

CAPACITY DEVELOPMENT PROJECT

ON

**“FINANCIAL ANALYSIS & PLANNING, AND
PROJECT MANAGEMENT”**

AND

**“POWER LOSS REDUCTION IN
TRANSMISSION & DISTRIBUTION
NETWORKS**

FOR IRAQ ELECTRICITY

JICA Third Country Training Program

**Prepared & Implemented by
National Electric Power Company
(NEPCO)**

Amman – Jordan

**In cooperation with
Japan International Cooperation Agency
(JICA)**

INVITATION

National Electric Power Co. (NEPCO) and Japan International Cooperation Agency (JICA) have decided to cooperate to extend the technical trainings for the officers and engineers of the Ministry of Electricity of Iraq (MOEI), with strong belief that developing and upgrading human resources in consistence with the scientific and technical development will play vital roles for Iraqi electricity sector recovery.

*NEPCO and JICA agreed to implement two training programs in the fields of:
(1) Financial Analysis and Planning, and Project Management (FPPM),
(2) Power Loss Reduction in Transmission and Distribution Networks (LRTD)*

FPPM and LRTD are scheduled to be conducted at NEPCO Head Office in Amman, Jordan from December 2006.

Two fields are among the ones that the MOEI staff needs to develop their skills the most in order to cope with pressing needs of improving institutional efficiencies as well as increasing electricity supply available.

Those topics are also of critical importance considering that the MOE is planning to carry out rehabilitation and reconstruction of power facilities using funds from international donors.

We therefore have much pleasure to invite the relevant MOEI staff to participate in those courses.

*Representative
Iraq Unit , JICA Jordan office*

MORI Hiroyuki

*Manager, Coordination Dept for Electricity
Affairs*

Eng. Rajae Jaber

Manager, NEPCO International

Eng. Riyad Kanaan

Manager, Energy Dept.

Eng. Suliman Al Hiyai

BACK GROUND

The power sector in Iraq has seriously deteriorated due to conflicts, lack of investment, insufficient operation and maintenance (O&M), and looting since the outbreak of the past wars. Total installed power capacity was 9,295 MW in 1990, but about 70 percent of the total capacity was damaged during the 1991 Gulf war. Although it once recovered to the 4,000 MW level thanks to the Oil for Food Programme assisted by the United Nations, it again dropped to 3,300 MW during the last conflict.

Reconstruction work by various donor agencies started soon after the conflict occurred. However, the generation capacity is still hovering around the pre-war level because reconstruction work has been making only slow progress due to serious security constraints and repeated sabotages. As a result, people nationwide have been suffering from frequent load shedding almost all daylong.

Reconstruction and rehabilitation of power facilities are the top priorities to cope with this power shortage, but at the same time, strengthening the institutional capacities such as laws, regulations, and administration and management system is also of great importance for future power development.

Meanwhile, various reports have revealed that there are enormous needs for institutional capacity building because the establishment of effective institutional, administration, and management schemes is a prerequisite condition for remedying the current difficult situation of power supply.

The National Development Strategy (NDS), which was made public at the donor conference held in Jordan in 2005, has set an objective during the coming three years that the electricity supply recovered to pre-Gulf War level (7,000MW). It has proposed four items to realize this objective; 1) reconstruct the power network, 2) update distribution networks, 3) develop a timetable for training executives and supervisory staff to upgrade its efficiency, 4) review tariff setting and encourage private sector participation.

In order to support Iraqi government in this field, the Japan International Cooperation Agency (JICA), in cooperation with the National Electric Power Company in Jordan (NEPCO), has conducted the capacity development program for “Institutional System and Regulation (ISR)”, where JICA and NEPCO experts presented the counterparts of Ministry of Electricity, Iraq (MOE) concept and various lessons of sectoral reform which covers a wide range of aspects such as laws and regulations, tariff scheme, private sector participation and procurement, and metering and billing. Intensive discussion has enabled Iraqi participants to have a clear image of necessary steps towards future power sector institutional development and perspectives for the picture of the future power industry. An institutional development vision for electricity was formulated in order to clarify the ultimate goal in electricity sector in the future, and set short-, mid- and long term goals to achieve the ultimate one. The ultimate goal is to achieve reliable, sustainable, and cost-effective power supply by the full-fledged power industry. However, it is not easy for the MOE to reach this ultimate goal in the short term. Therefore the MOE as well as JICA have agreed to take a step-by-step approach towards the attainment of successful

development. JICA would assist MOE in achieving short term goal; establishing effective administration and management systems without a drastic change in the current structure of the MOE, in JFY 2006.

