiplier

ASIAN DEVELOPMENT BANK



Shandong Province: Proactive Climate Policies

Shandong Province Snapshot

- Part of Beijing-Tianjin-Hebei area
- Population ≈ 100 million (10 cities population > 5 million)
- 3,000 km coastline
- Largest energy and coal consumer (10%)

CO2 Emissions in 2027, 3 Years Ahead of INDC

- New energy and renewable energy will account for 7% of total energy consumption by 2020 and 18% by 2030
- Transition to low-carbon industries

Carbon Emission Reduction Targets by 2020



Binzhou: down by 23%
Liaocheng: down by 22%

Dongying, Weihai:
down by 20%

**Qingdao, Zibo, Zaozhuang, Yantai,
Weifang etc.:** down by 21%

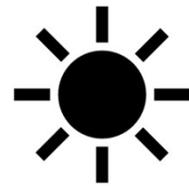
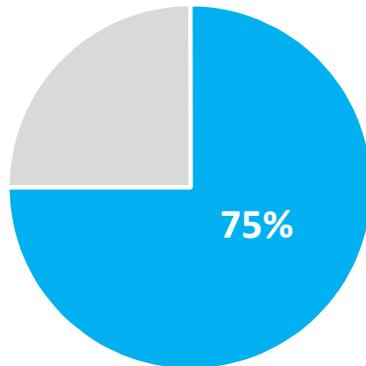
Jinan, Rizhao, Linyi, Dezhou, Heze:
down by 20.5%

2020 compared with 2015

SGDF Portfolio Allocation

Climate Change Mitigation

Address the Main Sources of GHG Emissions in Shandong



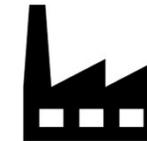
Renewable Energy
51%



Green Buildings
13%



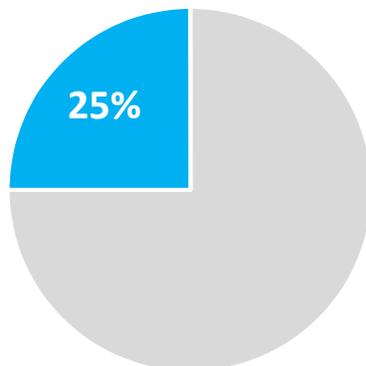
Urban Transport
6%



Energy Efficiency
5%

Climate Change Adaptation

Improve People's Climate Resilience



Coastal Protection
10%



Flood Control
6%



Drought / Agriculture
5%



Heat / Greening
4%

SGDF Investment Strategy: Prioritized Mitigation Sectors



	Industries	GHG Reduction	Financial Return	Scaling-up	Tech Maturity	Cost Effectiveness	Weighted Score*
Renewable Energy	Distributed PV	●	●	●	●	◐	3.9
	Offshore wind power	●	●	●	◐	◐	3.7
	Centralized PV	●	◐	●	●	◐	3.6
	Biomass	◐	◐	◐	●	◐	2.9
	Hydrogen energy	●	◐	◐	◐	◐	2.8
	Solar-thermal power	◐	◐	◐	◐	◐	2.2
Energy Efficiency	Energy storage	●	●	●	●	◐	3.9
	Data center using renewables	◐	◐	●	●	◐	3.3
	Industrial retrofits	◐	◐	◐	●	◐	2.9
	Products that supports smart grid	◐	◐	◐	◐	◐	2.6
	Internet of energy (IoE)	◐	◐	◐	◐	◐	2.3
Green Transportation	Shared bicycle	●	◐	●	●	●	3.8
	EV Charging infrastructure	◐	●	●	●	◐	3.6
	Electrified mobility	●	◐	●	●	◐	3.6
	EV Manufacturing	◐	◐	◐	●	◐	2.8
	Intelligent traffic system	◐	◐	●	◐	◐	2.5
Green and smart city	Electrical vehicle	●	●	●	◐	◐	3.7
	Smart logistics	◐	●	●	●	◐	3.6
	Green building	◐	◐	◐	●	◐	2.9
	Space sharing	◐	◐	◐	●	◐	2.7
	Prefabricated	◐	◐	◐	◐	◐	2.3

● High Mark ○ Low Mark

* The weight for GHG reduction, financial return, scaling up, tech maturity, cost effectiveness are 30%, 25%, 15%, 15%, 15% respectively.



