

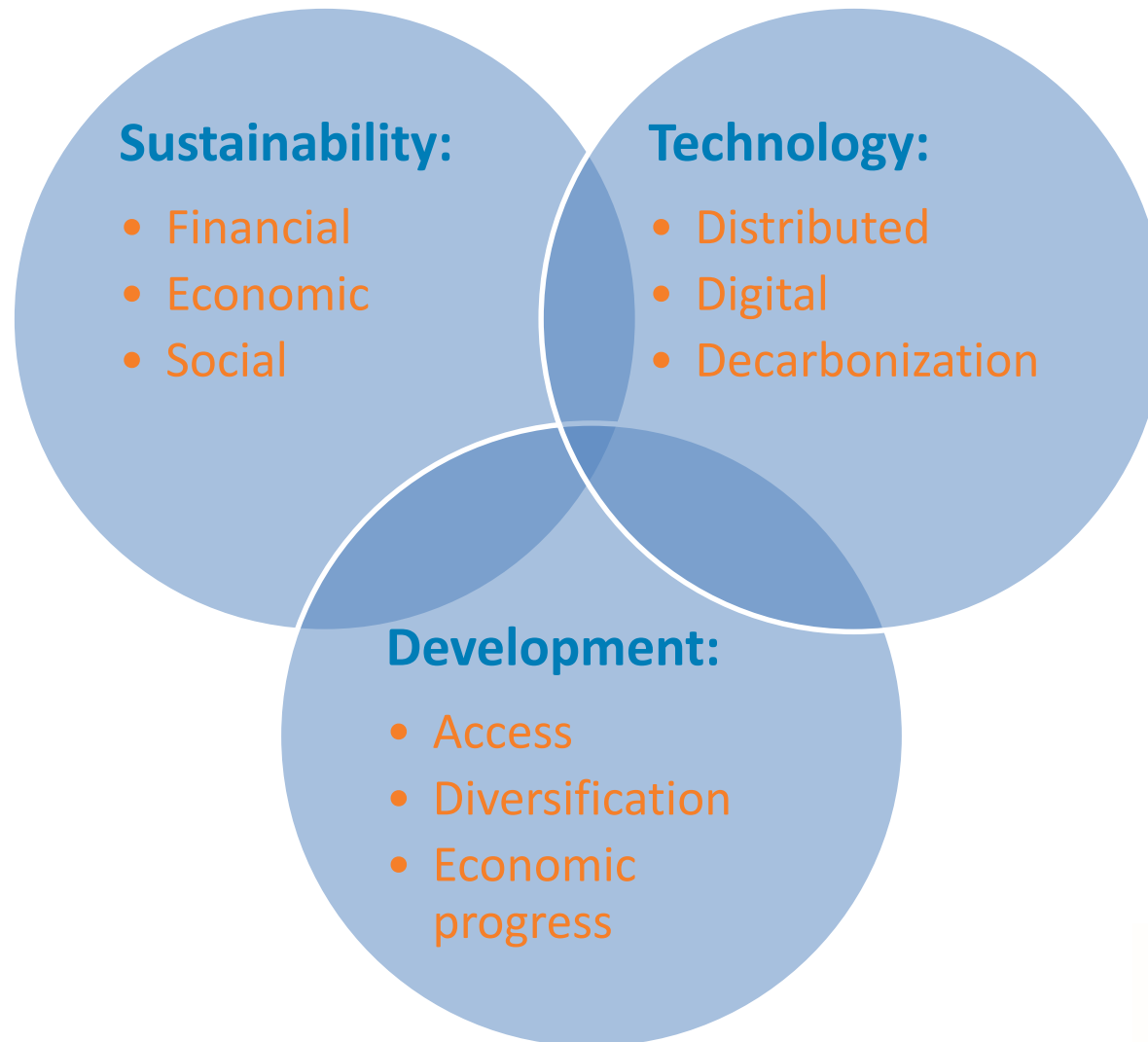
Energy Sector Priorities

Asian Development Bank

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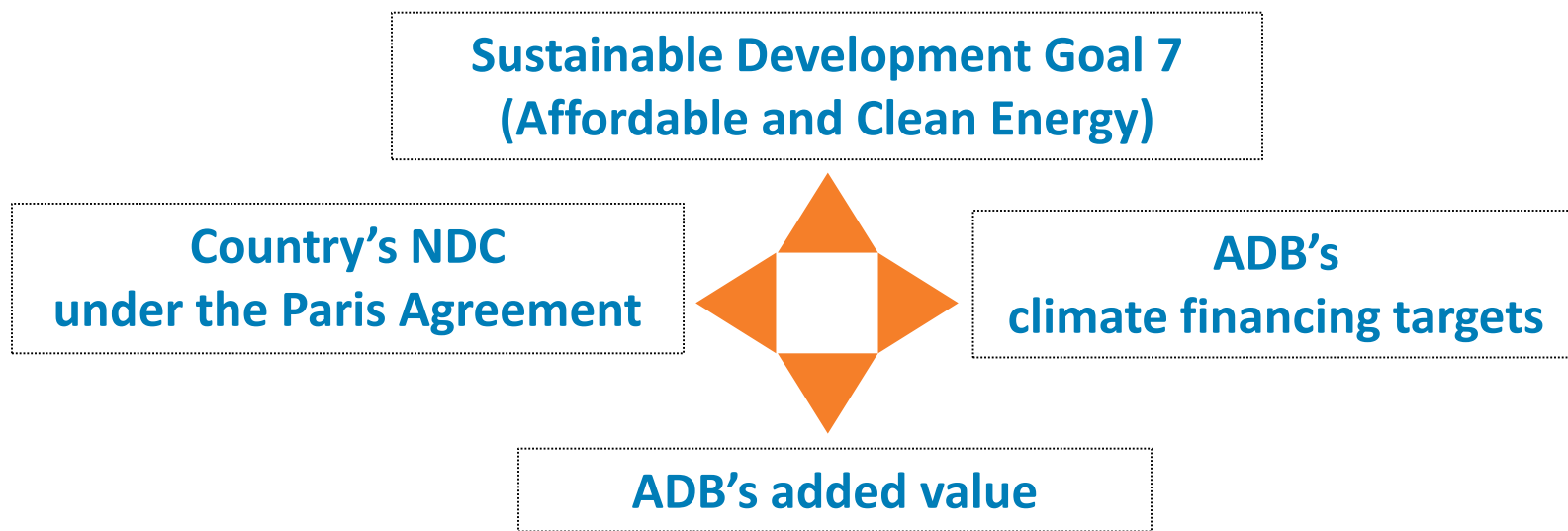
Mega-trends affecting the Energy Sector



ADB ENERGY POLICY **Overview**

- **Prioritizes sustainable energy and low-carbon development:**
 - Promoting energy efficiency and renewable energy
 - Maximizing access to energy
 - Promoting energy sector reform, capacity building and good governance
