JICA’s Cooperation for Energy Sector and Regional Connectivity in South Asia

South Asia Department
Japan International Cooperation Agency (JICA)
Innovative Cooperation

LED light in rural village (Bhutan)

PV system (Pakistan)

Copy Right 2012 Japan International Cooperation System (JICS)
1. Overview
## I. Overview of JICA – Basic Information (as of March, 2014)

<table>
<thead>
<tr>
<th>Name:</th>
<th>Japan International Cooperation Agency (JICA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of establishment:</td>
<td><strong>October 1, 2008</strong></td>
</tr>
<tr>
<td>Legal foundations for operations:</td>
<td>Act of the Incorporated Administrative Agency - Japan International Cooperation Agency (subsequently, JICA Act)</td>
</tr>
<tr>
<td>Objectives:</td>
<td>“JICA aims to contribute to the promotion of international cooperation as well as the sound development of Japanese and global economy by supporting the socioeconomic development, recovery or economic stability of developing regions.” (Article 3, JICA Act)</td>
</tr>
<tr>
<td>President</td>
<td>Akihiko Tanaka</td>
</tr>
<tr>
<td>Full-time employees</td>
<td><strong>1,883</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domestico Offices (14)</th>
<th>Overseas Offices (92)</th>
</tr>
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</table>


I. Overview of JICA – Our History

Japan International Cooperation Agency (JICA) – Established: August 1974 (1)

Japan Bank for International Cooperation (JBIC) – Established: October, 1999

Overseas Economic Cooperation Fund (OECF) – Established: March 1961

Export-Import Bank of Japan

International Financial Operations

MOFA

Japan Finance Corporation (JFC)

Japan International Cooperation Agency (JICA)

Technical Cooperation

Grant Aid *

* This excludes Grant Aid which the Ministry of Foreign Affairs (MOFA) will continue to directly implement for the necessity of diplomatic policy

Cooperation through Finance and Investment (ODA Loans, Private-sector Investment Finance)

(1) JICA reorganized into an Incorporated Administrative Agency in October 2003.
I. Overview of JICA – Vision, Missions and Strategies

JICA will provide support for “Inclusive and Dynamic Development”

<table>
<thead>
<tr>
<th>Mission 1</th>
<th>Mission 2</th>
<th>Mission 3</th>
<th>Mission 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addressing the global agenda</td>
<td>Reducing poverty through equitable growth</td>
<td>Improving governance</td>
<td>Achieving human security</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategy 1</th>
<th>Strategy 2</th>
<th>Strategy 3</th>
<th>Strategy 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated assistance</td>
<td>Seamless assistance</td>
<td>Promoting development partnerships</td>
<td>Enhancing research and knowledge-sharing</td>
</tr>
</tbody>
</table>

Example: Mission 4 is an important approach to achieve Millennium Development Goals (MDGs)

- JICA believes the concept of human security to be essential in realizing the MDGs.
- 189 world leaders adopted the UN Millennium Declaration, committing their nations to achieving the Millennium Development Goals (MDGs).
- These MDGs are specific, measurable targets which aim to reduce poverty by half by 2015.

The Eight MDGs
1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development
I. Overview of JICA – Three Main Arms of Cooperation

Cooperation through Finance and Investment

- **ODA Loans** are provided by the GOJ through JICA at concessional conditions, namely low interest rates and a long maturity period, to developing countries to finance investment for development.

**Technical Cooperation**

- Japan’s technical cooperation aims to nurture the human resources who will lead economic and social development in developing countries by transferring Japan’s technologies and expertise to them.

**Grant Aid** *

- Japan is providing assistance in the form of grants with no repayment obligations to provide the goods and services necessary for projects for economic and social development in developing countries.