SGDF Green Climate Assessment Guidelines



Potential Industries - Taxonomy



**Principles
Based on
GCF
Investment
Framework**

1 GHG Reduction/ Adaptation Impact
Does the industry address the key sources of GHG emission in Shandong Province / No. of project beneficiaries

2 "Paradigm Shift"
Scaling up & replication potential and innovation

3 Sustainable Development
Economic, social and environmental cobenefits

4 5 Needs of Recipient & Ownership
Demonstrated need and capacity to implement

6 Efficiency & Effectiveness
The cost to deliver climate benefits, leverage etc.

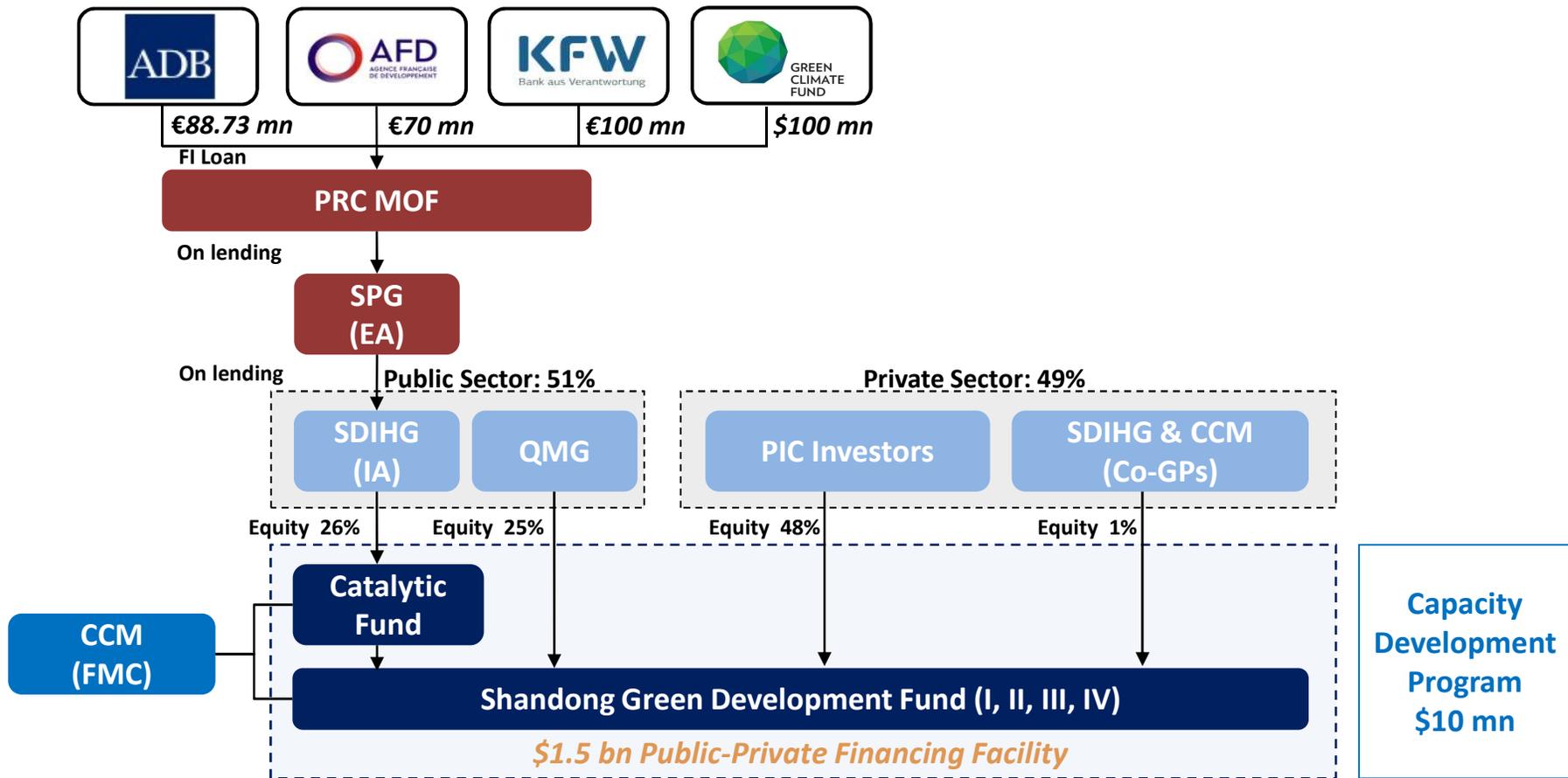


Project Performance Assessment – Transformational, Advanced Benefits, Good Practices

Green Rating / Green Procurement



Innovative Financing Mechanism



CCM = CICC Capital Management Co., Ltd.; EA = Executing Agency; FI = Financial Intermediation; FMC = Fund Management Company; GP = General Partner; IA = Implementing Agency; MoF = Ministry of Finance; PIC = Private, Institutional and Commercial; PRC = People's Republic of China; QMG = Qingdao Municipal Government; SDIHG = Shangdong Development & Investment Holding Group; SPG = Shandong Provincial Government.