- **Comprehensive and accommodates global developments in climate and energy sectors, notably:**
 - Paris Agreement on Climate Change
 - UN Sustainable Development Goals

FOUR STRATEGIC DIMENSIONS

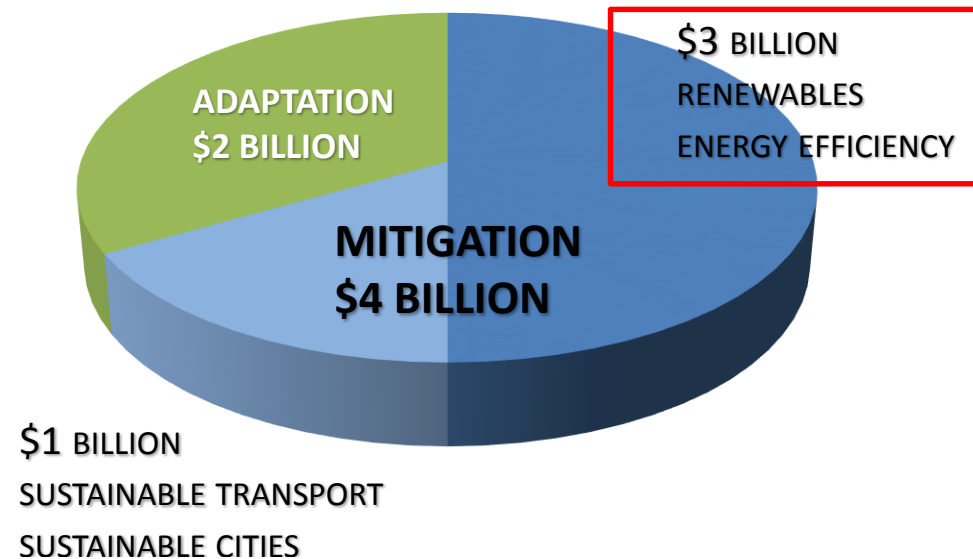


- (i) Sustainable energy mix considering cost trend of different sources of energy
- (ii) application of new and advance technologies in project design;
- (iii) developing innovative business models and financing instruments that create markets for clean energy.

