

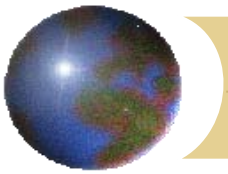
# **JICA's Economic Cooperation Tools** on **Solar Power/Thermal Sector in Arab Countries**



December 11, 2010

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Japan International Cooperation Agency



# What is JICA?

- ⊕ Japanese Government Organization
- ⊕ Dealing with **O**fficial **D**evelopment **A**ssistance (ODA)
- ⊕ Main tools are as follows:

Soft Loan

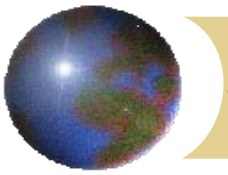


Technical Assistance



Grant Aid

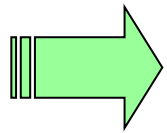




# JICA's Economic Cooperation

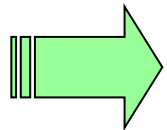
## <Key Advantages>

1. Very soft financial terms and conditions

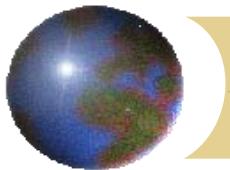


Very low and fixed interest rate as well as  
long term repayment period

2. Wide variety of technical assistances



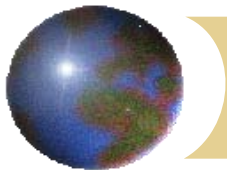
JICA can address whatever technical  
needs of the projects from earlier to  
later stages



# 1. Very soft financial terms and conditions

(1) Terms of Conditions (Soft Loan) for Middle-Income Countries (GNI per capita \$1,856-3,855)

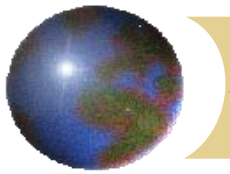
Name	Standard/ Option	Interest rate (%)	Repayment Period (years)	Grace Period (years)
General terms	Standard	1.4	25	7
	Option 1	0.95	20	6
	Option 2	0.8	15	5
Preferential terms <i>(applicable to environmental project, Human resource development, small and medium term enterprise support and peace building)</i>	Standard	0.65	40	10
	Option 1	0.55	30	10
	Option 2	0.50	20	6
	Option 3	0.40	15	5
STEP →see page 7	Standard	0.2	40	10
	Option	0.1	30	10



# 1. Very soft financial terms and conditions

(2) Terms of Conditions (Soft Loan) for Middle-Income Countries (GNI per capita \$1,856-3,855) (**Climate Change Loan: CCL**)

Name	Standard/Option	Interest rate (%)	Repayment Period (years)	Grace Period (years)
General terms	Standard	0.3	40	10
	Option 1	0.25	30	10
	Option 2	0.20	20	6
	Option 3	0.15	15	5
STEP →see page 8	Standard	0.1	40	10



# 1. Very soft financial terms and conditions

## *Sectors and Fields applicable to CCL*

### **[Preferential Terms]**

#### **I. Global environmental problems, industrial pollution**

1. Forest conservation, forestation
2. Prevention of pollution
3. Energy saving and resource conservation
4. Conservation of natural environment
5. **New and renewable energy sources**
6. Protection of ozone layer
7. Marine pollution
8. Protection of desertification
9. Water supply contributing to the prevention of infectious disease and poverty reduction

If the project contributes to reducing GHG emission

**CCL**

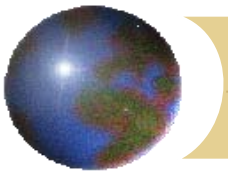
#### **II. Human resource development**

#### **III. Small and medium sized enterprises**

Low-interest loan facilities for specially small businesses among small and medium sized enterprises

#### **IV. Peace building**

Projects and programs for humanitarian improvement, restoration and reconstruction in peace-building countries and their surrounding countries.