Linking Climate Performance to Financing Incentives



A Mix of Investment Instruments and Exit Channel

	Instrument	% in funding	Tenor	Return Expectation	Exit
Mitigation	Equity	< 30%	N.A	> 12%	IPO/secondary sale/M&A
	Debt with equity component	30-50%	3-7 years	In line or at discount to benchmark lending rates, with equity upside	Redemption /conversion into equity
	Debt	Similar to below			
Adaptation	Mainly Debt	< 50%	3-7 years	In line or at discount to benchmark lending rates	Payback by project sponsor

Linking Climate Performance to Investment Terms

Debt	Maximum Funding*	Maximum Tenor	Interest Rate**	Equity	Maximum Funding*	Investment Horizon
Transformational	67%	8 years	Discounted	Transformational	50%	<8 years
Advanced Benefits	50%	6 years	In line	Advanced Benefits	30%	< 6 years
Good Practices	25%	5 years	Premium	Good Practices	-	-

Note: Based on climate indicators and to be cross referenced with financial due diligence

* Percentage of a project's total debt/equity financing

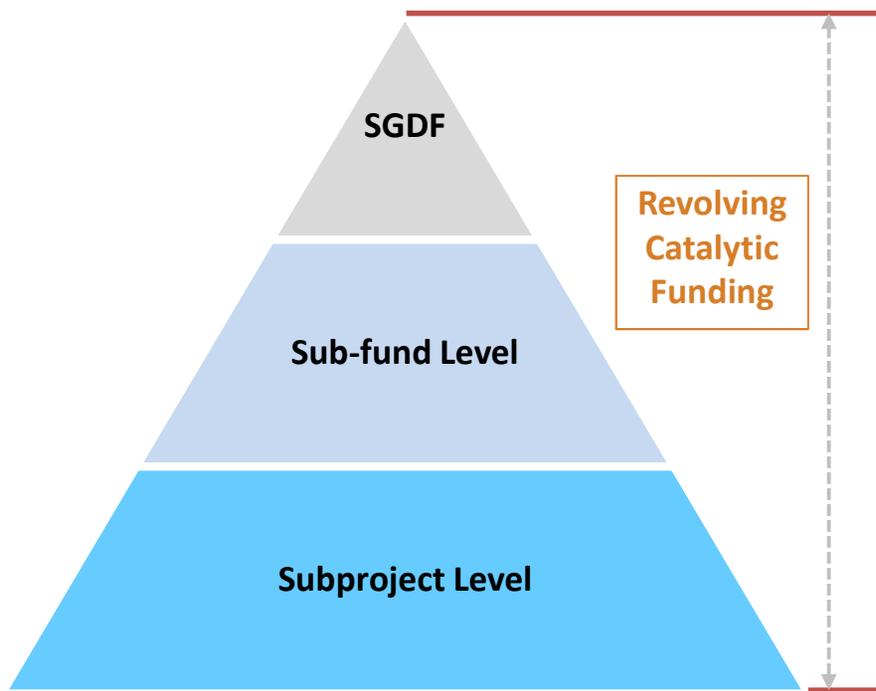
** Based on People's Bank of China benchmark lending rates