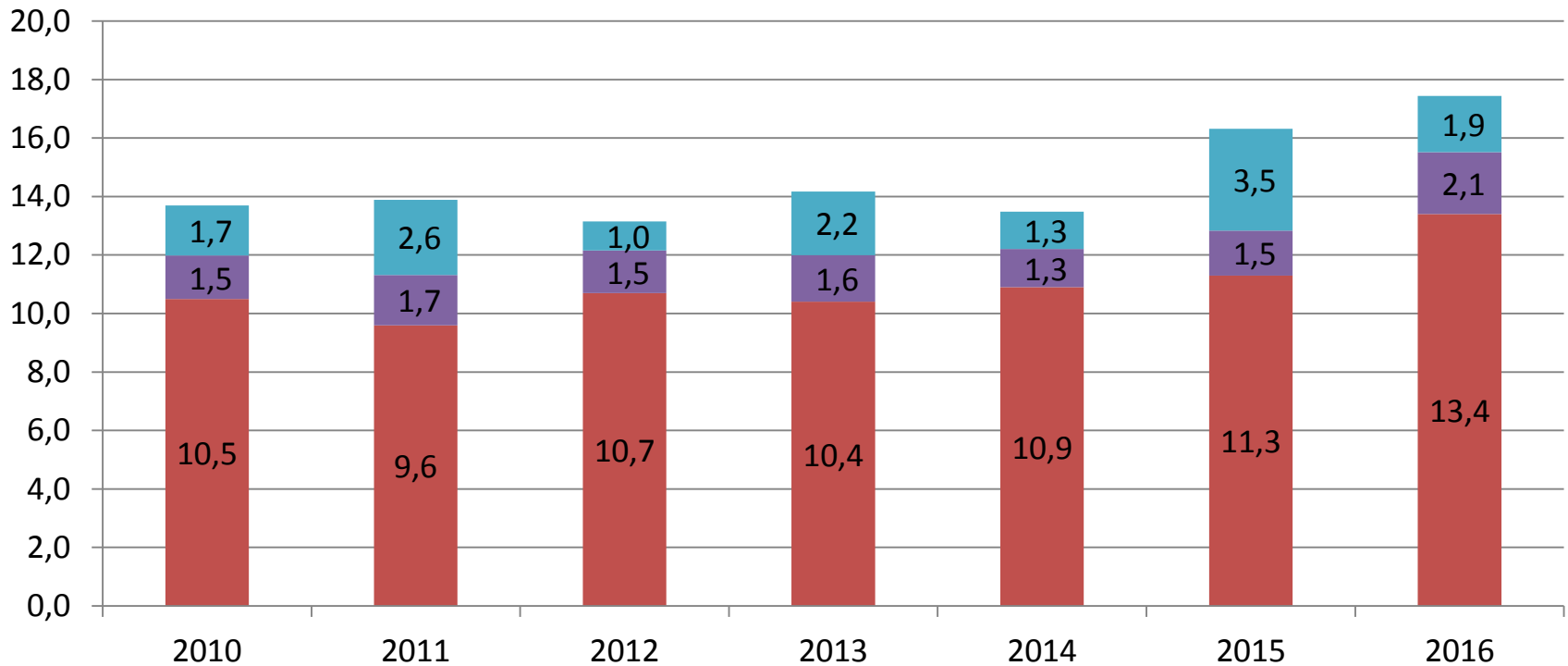
Clean Energy and Climate Finance

- Set new climate change financing targets in July 2015, part of a long-term strategic climate response to 2030
- Asia estimated to need \$40 billion annually to adapt to climate change
- Pledged to increase climate financing to \$6 billion annually by 2020

Phase 1: 2016 to 2020
(2x current financing levels)

