DRAFT OUTLINE OF THE VISION FOR INSTITUTIONAL DEVELOPMENT IN THE POWER SECTOR OF IRAQ

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1. Background

The power sector in Iraq has been 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 posted was 9,295 MW in 1990, but about seventy 70 percent of the total capacity was damaged during the 1991 Gulf war. While Although it once it recovered to a 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 works of 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 sluggish making only slow progress due to serious security constraints and repeated sabotages. As a result, people nationwide have been suffered 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 are is also of great importance for future power development.

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

The National Development Strategy (NDS), which was made public at the donor conference held in Tokyo in October 2004, clearly stipulates that the government should concentrate on policy and regulation issues, while public services, such as electricity,

water and so forth, should be enhanced through private private-sector participation.

In cooperation with the National Electric Power Company in Jordan (NEPCO), the Japan International Cooperation Agency (JICA) started a capacity development program for "Institutional System and Regulation (ISR)" aimed at instilling the concept of sectoral reform in the Ministry of Electricity of Iraq (MOE) the concept of sectoral reform. Dissuasion of the sectoral Sectoral reform covers a wide range of aspects such as laws and regulations, tariff scheme, private sector participation, procurement, and metering and billing.

Various lessons and learns oflearned from other counties were also presented in the workshops of the ISR program so that the Iraqi participants had a clear image of necessary steps towards future power sector development and perspectives for the picture of the future power industry. EspeciallyIn particular, in the second and third workshops, a series of discussion was held to formulate a vision for and a road map of institutional capacity development. Finally, the Iraqi participants compiled a tentative vision, in which both individual tasks to be carried out and targets to be attained in the long term were clarified.

This document summarizes the result of discussions and analyses carried out under the ISR program. We also believe that it must provide a guideline for further technical assistance (TA) of from JICA for institutional capacity development in the power sector of Iraq.

2. What are the issues and problems in the institutional domain?

2.1 Brain storming discussion in the first stage

In November 2005, the first workshop, in which Iraqi, NEPCO and JICA members participated, was held in the first stage of the program. To clarify the most serious issues (in other words, problems), which Iraq's power sector is now facing, a brain storming discussion session was carried out. The participants concluded that the following problems were fundamental issues, and issues to be urgently tackled and resolved:

- Administrative corruption and weak management system (10[1])

[1] The number in the parenthesis shows the priority of the problem in the eyes of the participants. The larger the number is, the higher the priority is. In the problem tree, it is marked by a red square.

- Insufficient financial resources and planning (8)
- Outdated legislations (7)
- Necessity of sector restructuring (6)
- Low tariff levels and weak billing system (6)
- Insufficient distribution network capacity (3)
- Illegal uses
- Insufficient generation capacity and distribution network (10)
- High O&M cost of old generating stations
- Ineffective information and communication technology (ICT) (2)

An analysis on cause-to-effect of these issues was also conducted in the workshop, and detailed information is available in the attachment of Annex 1.

2.2 Technical discussion in the second stage

In technical discussion of the second workshop held in January 2006, the participants further discussed fundamental problems of the power sector and directions of problem solving.

As compared to the discussion of the first stage, issues listed below were much more specifically and concretely clarified. This discussion gives held some implications in for finding potential areas on which the future technical assistance must focus.

(1) Policy, laws and regulations:

- Clear policy vision for the power sector development (The MOE, at present, has no clear vision for the sectoral reform.)
- Rigid institutional and organizational structure for the long-term power development planning. (There was no planning for sector development in the past 20 years.)
- Outdated laws, and rules and regulations.
- Outdated technical and safety codes.

(2) Tariff issue

- Balance of cost and revenue.
- Investment requirement for future power development. (To clarify the financial burden of the future investment, demand forecast and financial evaluation are also required.)
- Balance of the cost burden among consumer categories and customer affordability.
- Political consideration. (It There is sometimes political intervention for tariff setting.)
- Reduction of electricity loss (both technical and non-technical loss).
  - Power theft
  - Ineffective billing and metering system.

(3) Private sector participation:

- Immature market conditions for the private sector at present. (For private investors, the country risk of Iraq is still very high.)
- Necessity of the full governmental full guarantees for project implementation. (Under the current circumstances, the foreign private investors may not invest in projects without full governmental guaranties for implementation, and this requires a strong commitment of by the Government of Iraq (e.g., governmental guarantee for the implementation of the power purchase agreement (PPA) and the fuel supply agreement (FSA).)
- High cost of private investment under the current status. (Investors will require a higher return on investment in accordance with foreseeable risks associated with the project.)