Several outcomes are necessary to achieve this short term goal;

- 1- To evaluate the organization structure and clarify (and change, if necessary) the roles of each division and unit in the MOE,
- 2- To carry out studies of future demand and appropriate tariff schemes,
- 3- To compile short- (or annual) and long-range power development programs,
- 4- To implement measures to reduce power loss (both technical and non-technical),
- 5- To establish safety and technical codes,
- 6- To establish financial planning and management systems based on international accounting standards,
- 7- To improve efficiency and performance of power supply including network systems. etc,
- 8- To evaluate the organization structure and clarify (and change, if necessary) the roles of each division and unit in the MOE,
- 9- To carry out studies of future demand and appropriate tariff schemes,
- 10- To compile short- (or annual) and long-range power development programs,
- 11- To implement measures to reduce power loss (both technical and non-technical)
- 12- To establish safety and technical codes,
- 13- To establish financial planning and management systems based on international accounting standards,
- 14- To improve efficiency and performance of power supply including network systems. etc,

Among above list of expected outcomes, it was agreed that the priorities for MOE for the time being is to revitalize power facilities under the national government with the aid from foreign donors. In order to do so, it would be essential to improve the efficiency and transparency of MOE.

Hence, the projects to be carried out this fiscal year are

- 1) Loss Reduction for Transmission and Distribution Networks (LRTD)
- 2) Financial Analysis & Planning (incl. investment planning, debts, subsidies, incomes (tariffs)...), and Project Management for Donor Funded Projects. (FPPM)

PROGRAM OBJECTIVES

The purpose of this programme is to enhance the institutional and technical capacity of MOEI to achieve smooth and sound reconstruction and development.

I. Financial Analysis & Planning and Project Management (FPPM)

Donors, particularly Japan, US, and the World Bank are committing strongly to the reconstruction of this vital infrastructure. The Government of Japan has pledged rehabilitation of Al-Mussaib Thermal Power Plant by yen loan, and is considering further assistance in this field. The most urgent thing that MOE has to work on is to revitalize its power facilities with available fund sources inside and outside of Iraq to deliver stable power supply to the Iraqi citizens. Concessionary loans seem to be most reliable fund sources for MOE for reconstruction for the foreseeable future.

However, in order to attract those funds, MOE needs to introduce efficient and transparent management system to secure maximum benefit and accountability for loans. It is also necessary that MOE learn sound investment and financial planning based on the financial analysis of each loan project. Revenues from tariffs and subsidies from the government should be integrated in this analysis and balances from those sources should be carefully considered.

This process will enhance MOE's ability for acquiring financial self management system, which is definitely essential step to improve costly and opaque MOE administration. This is also thought to be a prerequisite condition to move forward financial autonomous power entities, to which MOE might be transformed in the future.

The purposes of this course are to:

- (1) Study present financial structure (revenue system and tariff schemes) in Iraq,
- (2) Understand basic theory for cost calculation and evaluation of investment and finance (project-based financial analysis) for sound financial management,
- (3) Improve project management capacity of MOE by introducing transparent accounting and auditing system, project planning, bidding, evaluation and implementation know-how,
- (4) Propose a guideline for investment and financial analysis for project planning*,
- (5) Propose a guideline for project management**,

* A guideline for investment and financial analysis for project planning shall cover project-based financial analysis, revenue (tariff and subsidy) analysis, debt management, etc. It is expected that MOE refer to this guideline when it make financial and investment planning.

** A guideline for project management shall cover project planning, bidding and evaluation, and implementation, etc. This guideline is expected to be a reference to plan and manage the projects.

The course will consist of three stages.

This course, which consists of three consecutive stages, will be carried out in Jordan hosted by NEPCO. Japanese expert on financial analysis and project planning will oversee the course, carry out studies and draw up a guideline. The course will be conducted in participatory manner, and MOE counterparts are expected to play a core role.

Through the course, participants are expected to:

- (1) Collect relevant data and present current status of Data collection of current financial and accounting system, organization rules for project planning and implementation,
- (2) Learn theories on cost calculation, evaluation of investment and finance (project-based financial analysis) for sound financial management
- (3) Learn theories on accounting and auditing system, project planning, bidding, evaluation and implementation know-how,
- (4) Formulate a guidelines for investment and financial analysis for project planning, and a guideline for project management

2- Power Loss Reduction in Transmission and Distribution Networks (LRTD)

It is reported that the total power loss in Iraq is 33% in 1990 and power loss in transmission and distribution is assumed to be 26%. Considering the fact that the power supply only satisfies about the half of the demand, the impact of this loss is significant. This must be improved through rehabilitation and strengthening of power supply system, and administration and management system.