# 1. Very soft financial terms and conditions

## *STEP: Special Terms for Economic Partnership*

### ❖ **Objective of the STEP:**

to raise the visibility of Japan's ODA to the citizens in the recipient countries and Japan through utilizing and transferring excellent technologies and know-how of Japanese firms.

### ❖ **Characteristics of Japanese Technology:**

#### ❖ **Credibility**

- Technology, Quality, Management (Time Schedule, Cost)

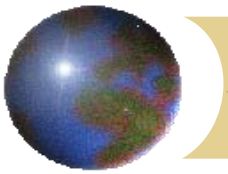
#### ❖ **Durability**

#### ❖ **Maintenance**

- Simple and Easy, Long Interval

#### ❖ **Successful Training**

#### ❖ **Environment-friendliness, etc.**



# 1. Very soft financial terms and conditions

## *Terms and Conditions of STEP*

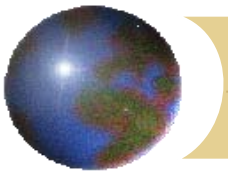
### ❖ **Interest Rate and Repayment Period for CCL + STEP** (see page 5)

- ❖ Repayment Period : 40 years (including 10 year grace period)
- Interest Rate : 0.10%

### ❖ **Procurement Conditions**

- ❖ Prime contractors are tied to Japanese firms. However, sub-contractors are untied and opened to all countries.
- ❖ Joint ventures (JV) with recipient countries are also admitted on condition that Japan is a leading partner.
- ❖ Total cost of goods and services procured from Japan shall be not less than 30% of the total amount of contract(s) (except consulting services) financed by STEP loan. In other words, up until 70% of goods and services can be procured from countries other than Japan.





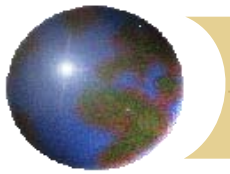
# 1. Very soft financial terms and conditions

## *Sectors and Fields applicable to STEP*

- ✦ **Bridges and Tunnels**
- ✦ **Ports and Airports**
- ✦ **Urban mass transit system**
- ✦ **Oil / Gas transmission and storage facilities**
- ✦ **Communications / Broadcasting / Public information system**
- ✦ **Power stations / Power transmission / Distribution lines**
- ✦ **Urban flood control projects**
- ✦ **Trunk road / Dams**
- ✦ **Environmental projects**



See next page



# 1. Very soft financial terms and conditions

## *Power stations / Power transmission / Distribution lines*

### ⊕ **Power station**

- ⊞ High-efficiency thermal power plant
  - Gas combined cycle
  - Super critical, etc.
- ⊞ Hydroelectric power plant
  - Pumped storage type
  - Run off river type, etc.

### ⊕ **Renewable energy**

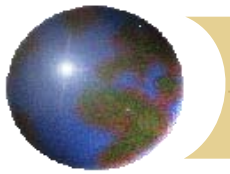
- ⊞ Photovoltaic generation
- ⊞ Thermal solar power generation
- ⊞ Wind turbines, etc.

### ⊕ **Power transmission**

- ⊞ Substation (Gas Insulated Switch)
- ⊞ SCADA, etc.

### ⊕ **Distribution lines**





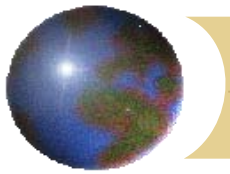
## 1. Very soft financial terms and conditions

### 【Example for Thermal Solar Power Generation Project financed by STEP】

#### *Photovoltaic Rural Electrification and Water Supply Project (TUNISIA)*



- ❖ Loan Approval: March 2007
- ❖ Loan Amount: 1,731 Million Yen
- ❖ The Project aims to install photovoltaic generation equipment, water pumps, and desalination equipment to about 500 households in the rural farming area, and to some 60 water wells located in the southern farming area.