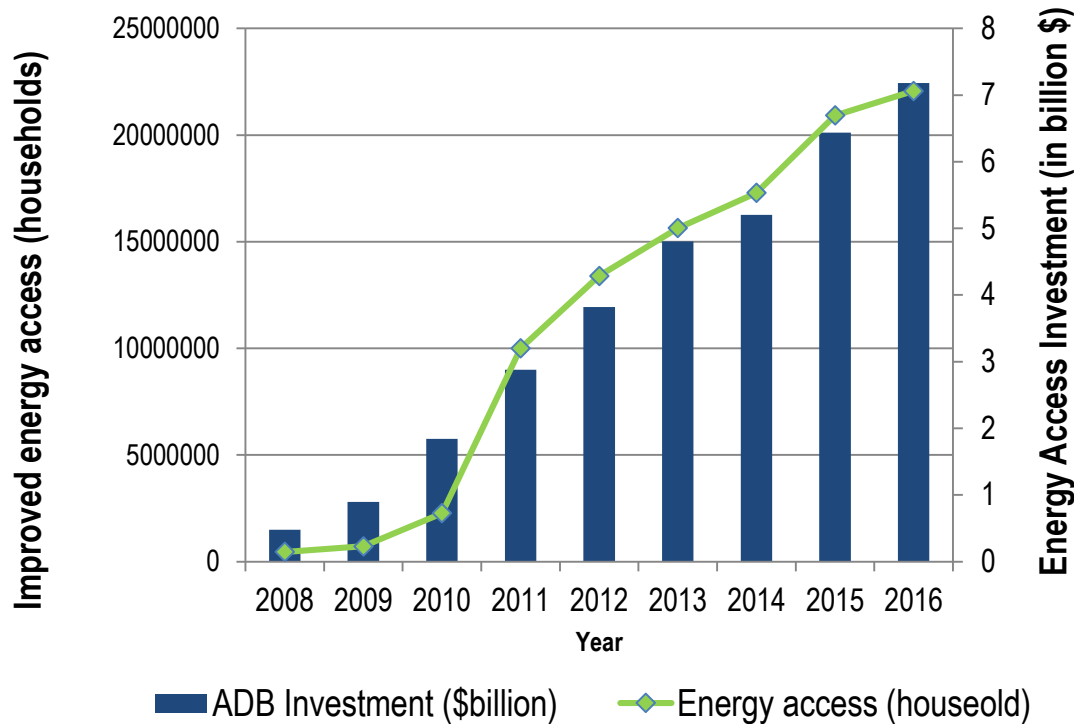


ENERGY SECTOR PORTFOLIO (2010-2016)



- Other Energy Sector Projects (OCR & ADF, in \$ billion)
- Clean Energy Investments in the Energy Sector (OCR & ADF, in \$ billion)
- Non Energy Projects (OCR & ADF, in \$ billion)

ENERGY FOR ALL PROGRAM



- \$ 742 million invested in 2016
- \$ 7.2 billion total ADB investment in energy access** (2008-2016)
- 22 million households will have improved energy access due to ADB investments since 2008

** Access to energy is defined as having access to modern fuels and new and improved electricity connections.

REFORM AND CAPACITY DEVELOPMENT THROUGH TECHNICAL ASSISTANCE

- \$42 M in Energy Sector Technical Assistance (TA) in 2016 provides support to DMCs :
 - capacity development,
 - research and
 - policy advisory.
- Current focus: policy reform, development and demonstration of new technologies, scaling up of renewable energy and project preparation.
- Cluster TA 0017: Promoting Sustainable Energy for All in Asia and the Pacific
 - 4 TA's focusing on Mini Grids, Urban Access to Energy, Investment Facilitation and Support for UN SE4All

FUNDS, FACILITIES AND INITIATIVES

Climate and Technology

Clean Energy Financing Partnership Facility

- \$187 M has been allocated from total fund size of \$272 M since 2008
- Provides support to DMCs to improve energy access and security and transition to low carbon economies through:
 - GHG reducing technology use
 - Policy, regulatory, and institutional reforms
 - Broad range of technologies including CCUS
- Allocated a total of \$ 49.2 million in 2016 to leverage clean energy projects in energy, transport and other sectors.
- Donors include: Australia, Canada, Japan, Norway, Spain, Sweden, and the United Kingdom