The purposes of this course are to:

- (1) Study present status and issues of power loss,
- (2) Understand theories and measures for power loss reduction,
- (3) Propose a strategy* and a guideline** for power loss reduction

* A strategy will be developed in order to analyze situations, set a timeframe for improvement, examine most appropriate and feasible approach and measure for power loss reduction. It is expected that MOE work on reducing power loss in the coming years according to this strategy.

** A guideline will be drawn up to clarify technical requirements and instructions for actual power loss reduction works. This guideline is expected to be a technical reference for MOE's work on power loss reduction.

The course will be divided into two sub groups:

- 1- **Technical Loss Group (TLG) and ,**
- 2- **Non-Technical Loss Group (NTLG)**

Each course, which consists of two consecutive stages, will be carried out in Jordan hosted by NEPCO. Japanese expert on loss reduction will oversee the course, carry out studies and propose a strategy and a guideline. The course will be conducted in participatory manner, and MOE counterparts are expected to play a core role.

Through the course, participants are expected to:

- (1) Collect relevant data and present current status of technical and non-technical power loss concerning whole power system (generation, transmission and distribution),
- (2) Learn theories, practical measures and lessons for loss reduction,
- (3) Do on-site survey for power loss data collection and analysis,
- (4) Formulate a strategy and a guideline for power loss reduction with experts,

PARTICIPANTS

1- Financial Analysis & Planning and Project Management (FPPM)

Fifteen (15) counterparts with following requirements shall be selected from MOE.

- (1) Engineers with good experience and knowledge on financial analysis, project planning and management but younger than 45 years old,
- (2) Expected departments from which the counterparts shall be selected:
 - Planning and Studies Department (Planning Section, Economic Studies Section, Project Section)
 - Auditing and/or Accounting Office

* It should be noted that this course is designed as a package with three consecutive stages. MOE is requested that once counterparts are nominated, they are required be attending whole stages (from 1st Stage to 3rd Stage) in order to maintain the continuity.

** The counterpart team is expected to be designated as project planning and management unit after completing the course. They will oversee the project planning and management and disseminate the guidelines (Guideline for investment and financial analysis for project planning, and Guideline for project management) and know-how to relevant officials in MOE. MOE is requested to select highly competitive officers and engineers for this course.

2- Power Loss Reduction in Transmission and Distribution Networks (LRTD)

Fifteen (15) counterparts, ten (10) for TLG and five (5) for NTLG, with following requirements shall be selected from MOE.

- **Technical Loss Group (TLG)**

- (1) Engineers with good experience and knowledge on technical loss but younger than 45 years old,
- (2) Expected departments from which the counterparts shall be selected:
 - Study department from Distribution Directorates
 - Study department from Transmission and Directorates
 - Study department from Generation Directorate
 - Distribution and Transmission study section in Planning & Studies Office

- Non-Technical Loss Group (NTLG)

- (1) Engineers with good experience and knowledge on non-technical loss but younger than 45 years old,
- (2) Expected departments from which the counterparts shall be selected:
 - Sales department from Distribution Directorates,
 - Study department from Distribution Directorates
 - Study department from Economic Office of MOE

It should be noted that this course is designed as a package with three consecutive stages. MOE is requested that once counterparts are nominated, they are required be attending whole stages (from 1st Stage to 2nd Stage) in order to maintain the continuity.

All participants should comply fully with the rules and regulations of the Training Programme as laid down by JICA and NEPCO.

PROGRAM MANAGEMENT AND TRAINING STAFF

The two programme (FPPM) and (LRTD) shall be organized by Japanese experts in cooperation with NEPCO experts and resources. They shall be supervised and financed by JICA, and under direct management of NEPCO.

All instructors and lecturers from NEPCO who have considerable professional experience will implement these programmes.

TRAINING AND PROGRAM

I. Financial Analysis & Planning and Project Management (FPPM):

The course will consist of three stages covering the following topics: -

(1) FIRST STAGE : (3rd to 21st December 2006)

Iraqi counterparts will bring data and present current condition of finance, accounting and auditing system, and project planning and management system in Iraq.

The Japanese and Jordanian experts will introduce theory on financial analysis and management, project planning, management, evaluation to Iraqi participants.

Iraqi counterparts will receive instruction for data collection and financial analysis as a practice in Iraq.

(2) SECOND STAGE: (17th to 23rd March 2007)

Iraqi counterparts will present result of the practice and make analysis with Japanese experts.