* Note : JICA carries out a substantial part of the budget for Grant Aid operations, while the rest is left for MOFA.
JICA has established the following four priority areas for its cooperation programs in South Asia:

### Sustainable Growth and Vitalization of the Private-Sector Economy
- Providing aid toward emerging South Asian countries with notable economic growth
- Achieving sustainable growth through assistance in development of infrastructure that form the foundations of economic growth
- Enhancing cooperation aimed at collaboration with the private sector

### Peace-Building and Reconstruction
- Programs in Afghanistan and Pakistan as well as in Sri Lanka, which has been shifting to the development stage from the early reconstruction stage
- Being active in Nepal, which is in the process of establishing a government under a new constitution

### Inclusive Development and Poverty Reduction
- Approximately 500 million impoverished in the region / With gender disparity remaining a serious problem
- Aiming to continually reduce the number of impoverished people in the region
- Being engaged in gender-related assistance, such as improving women’s status and social empowerment

### Countermeasures on Environmental Concerns and Climate Change
- South Asia are highly vulnerable to cyclones, floods and other disasters caused by climate change and natural disasters.
- South Asia is a globally important region for the preservation of biodiversity.
- Providing cooperation with countermeasures on environmental concerns and climate change.
I. Overview of South Asia – Total Value of JICA Program

The figures show the total value of JICA programs in each country including Technical Cooperation (Training Participants, Experts, Study Teams, Provision of Equipment, JOCV and Other volunteers, and Other costs), ODA Loans (Disbursements), and Grant Aid (Newly concluded G/A agreements) in fiscal 2013.

Note: Figures in parentheses denote the percentage share of overall JICA programs in the region.

Note: Figures exclude JICA’s cooperation for multiple countries and/or multiple regions and international organizations.
2. JICA’s Cooperation for Energy Sector
Features of Japan’s ODA in Energy Sector in South Asia

- Generation using energy source with comparative advantage:
  - Coal for India, Bangladesh, and Pakistan
  - Gas for India and Bangladesh
  - Storage-type hydropower in Nepal

- Transmission and distribution to meet energy demand and reduce loss (all countries)

- Energy efficiency (all countries)

- Renewable energy (all countries)
List of JICA-financed Projects in India

Total Number of Projects: 72 (Generation 54, Transmission & Distribution 18)
Total Amount of Lending: 1,064.4 billion Japanese yen

Legend
● Generation
● Transmission and Distribution

Uttarakhand

Haryana
● Haryana Transmission System Project (2007)
● Western Yamuna Canal Hydroelectric Project (1981)

Uttar Pradesh
● Anpara B Thermal Power Station Construction Project (I – V)
● Anpara Power Transmission System Project (I・II・III)

Gujarat
● Gandhar Gas Based Combined Cycle Power Project (I・II・III)

Madhya Pradesh
● Madhya Pradesh Transmission System Modernisation Project (2010)

Maharashtra
● Maharashtra Transmission System Project (2007)

Karnataka
● Bangalore Distribution Upgradation Project (2006)
● Raichur Thermal Power Station Expansion Project (1988)

Tamil Nadu
● Tamil Nadu State Micro Hydro Power Stations Construction Project (1983)
● Basin Bridge Gas Turbine Project (1990)
● Tamil Nadu Transmission System Improvement Project (2012)

Andhra Pradesh
● Transmission System Modernization Project in Hyderabad (2006)
● Srisailam Power Transmission System Project
● Simhadri and Vizag Transmission System Project
● Kothagudem’a’ Thermal Power Station Rehabilitation Project (1995)
● Srisailam Left Bank Power Station Project
● AP Rural High Voltage Distribution System Project (2010)

West Bengal
● Bakreswar Thermal Power Station Project (2002)
● Purulia Pumped Storage Project (1994, 2005)
● West Bengal Transmission System Project (1997, 2002)

Meghalaya
● Umiam Hydro Power Station Renovation Project (1997)
● Umiam Stage II Hydro Power Station R&M Project (2004)

Jharkhand

Assam
● Assam Gas Turbine Power Station and Transmission Line Construction Project (I・II・III)