(4) Organizational capacities

- Inefficient administration and management systems (Lack of incentives for the government staff).
- Lack of manpower and equipment for day-to-day work in the field operation.

3. What is the ultimate goal for the institutional development in the power sector?

The ultimate goal of the vision must be 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. To this end, the MOE needs to clarify what it must tackle now and in the future, and take a step-by-step approach towards the attainment of successful development.

4. Timeframe for institutional development in power sector

To reach the ultimate goal, we need to set upestablish milestones, which clarify specific goals and timeframes and issues to be tackled, and also to prioritize these issues in individual timeframes. In this task, we also need to take into account the great achievement made by the "Economic Governance (EG) Project" of the United States Agency of International Development (USAID).

To make the image of each stage of institutional development much clearer, we split the overall time horizon into three terms: Short term (five years from now), mid-term (six to ten years), and long term (eleven to fifteen years)

Goals of institutional development involve a wide range of concept. For example, in the discussion of the status of future shape of the power industry, one person may insist that the government must continue to own the power industry and pursue social welfare, but the other may not. Like In this way, the image of an independent (self-supporting) power utility varies from person to person. Although, to draft a vision, we tentatively proposed several ideas for sectoral reform (e.g., corporatization and equitization of an electric utility, and introduction of independent power producers (IPP)) in this stage to draft a vision, they must be tuned and changed, if necessary, because a lot of political uncertainties still exist. However, this draft vision is still worth enough to discuss alternative road maps that lead to the ultimate goal.

The most important point is that issues discussed below must be periodically reviewed and modified taking into consideration of the social, economic, and political environment of the time.

4.1 Short-term goal (next five years)

In the vision, we set up theestablished short-term goals as follows:

- To establish effective administration and management systems without a drastic

change of in the current structure of the MOE.

- To prepare make necessary arrangements necessary for the establishment of an electric utility (Separation and corporatizetion of the business units of the MOE).

Hence, to achieve the above goals, the following tasks must be implemented .

- To evaluate the organization structure and clarify (and change, if necessary) the roles of each divisions and units in the MOE.
- To carry out studies of future demand forecast and appropriate tariff schemes.
- To compile short- (or annual) and long-range power development programs.
- To implement measures to reduce power loss reduction measures (both technical and non-technical loss).
- To establish safety and technical codes.
- To establish financial planning and management systems based on international accounting standards.
- To improve efficiency and performance of power supply including network systems.
- To prepare necessary institutional arrangements such as drafting BOT law (or rivisingrevising the electricity law), and establish a special committee under the Prime prime Minister minister to discuss and facilitate private investment in infrastructure.

4.2 Mid-term goal (six to ten years)

The mid-term goals are:

- To materialize the corporatizeation[2] of the power business units of the MOE (e.g., establishment of the National Power Corporation) in order to supply power more cost effectively and operate business in a market-oriented manner
- To arrange make the necessary preparations necessary for equitizating the

[2] This should happen after the MOE restores the power infrastructure and suppliesy enough electricity to all Iraqi citizens without any shortage. Also fFirm political commitment and consideration are also quite essential to achieve this goal.

above government-owned power corporation

To achieve the above goal, the following tasks must be implemented:

- To separate the MOE policy decision-making, regulation, and business functions offrom each other the MOE.
- To operate the power business in disciplined manner.
- To establish a sound financial condition supported by tariff revenue.
- To increase tariff levels and secure future investment in power development.
- To prepare make institutional arrangements such as drafting laws and regulations for the establishment of the market-oriented power industry and further restructuring.

4.3 Long-term goal

The long-term goals are is to materialize achieve the equitization [3] of the government-owned power corporation in order to functionso that the power industry ca function more cost effectively.

To achieve this goal, following tasks must be completed:

- To depart from financial assistance from the government.
- To promote private investment.
- To strengthen corporate governance and improve the efficiency of power supply.
- To establish a rigid basis for self-financing with borrowing (debt-financing) based on credit worthiness.
- To diversify the structure of the power industry and facilitate private investment.

[3] This should happen after the MOE successfully splits its business function and establish a power entity (i.e., the aforesaid National Power Corporation), and this public corporation must be operated on commercially sound conditions. Firm political commitment and consideration are quite essential to achieve this goal.

5. How can JICA contribute to the realization of this vision?

Based on the above discussion, the workshop participants continued further discussion of how JICA can contribute to the realization of the vision for institutional development in the power sector of Iraq, and clarified the areas where JICA should provide TAs in the future.

