

Financing and Payment Security Mechanisms to Support Cross Border Power Trade

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ADB Overview

The Asian Development Bank (ADB) is a multilateral development finance institution owned by 67 member countries, including 48 from the Asia and Pacific region.

ADB's headquarters is in Manila, Philippines.

Vision: An Asia and Pacific region free of poverty.

Mission: To help its developing member countries reduce poverty and improve the quality of life of their people.

Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

The Long-Term Strategic Framework of ADB (2008 – 2020)

Five Core Operational Areas (identified as core strengths of ADB. Will cover 80% of lending)

1. **Infrastructure** (including transport and communications, energy, water supply and sanitation and urban development)
2. **Environment**
3. **Regional Cooperation and Integration**
4. **Finance Sector Development**
5. **Education**

Other Areas of Operations

1. **Health**
2. **Agriculture**
3. **Disaster and Emergency Assistance**



To provide reliable, adequate, and affordable energy for inclusive growth in a socially, economically, and environmentally sustainable way



Three Pillars :

1. Promoting energy efficiency and renewable energy
2. Maximizing access to energy for all
3. Promoting energy sector reform, capacity-building & governance

Modes of Assistance

Public sector assistance

- Loans
- Grants
- Technical Assistance

Private sector finance

- Loans
- B-Loans
- Equity Investments
- Guarantees

Catalytic tools

- Clean Energy Financing Partnership Facility (\$102 m)
- Asia Pacific Carbon Fund (\$151 m), Future Carbon Fund (\$115 m)
- Technical Support Facility
- Other initiatives: Clean Energy Program, Energy for All, Asia Solar Energy Initiative, Quantum Leap in Wind

Policy and knowledge management

- Policy dialogues with governments
- Research, training, conferences, publications, capacity building financed through technical assistance

Public Sector Assistance:

- Central and West Asia Department
- East Asia Department
- Pacific Department
- South Asia Department
- Southeast Asia Department

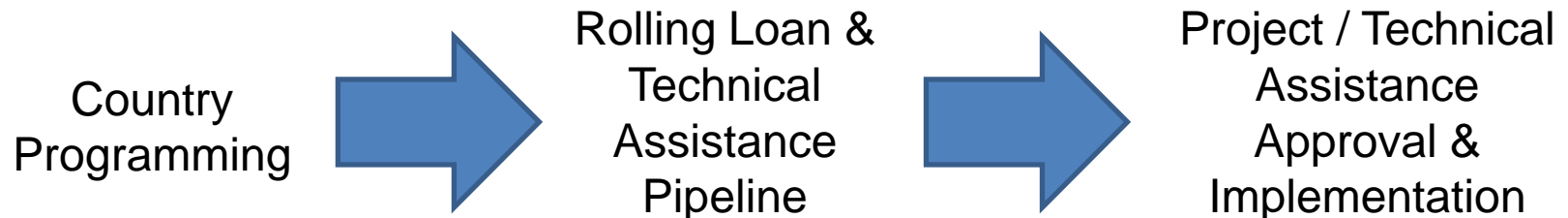
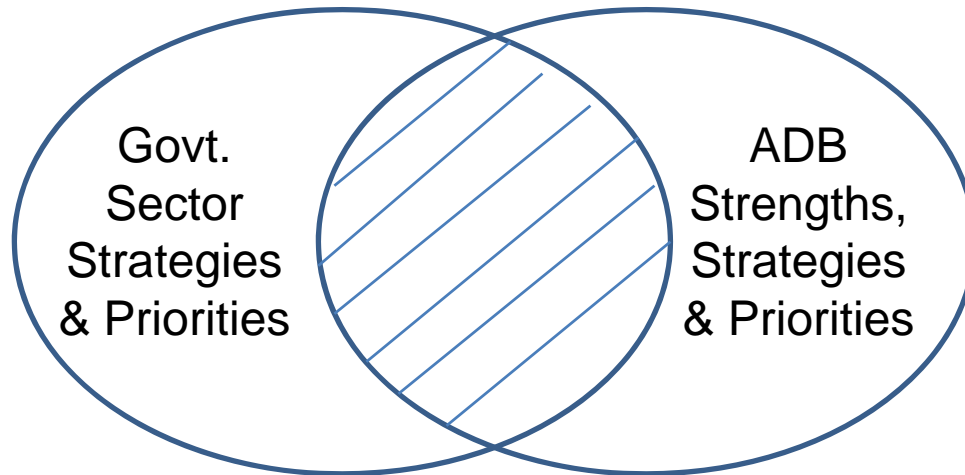
Private Sector Assistance:

- Private Sector Operations Department

Process for Public Sector Assistance:

ADB strategy closely coordinated with host country government

Each country strategy unique to that particular country's needs and priorities



Process for Private Sector Assistance:

Web links: <http://beta.adb.org/site/private-sector-financing/applying-assistance>
<http://beta.adb.org/site/private-sector-financing/contacts>

Required Information:

- Executing Summary
- Project Description
- Feasibility Study
 - Technical, Financial, Economic, etc.
- Background on Sponsor(s)
- Project Ownership Structure
- Project Implementation Arrangements
- Project Operations
- The Market
- Environmental and Social Aspects
- Cost Estimates & Financing Plan
- Financial Model
- Risk Analysis
- Permits and Licenses

ADB Support for Regional Power Sector Integration

- ❑ SAARC Regional Energy Trade Study
- ❑ South Asia Regional Power Exchange Study
- ❑ Capacity Development Assistance to SAARC Energy Centre, Islamabad

Dagachhu Hydropower Project, Bhutan

Cross-border power export from Bhutan to India

Approved in October 2008

- 126 MW run-of-river type
- Joint Venture: Druk Green Power Co, Bhutan with Tata Power Co, India

Loans:

ADB \$80 million

- a) Loan to Govt. for equity
- b) Loan to Project Company

National Pension & Provident Fund, Bhutan

Commercial bank through export credit, Austria



Bangladesh-India Electrical Grid Interconnection Project

- **\$100 million ADB Loan approved in August 2010**
- **Funds the Bangladesh portion of the interconnection that will enable a power flow of 500 MW into Bangladesh from the Indian grid.**

Total Interconnection:

- 400 kV transmission line between Baharampur, India and Bheramara, Bangladesh (112 km)
- 400 kV switching station at Baharampur
- 500 megawatt (MW) back-to-back high-voltage direct current (HVDC) substation (400/230 kV) at Bheramara
- associated infrastructure on both sides
- Upgradable to 1,000 MW capacity in the future as required.

Compelling Case for Regional Cooperation

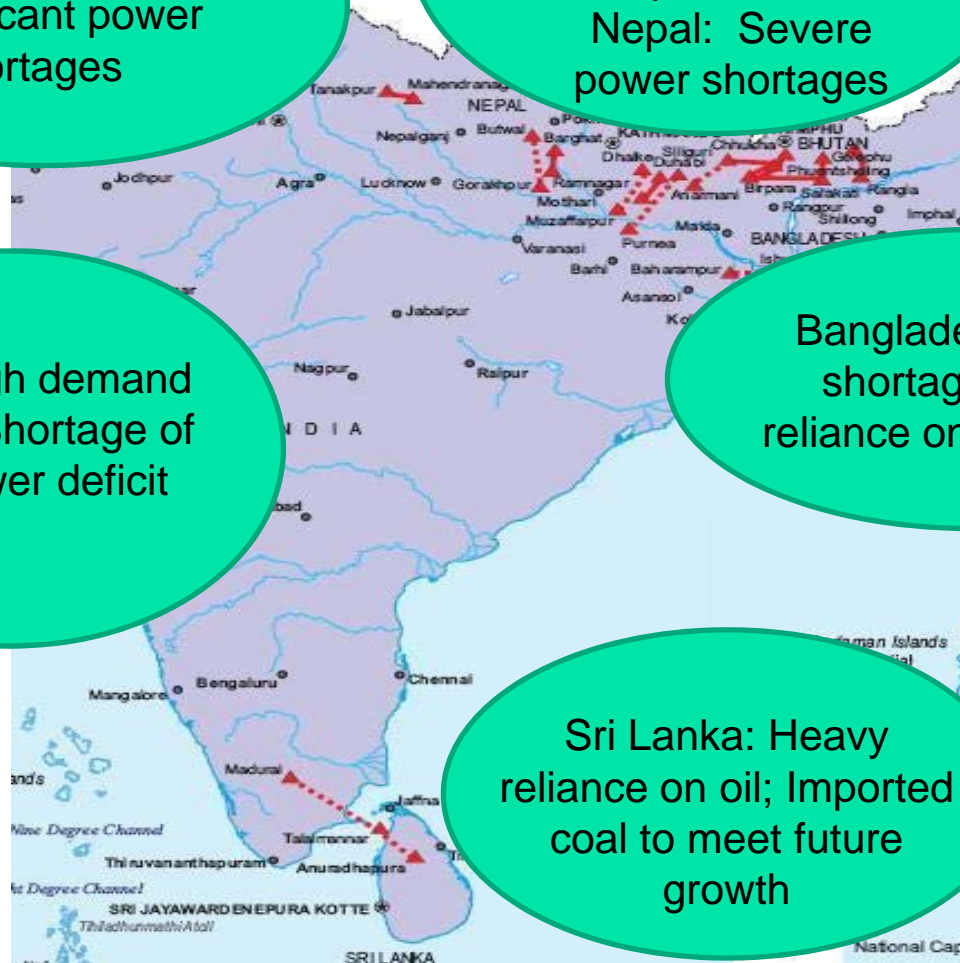
Pakistan/Afghanistan
: Significant power
shortages