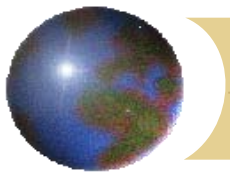
## 1. Very soft financial terms and conditions

【Example of Solar Combined Cycle Power Plant financed by Yen Loan】



### *Kuraymat Integrated Solar Combined Cycle Power Plant Project (I) & (II) (EGYPT)*

- ✦ Loan Approval: Jan 2006 & Dec 2008
- ✦ Loan Amount: 10,768 & 10,665 Million Yen
- ✦ The Project aims to construct an integrated solar combined cycle power plant with a capacity of 150MW in Kuraymat, about 100km south of Cairo City, to generate electricity to be provided to existing transmission networks in the country.



## 2. Wide variety of technical cooperation

### Formulation of Power Development Master Plan

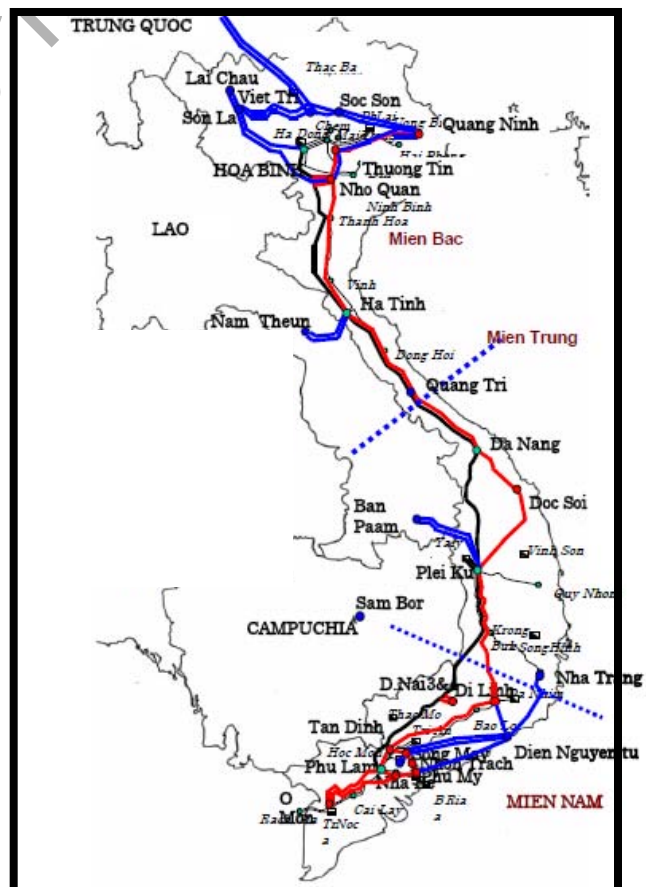
*Example: 7<sup>th</sup> National Power Development Plan in Vietnam*

- Support for long term development plan from 2016 to 2025
- Support for demand forecast, system planning, project identification and conceptual designing

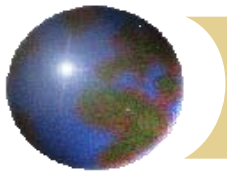
### Establishment of Electric Technical Standard

*Example: Electric Power Technical Standard in Lao DPR*

- Support for preparation of electric technical standard
- Provision of training for engineers to obtain necessary information/skill to better perform project appraisal based on the standard



**System Dev't Plan in Vietnam (by JICA's PDP7 Support)**



## 2. Wide variety of technical cooperation

### *Formulation of Energy Efficiency Master Plan*

*【Example: M/P Study for Energy Conservation in the Power Sector in Kingdom of Saudi Arabia】*

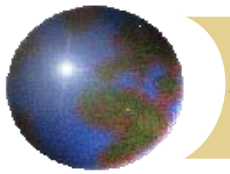
- ✦ Support to make the basic policy of energy efficiency
- ✦ Proposal of the action plan for energy efficiency (ex; Energy Management System, Labeling, Energy Audit, Energy Efficiency Campaign, DMS...)
- ✦ Formulation of the National Energy Efficiency benchmark