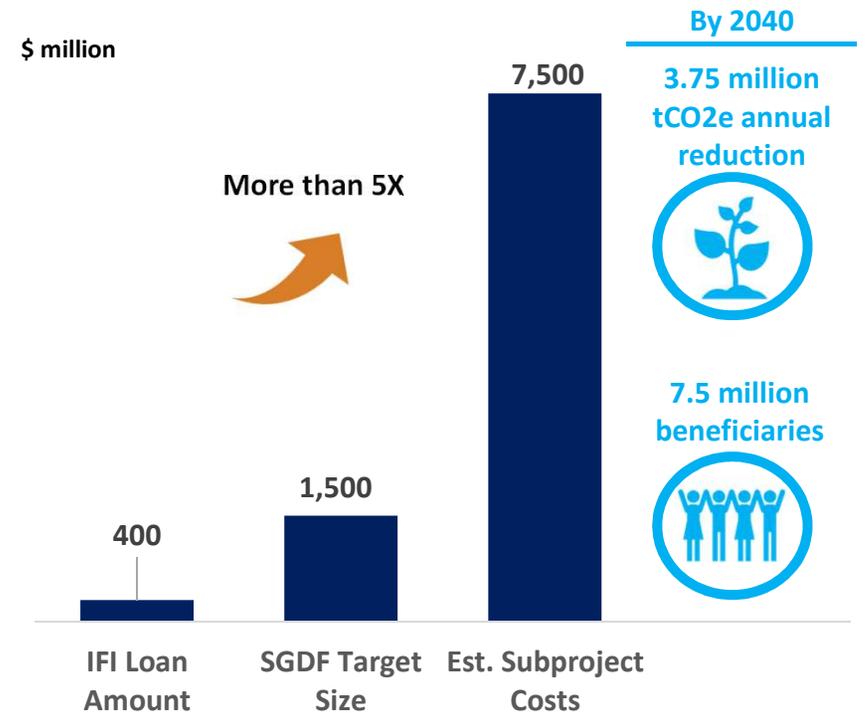
Significant Leverage to Crowd-in Private Finance