Nepal & Bhutan:
Over 60 GW of
economic hydro
potential
Nepal: Severe
power shortages

India: High demand
growth; Shortage of
coal; Power deficit

Bangladesh: power
shortage; Heavy
reliance on natural gas

Sri Lanka: Heavy
reliance on oil; Imported
coal to meet future
growth



Financing and Payment Security Mechanisms to Support Cross Border Power Trade

Power Trading – Buyers and sellers of electricity enter into direct transactions with each other or indirectly through an exchange.

Short and long term electricity contracts between generators and electricity purchasers form the backbone of power markets.

Given the capital-intensive nature of electricity generation requiring longer term financing, longer term contracts are the norm.

Benefits of Contracts:

1. Provides revenue certainty to generators
2. Reduces price volatility for power purchasers (e.g. suppliers)

Power Purchase Agreements

- Standard contractual arrangement often required to secure long-term financing
- Physical and financial transaction

Contract for Differences

- Requires active power pool/exchange
- Financial transaction

Financier's / Investor's Perspective

- Are there any revenue / expense mismatches?
 - Fuel / Power Price
 - Currency
 - Local currency revenue / foreign currency debt service
 - Fuel sourced internationally
 - Power sold internationally

Mismatch Solutions

- Tariff adjustment mechanisms
 - Fuel cost Pass-through
 - Inflation Indexed
 - Foreign Exchange rate indexed
- Hedging
- Reserve Accounts
- Cash Sweeps
- Other contractual terms (e.g. change-in-law provisions)

Seller (Power Generator) Security Mechanisms

Tools vary depending on Non-recourse vs. Balance-sheet ('corporate') financing

- Owner/Equity Support
- Insurance
- Contractual Liquidated Damages
 - Contractors (delays & performance)
 - Equipment Suppliers (performance)
 - Fuel Suppliers

- Reserve Accounts
 - O&M Reserve
 - Fuel Reserve
 - Debt Service Reserve
- “Waterfall” or “Cash Cascade”
- LC’s in lieu of reserve accounts

Power Purchaser Payment Security Mechanisms

- Owner / Parent Support
- Government Support
- Letters of Credit
- Escrow Arrangements

Escrow Arrangements

- Mechanism for credit enhancement of a power purchaser (e.g. Discom) with constrained finances:
 - Define a set of the Discom's industrial customers and divert their payments to Discom into an escrow account for the benefit of the seller (generator)

Example: Payment Security Scheme under JNNISM

Payment risk mitigation strategy:

- I. Utilities open 6-month LCs
- II. Backed by an Escrow Account
- III. NVVN Sale of Power into the Market
- IV. Payment Security Scheme (Govt. support)
 - Govt. deposited Rs. 486 Crore into the Solar Payment Security Account (SPSA) to keep NVVN whole if I. – III. didn't work

Payment Security Mechanisms

http://mnre.gov.in/file-manager/UserFiles/payment_security_mechansim_grid_connected_jnnsn_2011_2012.pdf