### *Capacity Building for Energy Management System*

*【Example: Energy Conservation Center in Turkey】*

- ✦ Support to strengthen training center for energy managers and auditors





## 2. Wide variety of technical cooperation

### *Grid Connected PV System (Grant Aid)*

- Promotion to introduce renewable energy in developing countries through provision of necessary equipments for grid-connected PV system (Several Hundred kW)
- Support for capacity building of operation and maintenance

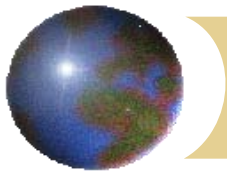
*【Example: Djibouti, Egypt, Jordan, Morocco, Palestine, Syria, Yemen, etc.】*



Car parking

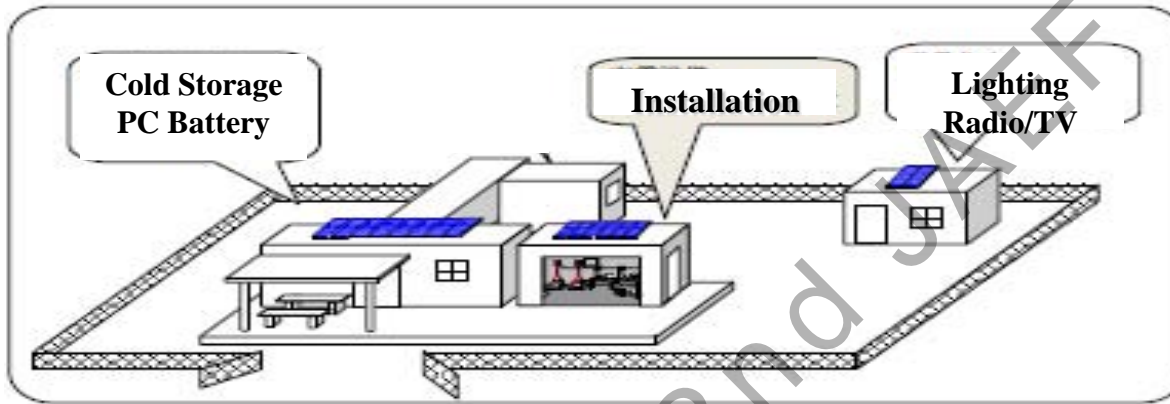


Hospital



## 2. Wide variety of technical cooperation PV *Systems for Rural Electrification*

- ✦ Establishment of Energy Kiosk for Electrification of non-electrified Rural Areas
- ✦ Capacity Development of Community for Operation/Maintenance and Tariff Collection



Ex. Laos, etc. Energy Kiosk



Cold storage for Vaccine

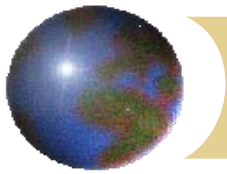


Battery Charge



Night School/Medical Care





## 2. Wide variety of technical cooperation

### *Training Program in Japan*

*[Example: Group Training Course on Planning Support for Introduction of Solar Power Generation (FY2010~2012 at JICA Osaka and JICA Okinawa) ]*

✦ *Program Objectives:*

Preliminary plans for introducing and disseminating Photovoltaic (PV) technologies in their respective countries are examined.

✦ *Target Countries:*

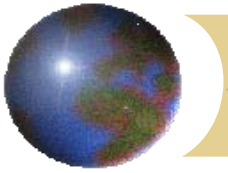
- Course "A" (Grid-connected PV) : Asia, Middle east, North Africa, Latin America
- Course "B" (Off-grid PV) : Mainly for Africa
- Course "C" (Mini-grid/hybrid PV) : Island-countries

✦ *Training Period:* 1 month

✦ *Training contents:*

- Lectures: PV technology, History and structure of PV industry in Japan and others
- Site visit: METI, JPEA, Power companies, Manufactures (Panel, Inverter, Battery), Installer, Water Treatment station (utilization of PV)
- Planning and Thinking methodology Practice: System thinking, Knowledge Management





**Thank You!**

The 2nd JAEFF 2011