Andhra Pradesh
● Transmission System Modernization Project in Hyderabad (2006)
● Srisailam Power Transmission System Project
● Simhadri and Vizag Transmission System Project
● Kothagudem’a’ Thermal Power Station Rehabilitation Project (1995)
● Srisailam Left Bank Power Station Project
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Legend
● Generation
● Transmission and Distribution

Total Number of Projects: 72 (Generation 54, Transmission & Distribution 18)
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Overview of JICA’s Cooperation in Bhutan

- Infrastructure Development
- Social Service Improvement
- Agriculture and Rural Development
- Governance Improvement

Improvement of Efficiency for the Rural Power Supply (Phase 2) (Technical Cooperation) (20011.3 – 2014.8)

Rural Electrification Project Phase I and II (Loan) (2007–)
BIG-B as Engine of Growth
(Bay of Bengal Industrial Growth Belt)

2014 – 2017/18 (4/5 Years)
600 Billion JPY ODA Loans

Power and Energy
Reliable Power for Industries

Transport
Regional Logistics Hub

Invest Promotion
Enabling Environment

Bhutan
Nepal
Myanmar
NE States of India

Global Market
Myanmar
Matarbari Ultra Super Critical Coal-Fired Power Project in Bangladesh

Project Cost: 4,500 mil USD (JPN: 3,800 mil / GoB: 700 mil)
Scope: ① 1200MW PS, ② Deep Sea Port, ③ 400kV TL, ④ Access Road
Period: Port Completion in 2021, Power Station Completion in 2023

Salient Features
- 1200MW (18%) of current Power Supply
- Most-Advanced Ultra Super Critical Technology
- Deep Sea Port for Primary Energy Source Hub

Future Extension
- 3&4 Unit Power Plant (1,200MW+)
- Coal/LNG Terminal
- Economic Zone Development

Red: Component of the Project
Blue: Future Extension
Overviews of JICA’s Cooperation in Nepal

<table>
<thead>
<tr>
<th>Modality</th>
<th>Project Title (Approval Year)</th>
</tr>
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<tbody>
<tr>
<td>Loan</td>
<td>Kulekhani-I Hydroelectric Project (FY 1975, 1978)</td>
</tr>
<tr>
<td></td>
<td>Kulekhani-II Hydroelectric Project (FY1982, 1983)</td>
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<tr>
<td></td>
<td>Kali Gandaki A Hydroelectric Project (FY 1996)</td>
</tr>
<tr>
<td></td>
<td><strong>Tanahu Hydropower Project (FY2012 – ongoing)</strong></td>
</tr>
<tr>
<td>Grant</td>
<td>Extension and Rehabilitation of Power Transmission and Distribution System in Kathmandu Valley Phase 3 (FY2003)</td>
</tr>
<tr>
<td></td>
<td>Construction of New Kawasoti Substation (FY2007)</td>
</tr>
<tr>
<td>Technical Cooperation</td>
<td>Nationwide Master Plan Study on the Storage Type Hydroelectric Power Development (FY2007)</td>
</tr>
<tr>
<td></td>
<td><strong>Hydropower Planning Advisor (FY2001 – ongoing)</strong></td>
</tr>
</tbody>
</table>

Photo (left): Project Site for Dam (Upper Seti River)  
Photo (right): Seti River
Overview of JICA’s Cooperation in Pakistan