Multi-Tier Structure for Leveraging

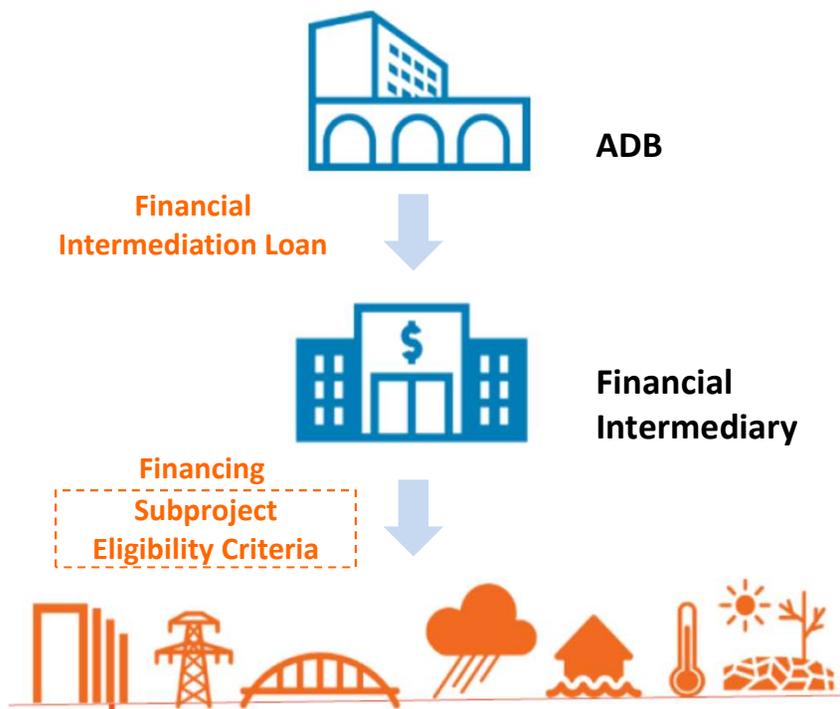


Leveraging Effect



Suitability of Financial Intermediation Loan Modality

Supporting A Portfolio of Climate Subprojects



- Capacity building for a new provincial-level financing vehicle focused on climate finance
- Flexibility of subproject pipeline
- Safeguards: Environmental and Social Management System
- Disbursement: advanced fund procedure
- Procurement: policy and regulations under FI loan
- Gender: Effective Gender Mainstreaming
- ADB review: the first three subprojects; any subproject above €70 million; fund documents; review missions

Digital, Cloud-Based Platforms



Fast-track Project Preparation



- Special focus on sustainability of project design across all aspects of the project cycle
- Templates designed to provide structure to the quality and completeness of information



Project Preparation Management



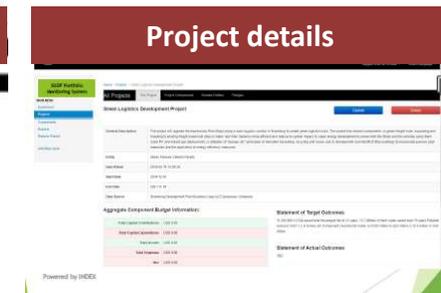
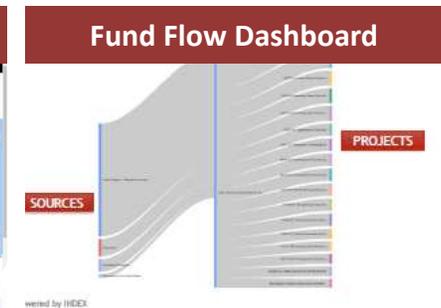
Infrastructure Intelligence Solution



Pipeline of Well-prepared Projects

Monitoring, Evaluation, Reporting & Verification

- For portfolio level assessment and subproject level assessment
- Track and report on fund allocation and climate indicators



ADB Value Addition



- Shift from “Business as Usual” to “Good Practices”; “Advanced Benefits” and “Transformational” climate-positive subprojects with **international green climate standards**
- **Selection subprojects** based on climate mitigation/adaptation benefits (to be maximized) and bankability (to be improved)
- Leveraging catalytic funding with **more than 5 times multiplier**
- The first **Effective Gender Mainstreaming** fund
- **Knowledge and dissemination:** forthcoming *Lessons Learned from the Shandong Green Development Fund*
- **Scaling up:** ASEAN Catalytic Green Finance Facility (2020); *SDG INDONESIA ONE* (2021); *Mongolia Establishing Green Finance*; PRC Urban Climate Investment Facility



Thank you

For further information:

<https://www.adb.org/themes/climate-change-disaster-risk-management/main>

<https://www.adb.org/climate-change-financing>

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