We selected the possible TA themes for fiscal 2006, also incorporating the areas in which the areas Iraqi side had required for assistance were also incorporated. To keep these themes consistent with the road map in the vision, we rearranged them in three categories:

Category A: To Revamp Destroyed Facilities

Category B: To improve the financial position

Category C: To Prepare for the Next Steps

As shown in Table 1, each category was further broken down to more specific programs

In the discussion, there were was some different difference of opinions among the participants. For example, the Iraqi side had a strong expectation for desires to choosing choose a TA program form Category A because of its urgency. However, almost of all of these themes has have already been already tackled or implemented by various donedonors. Finally, we recognized that there was little room for JICA to select a TA theme form from Category A.

Conversely, programs in Categories B and C are much attractive. The program B-1, for example, covers a wide range of time horizon from the shot to the mid terms, while the two nominated programs in Category A focus on urgent issues in the short term. Programs in Category C cover a much wider time horizon from the short to the long terms, and aim to continue the discussion on the prospective structure of the power industry in the future. Because the focal point of the JICA Third-Country Training Program (TCTP) is still institutional capacity development, rolling of the vision is a basic and important task even though some of the other tasks in the program discuss purely technical issues

Through the discussion among participants, we agreed on selecting two TA programs for fiscal 2006, as follows:

(1) Program B-1: Revenue increase and loss reduction

Program B-1 consists of the towtwo major components: Appropriate tariff scheme and loss reduction. These components are further broken down to more specific tasks. With regard to tThe Program A-2 theme of "Optimization optimization of networks," in which the Iraqi side had a strong interest in Program A-2 was also integrated in this program as sub-task

Tasks and sub-tasks:

a) Appropriate tariff scheme

- Real cost of power supply
  - Depreciation, O&M, and fuel
  - Necessary cost for future investment
- New investment cost
  - Construction cost
  - Fundraising cost

b) Loss reduction

- Reduction of technical loss
  - Optimization of networks
- Reduction of non-technical loss (Lessons and learns oflearned from neighboring countries are important.)
  - Metering system or alternatives (e.g., prepaid card system)
  - Billing and collection

(2) Program C-2: Enhancement of organizational capacity

The aim of this program is to improve the administration and management capacity of the MOE. As the basis for the whole discussion, there is a strong need for the refinement of the road map for the institutional capacity development, in other words, sectoral ferom. However, due to the constraints of on budget and other resources, a major discussion will be focused on corporate governance of the MOE. Individual detailed tasks in the program are as follows:

Tasks and sub-tasks:

a) Road map for the institutional development

- Refinement of the vision: Structure of the industry
  - ➢ Single- or multiple-buyer system
  - ➢ Corporatization, equitization, or privatization
  - ➢ Use of private energies (e.g., contract-out and BOT schemes)

b) Corporate governance

- Finance and accounting
- Rules of organizational management
- Evaluation of staff performance
- Motivation

c) Quality assurance

Table 1: Possible TA Themes for FY2006

Category A: To Revamp Destroyed Facilities	Category B: To improve the financial position	Category C: To Prepare for the Next Steps
Program A-1: Planning for reconstruction -Diagnosis of existing facilities (JICA, UNDP) -Short-term demand forecast (or allocation of power supply) (USAID) -Short-term power development (USAID) -Installation of new generators (GOJ, UNDP, US, DFID) -Reinforcement of network (ibid) -Fund procurement (ibid) --Grant --Concessional loans (IBRD, JBIC etc.) -Necessary training (Outside this TCTP, JICA will continue the ongoing training programs in Japan and Egypt)	Program B-1: Revenue increase and loss reduction -Appropriate tariff scheme --Real cost of power supply ---Depreciation, O&M, and fuel ---Necessary cost for future investment --New investment cost ---Construction cost ---Fundraising cost -Loss reduction --Reduction of technical loss ---Optimization of networks --Reduction of non-technical loss (Lessons and learning from neighboring countries are important.) ---Metering system or alternatives (e.g., prepaid card system)	Program C-1: Detailed road map for the institutional development -Establishment of the national power corporation (Mid-term target) --Roles, functions, and responsibility --Prospect for the balance of revenue and cost, and necessity of subsidies --Status of staff and employees -Introduction of IPPs (Mid- and long-term target) --Risk analysis and risk allocation --Power purchase agreement --Fuel supply agreement
Program A-2: Modernization of facilities -Optimization of network --Transmission and substations -Improvement of maintenance system --Computerization -Improvement of safety conditions --Safety code		Program C-2: Enhancement of organizational capacity -Road map for the institutional development --Revision of the vision: Structure of the industry ---Single- or multiple-buyer system??? ---Corporatization, equitization, or privatization??? ---Use of private energies (e.g., contract-out and BOT schemes) -Corporate governance --Finance and accounting --Rules of organizational management --Evaluation of staff performance --Motivation -Quality assurance