【Legend】
- Finished 【mil Japanese Yen】
- On-going Finished 【mil Japanese Yen】

- PASNI DIESEL GENERATION PROJECT【6,900】
- DADU-KHUZDAR TRANSMISSION SYSTEM PROJECT【3,700】
- QUETTA POWER STATION EXPANSION PROJECT【2,000】
- SECOND220KV GUDDU–SIBBI–QUETTA TRANSMISSION PROJECT【4,900】
- NATIONAL TRANSMISSION LINES AND GRID STATIONS STRENGTHENING PROJECT【23,300】
- RURAL ELECTRIFICATION PROJECT【20,700】
- SECONDARY TRANSMISSION LINES AND GRID STATIONS PROJECT【12,000】
- KARACHI GAS TURBINE POWER STATION CONSTRUCTION PROJECT【6,500】
- BIN QASIM THERMAL POWER STATION EXPANSION PROJECT【15,300】
- BIN QASIM THERMAL POWER STATION EXTENSION UNIT PROJECT【27,500】
- JAMSHORO THERMAL POWER STATION PROJECT【21,700】
- KOTRI POWER STATION EXTENSION PROJECT【2,400】
- 500KV TRANSMISSION LINE BOOSTING PROJECT【12,200】
- 500KV MULTAN AND GUDDO SUBSTATION EXTENSION PROJECT【3,300】
- PUNJAB TRANSMISSION SYSTEM PROJECT【11,900】
- LOAD DISPATCH SYSTEM UPGRADE PROJECT【3,800】
- GHAZI BAROTHA HYDROPOWER PROJECT【34,900】
- PASNI DIESEL GENERATION PROJECT【6,900】
- KARACHI GAS TURBINE POWER STATION CONSTRUCTION PROJECT【6,500】
- BIN QASIM THERMAL POWER STATION EXPANSION PROJECT【15,300】
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Pakistan: Energy Sector Reform Program

- Co-financing with World Bank and Asian Development Bank
- All 3 donors signed their Loan Agreement for the 1st year operation before June 2014 (JICA: 5 billion yen)

<table>
<thead>
<tr>
<th>Policy Area A: Managing Tariff and Subsidy</th>
<th>Policy Area B: Improving Sector Performance and Opening the Market to Private Participation</th>
<th>Policy Area C: Accountability and Transparency</th>
</tr>
</thead>
</table>

→ A total of 10 Objectives set under the 3 Policy Areas

- JICA is the main supporting donor for 2 of the objectives under Policy Area B

Energy Conservation

Least Cost Planning
Overview of JICA’s Cooperation in Sri Lanka

- Samanalawewa Hydroelectric Project (1986)
- Samanalawewa Hydroelectric Project (II) (1987)
- Samanalawewa Hydroelectric Project (III) (1991)
- Samanalawewa Hydroelectric Project (1995)
- Kukule Ganga Hydroelectric Power Project (1994)
- Transmission and Substation Development Project (1997)
- Transmission and Substation Development Project (II) (1998)
- Greater Colombo Transmission and Distribution Loss Reduction Project (2013)
- Power Sector Restructuring Project (2003)
- Vauniya Kilinochchi Transmission Project (2005)
- Vauniya Kilinochchi Transmission Project (II) (2011)
- Upper Kotmale Hydro Power Project (2002)
- Upper Kotmale Hydro Power Project (II) (2010)
- Medium Voltage Distribution Network Reinforcement Project (1998)
3. JICA’s Cooperation in Regional Connectivity
# JICA’s Main Infrastructure Projects in the Indo-Pacific

## 1. Southeast Asia

(1) East-West Economic Corridor
- 2nd Mekong International Bridge (Loan)
- Hai Van Tunnel (Loan)
- Da Nang Port (Loan)

(2) Southern Economic Corridor
- Cambodia National Road No. 5 (Loan)
- Neak Loeung Bridge (Grant)
- Cai Mep-Thi Vai Port (Loan)

(3) Maritime ASEAN Economic Corridor
- ASEAN RoRo Shipping Network
- Maritime Safety (Loan, Grant, Technical Cooperation)

(4) Institutional connectivity for Economic Corridors
- Projects for E-Customs and National Single Window for Customs Modernization in Vietnam and Myanmar (Grant)

## 2. South Asia

(1) Bay of Bengal Industrial Growth Belt (Big-B)
- Dhaka-Chittagong Railway Development (Loan)
- Matarbari Ultra Super Critical Coal-Fired Power (Loan)