FUNDS, FACILITIES AND INITIATIVES

Climate and Technology

Canadian Climate Fund for the Private Sector in Asia II

- USD 150 million, stand alone, single-donor trust fund
- To catalyze investment in climate change mitigation and adaptation in low and lower-middle-income countries in ADB region
- Promote gender equality and empowerment of women and girls
- Loans (senior and subordinated), risk participation, mezzanine debt - no equity / convertibles
- Concessional finance (minimum concessionality) - softer terms, lower pricing, longer tenor, lower rank, reduced security

Asia Clean Energy Forum 2018 – June 4-8

- One of the premier events in Asia covering issues related to clean energy technology, policy, programs, and financing.
- Since 2006, provides platform for sharing knowledge and experiences on key issues and the latest developments in clean energy in Asia.
- Place to do business with ADB and actors on the region



FUNDS, FACILITIES AND INITIATIVES

Climate and Technology

ADB Climate Change Fund

- Established in May 2008 to address the causes and consequences of climate change through TA and grant components of investment
- \$60 M (approx. \$15 M remaining)

High-Level Technology Fund

- Established in 2017 to provide grant financing to promote the integration of high level technology and innovative solutions into investments.
- \$40 M per year from Japan across all sectors

High-Impact Innovation Initiative (H3I)

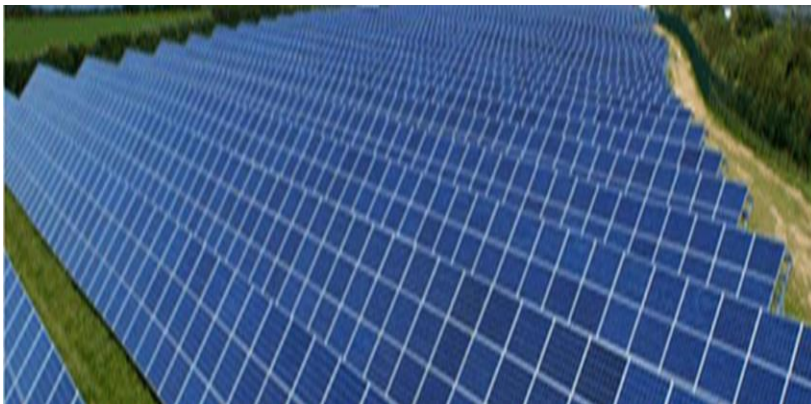
- Small initiative from the Energy Sector Group to accelerate technology use to address key development issues.

2017 Work Plan

Flagship projects in the Energy Sector – Advanced Technology Application

Central and West Asia

- UZB Solar II Project
 - \$100 million investment
 - 100MW plant + utility-scale storage (demo) + efficient and solarized health clinics and schools



- AFG Solar Park Project
 - (\$110 mil plus joint and parallel co-financing)
 - Installation of up to 5 x 20 MW modular plants with AITF and IDB co-financing and potential private sector participation for at least 20 MW
 - Feasibility studies for additional sites including for industrial solar park with storage, off-grid, and rooftop

2017 Work Plan

Flagship projects in the Energy Sector – Multi-sectoral impacts

East Asia (BTH Air Quality Improvement - \$500 million)

- Promote high technology in major polluting sources in BTH
 - Part of the multi-sectoral, multi-year support program
 - Targets large industrial, urban and rural emitters to demonstrate advanced technologies – e.g. coke-oven flue gas to LNG, renewable energy-based heating, distributed renewable + smart micro grid etc.
 - Partners with city governments, technology institutes, financial institutions to de-risks high technology investments and leverage co-financing (1:>2)
 - Large co-benefits of CO₂ reduction



2017 Work Plan

Flagship projects in the Energy Sector – Innovative Projects

Pacific

- Pacific Renewable Energy Investment Facility (\$750 million)
 - Innovative facility to finance a series of low-value renewable energy projects in the eleven smallest Pacific Island countries (total population less than 1.5 million) to fast track conversion of Pacific region to renewable energy.
 - Facility will streamline ADB approval procedures and enhance ADB's ability to process small value projects faster with lower transaction costs.
 - Overall cost is estimated at \$750 million equivalent to be financed by ADB (\$200 million), co-financiers (\$500 million), and governments (\$50 million).
 - GCF has approved \$12 million grant for the initial subproject, and will consider an estimated \$300 million in co-financing for subsequent projects.
 - Facility is supported by initial \$10 million TA for project preparation and capacity building.