Japanese and NEPCO experts will lecture on further details on financial analysis and project planning and management. It will draft an outline of a guideline for investment and financial analysis for project planning, and a guideline for project management. Discussion will be held with Iraqi counterparts for further elaboration.

Japanese experts will instruct Iraqi counterparts for additional practice, and request them to discuss the guideline drafts within MOE.

(3) THIRD STAGE: (16th to 22nd June 2007)

Iraqi counterparts will present the result of the practice and make analysis with Japanese experts.

Japanese experts will explain a guideline for investment and financial analysis for project planning, and a guideline for project management. They will discuss with Iraqi counterparts in order to finalize them.

Discussion will be held for a plan in the next fiscal year.

2. Power Loss Reduction in Transmission and Distribution Networks (LRTD):

The course will consist of two stages covering the following topics:

(1) FIRST STAGE: (3rd to 21st December 2006)

Iraqi counterparts will bring data and present current condition of power loss in Iraq. The Japanese and Jordanian experts will introduce theory and practical measures to Iraqi participants. The Japanese expert will also lecture on the concept for strategic analysis for power loss reduction.

Intensive discussion will be held in order to clarify the causes of loss reduction.

Iraqi counterparts will receive instruction for on-site survey for power loss in Iraq.

(2) SECOND STAGE: (10th to 23rd March 2007)

Iraqi counterparts will present on-site field survey and make analysis with Japanese experts.

Japanese expert will lecture on further details on loss reduction methodologies and analysis. It will draft an outline of strategy and a guideline for loss reduction, and discuss with Iraqi counterparts for further elaboration.

Japanese experts will instruct Iraqi counterparts for further on-site survey and reporting on power loss.

DATE & PLACE OF EACH PROGRAM

The programs are scheduled to take place as follows (subject to be changed):

I. Financial Analysis & Planning and Project Management (FPPM):

Stage –1 : DECEMBER, 2006 (Provisional)

Stage –2 : MARCH, 2007 (Provisional)

Stage -3 : JUNE,2007 (Provisional)

The program is planned to be held for three week on December 2006 for the first stage, and for one week on March 2007 for the second stage, and finally for one week on June, 2007 for the third stage.

The Course will be conducted at the head offices of the National Electric Power Company (NEPCO), located at Amman – 7th Circle

2. Power Loss Reduction in Transmission and Distribution Networks (LRTD):

Stage –1 : DECEMBER, 2006 (Provisional)

Stage –2 : MARCH, 2007 (Provisional)

The program is scheduled to take place for three weeks on December 2006 for the first batch, and for two weeks on March 2007 for the second batch.

The Course will be conducted at the head offices of the National Electric Power Company (NEPCO), located at Amman – 7th Circle

ACCOMMODATION

The participants of the Financial Analysis & Planning, and Project Management (FPPM) and the participants of the Power Loss Reduction In Transmission & Distribution Networks (LRTD) program will be accommodated at a suitable hotel in single rooms with breakfast meal.

Health Care & Life Insurance

JICA Jordan office will provide Health Care and Life Insurance for all participants from their arrival to Jordan, until their departure.

Site Visits

NEPCO management will arrange study tours and site visits to some of the utilities, related to the two courses.

Per -Diem

- Each participant in the FPPM Courses will be paid daily allowance of 30 JD, as per diem upon arrival to Amman.
- Each participant in the LRTD Courses will be paid daily allowance of 30 JD, as per diem upon arrival to Amman.

Transportation

- NEPCO management will arrange the local transportation for the participants for the FPPM Course and LRTD Course
- A proper transportation will be arranged during the site visits.

Phone Calls

Long distance phone calls from the hotel and so on shall be paid by the participants .

APPLICATION PROCEDURES

Application should be made on the special form that is attached to this pamphlet.

Two copies the duly completed application through the diplomatic channels, should be sent to the Jordanian Ministry of Planning and International Cooperation, with copies to NEPCO and JICA.

SELECTION OF PARTICIPANTS

NEPCO and JICA will select fifteen (15) officially nominated candidates for (FPPM) Course, fifteen (15) for LRTD Course, ten (10) for TLG and five (5) for NTLG from among those who apply before the closing date.

NEPCO will notify MOEI of the selected participants through the Jordanian Ministry of planning and International Cooperation and JICA office.

CERTIFICATE

All participants who shall complete the programme's requirements will be awarded a certificate accredited by JICA and NEPCO.

The address of the program management is:

National Electric Power Co.

NEPCO International

P.O. Box 2310

Amman 11181 JORDAN

FAX: 962 6 856 421 or 962 6 818 336

TEL: 962 6 858 734 or 962 6 858 704 or 962 6 858 675

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