(2) Cross Boarder Projects in North East India and Bangladesh
- North East Connectivity Improvement (F/S)

(3) Delhi-Mumbai Industrial Corridor
- Dedicated Freight Corridor (Loan)

(4) Chennai-Bengaluru Industrial Corridor
- Chennai Metro (Loan)
- Bangalore Metro Rail (Loan)
- Tamil Nadu Investment Promotion Program (Loan)

## 3. Africa

(1) Northern Corridor
- Mombasa Port Development in Kenya (Loan)
- Master Plan on Logistics in Northern Economic Corridor (Technical Cooperation)

(2) Nacala Corridor
- Nacala Port Development (Loan and Grant)

(3) Central Corridor
- Comprehensive Transport and Trade System Development Master Plan in the Tanzania (Technical Cooperation)

(4) West Africa Growth Ring
- The Corridor Development for West Africa Growth Ring Master Plan (Technical Cooperation)
24. The two Prime Ministers placed special emphasis on Japan's cooperation for enhanced connectivity and development in Northeast India and linking the region to other economic corridors in India and to Southeast Asia, which would catalyze economic development and increase prosperity in the region.

Fact sheet: Regional Connectivity and Cooperation

34. Both sides welcomed the study by JICA on regional connectivity between North-East India and the neighboring countries, and instructed respective related authorities to proceed to realizing Japan's ODA in transport infrastructure projects in the region.

35. Both sides decided to strengthen cooperation in the field of connectivity and socio-economic development in Northeast India. The Japanese side announced a survey by JICA to identify possible cooperation including road connectivity projects in Northeast states of India. The Indian side appreciated assistance by Japan to Northeast India, including a number of projects in the field of forest resource management as well as those currently under feasibility studies by JICA such as a potential yen loan project for water supply improvement in Imphal, Manipur.
South Asia: Cross Border Road Network Development

Map showing South Asia's cross-border road network, including major cities and projects such as Asian Highway No. 1, Chittagong Port (ADB), and Benapole Land Port (ADB). The map highlights JICA's proposed projects and ongoing/completed projects, with a focus on trade volume share (2014). Key locations include Kathmandu, Thimphu, Dhaka, Chittagong, and Cox's Bazar.
JICA’s Cooperation to Regional Power Supply

1. Construction of Nam Leuk Hydroelectric Power Plant (60MW) in Laos, with transmission system to Thailand

2. Construction of Yguazu Hydropower Station (200MW) in Paraguay, with transmission system integrated into regional grid in South America
Possible Cooperation area in South Asia

- Generation using energy source with comparative advantage:
  - Coal for India, Bangladesh, and Pakistan
  - Gas for Bangladesh
  - Storage-type hydropower in Nepal

- Promotion of Regional Power Supply in South Asia
- Transmission and distribution to meet energy demand and reduce loss (all countries)
- Energy efficiency (all countries)
- Renewable energy (all countries)
Example: Bangladesh

Benefits
- Utilize land-locked countries’ natural resources for electricity-starving Bangladesh (big market)
- Stimulate “cross-border solution” among cross-sectors (such as transit, water, boundary etc.)

Data Collection Survey on Electricity Interconnectivity
- Analyze electricity connectivity among neighboring countries of Bangladesh
- Identify potential hydro power generation projects in neighboring countries for import

Tentative Schedule

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Input</th>
<th>Output</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>• Conceptual Design for Potential Project(s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Pre Economic Analysis / Strategic Environment Assessment</td>
</tr>
<tr>
<td>(To be Decided)</td>
<td>F/S Formulation</td>
<td>• Hydro Power Plant in neighboring country(ies)</td>
</tr>
<tr>
<td>Future Project</td>
<td></td>
<td>• Cross-border transmission line to Bangladesh</td>
</tr>
</tbody>
</table>

Japan International Cooperation Agency
Thank you for your attention!