2017 Work Plan

Flagship projects in the Energy Sector – Climate Financing

South Asia

- IND: Solar Transmission Sector Project (\$175 million ADB loan and \$50 million Clean Technology Fund loan)
 - Improved capacity of interstate transmission network for increasing electricity generated from new mega solar parks (4.2 gigawatt) to the national grid
 - Improved Power Grid's autonomous management of safeguard and procurement systems, using the country systems at the agency level
- SRI: Wind Power Generation Project (\$200 million loan)
 - Development of the first wind park (100 megawatt) in Sri Lanka
 - Improved capacity of Ceylon Electricity Board (CEB) to forecast, control and manage intermittent renewable energy in the power system
 - Building CEB capacity to act as a wind park developer to attract private sector in wind power generation through competitive bidding in the future

2017 Work Plan

Flagship projects in the Energy Sector – New Business and Advanced Technology Application

Southeast Asia

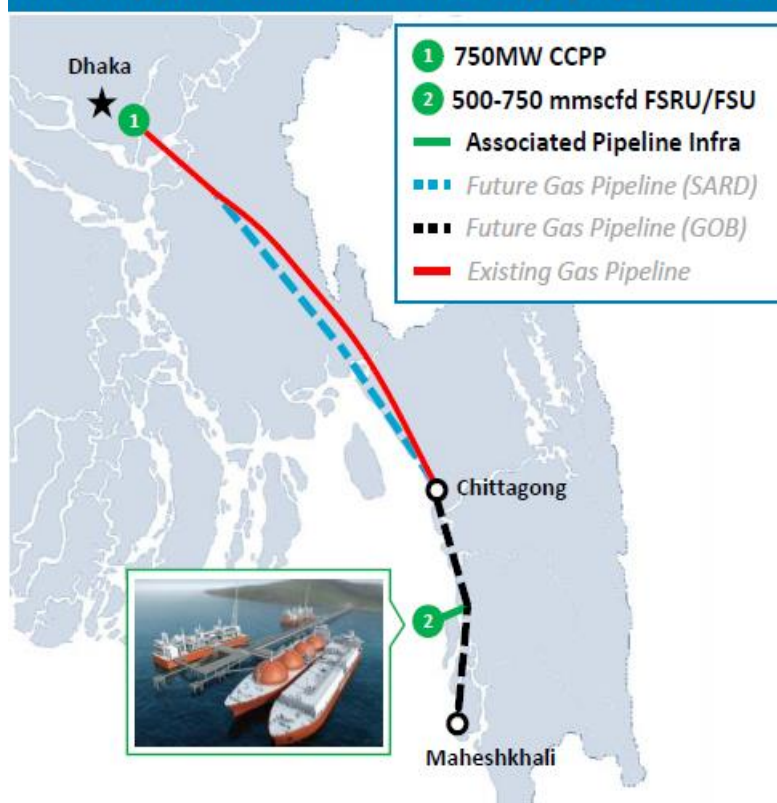
- INO: Sustainable Energy Access in Eastern Indonesia – Power Generation Program (\$500 million)
 - Fuel switching from diesel to natural gas through the development of small scale LNG distribution networks (with the ADB funded portion primarily funding generation facilities).
 - At least two pilot-scale gas-solar PV hybrid units with battery storage and energy management system installation
- INO: Pilot Carbon Capture and Storage Activity in the Natural Gas Processing Sector (\$16 million grant, CCS Pilot)
 - First CCS project in Southeast Asia
 - Construction of capture and injection facilities, transport links, and 2 years of operation for 20,000 tons CO₂ injected into subsurface

2017 Work Plan

Flagship projects in the Energy Sector – Energy access

Non-sovereign operations

RBPL will provide critical imported LNG supply & power to BAN



- BAN: Reliance LNG and Power Project:
 - Providing critical gas infrastructure to Bangladesh
 - Other Key Features of the Project:
 - Top-tier sponsor: Reliance Power Limited
 - Financing of the entire LNG-to-power value chain
 - ADB considering up to [\$450M] in loans, guarantees, & co-financing
 - Co-financing includes private-sector commercial banks and DFIs

CCPP = combined cycle power plant; FSU = floating storage unit; FSRU = floating storage regasification unit; LNG = liquefied natural gas; M = millions; mmscfd = million standard cubic feet of gas per day

Thank you
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