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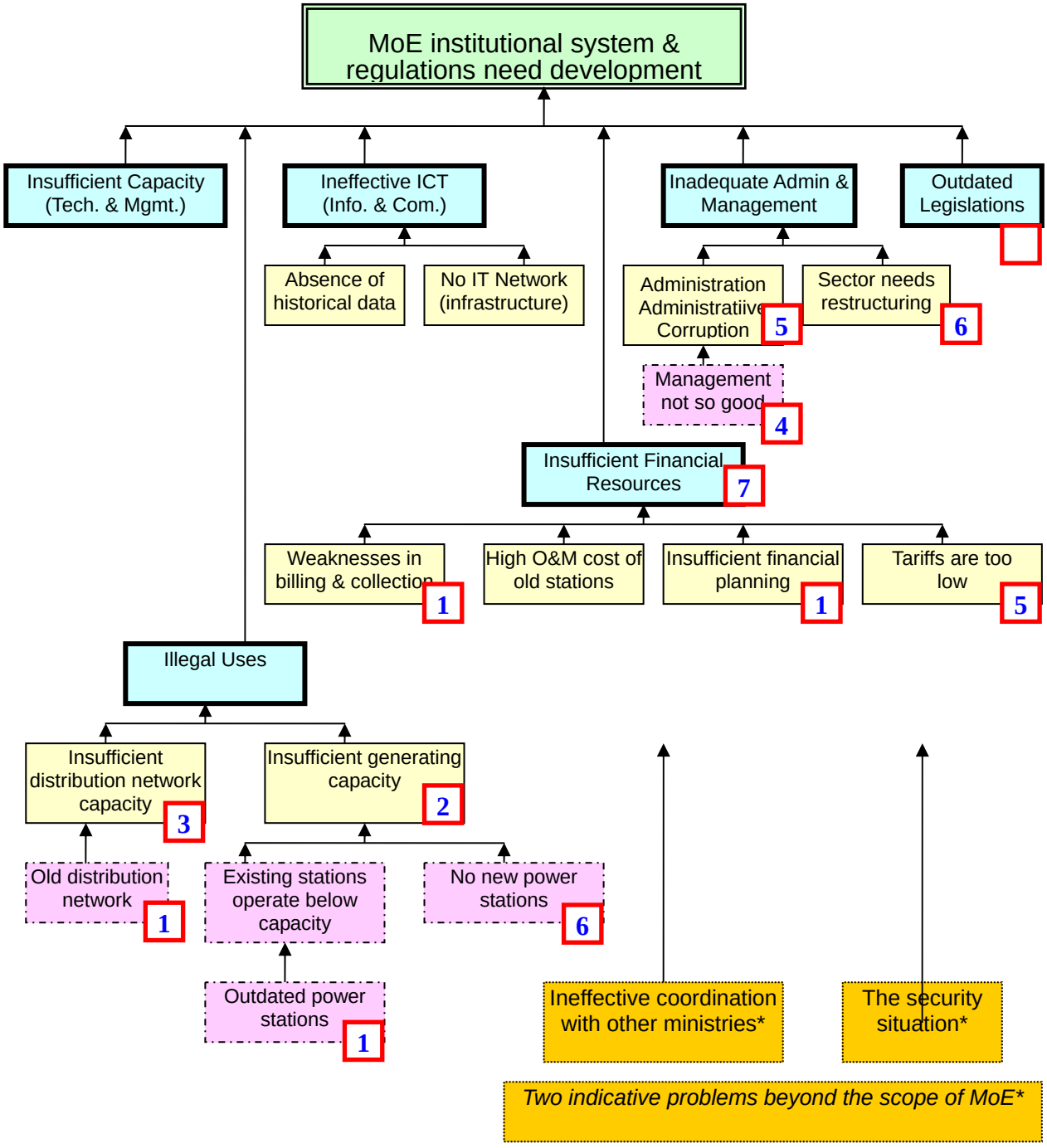
Annex 1: Tree of cause-and-effect analysis developed in the brainstorming discussion under in the first first-stage workshop.



Annex 2: Road map for the power industry institutional development