Transfer Risk

- addressed by sovereign ceiling ratings
- Govt. assurances
- Insurance

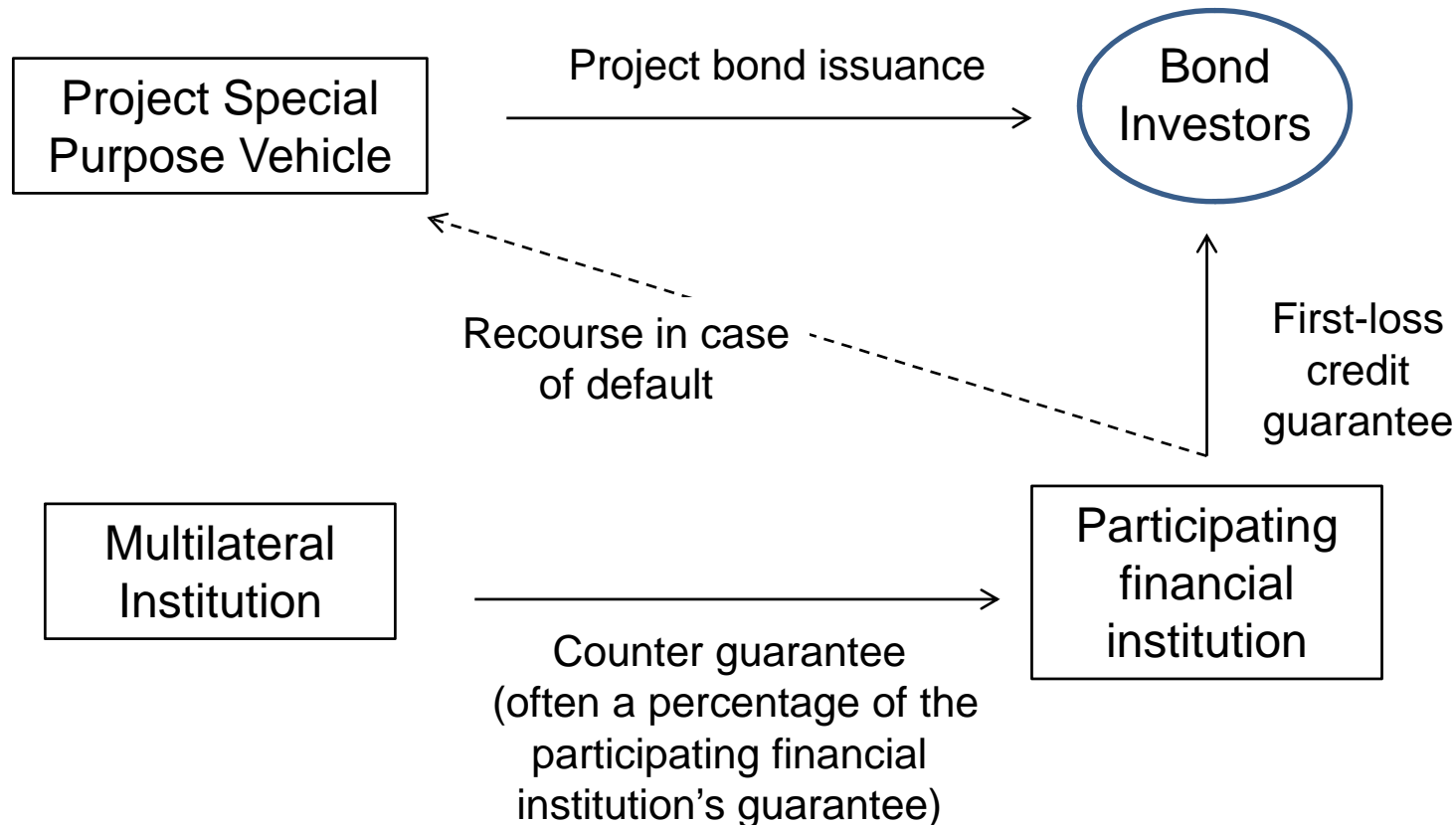
Exchange Rate Risk

- Sovereign governments & multilateral guarantees
 - Limited
- Derivative Products
 - Options, futures, caps & swaps
 - Requires credit worthy counterparties
 - Limited in contract length
 - Expensive
- Shifting Risk to party better able to manage it
 - E.g. government or offtake utility
 - Exchange rate indexing provision in the PPA

- Pledging of Offshore Receivables in the appropriate currency
 - Limited applicability
- Increase the size of reserve accounts
 - Example: Thai IPP Programme
 - Creditors required project owners to set aside from available cashflow, 5% of outstanding foreign loan each year until cash reserve equals 25% of outstanding foreign loan value
- Distribution test structures for forward looking exchange rate protection

Credit Enhancement

- Partial Risk Guarantees
 - Credit Risk, Other risks



THANK YOU

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