

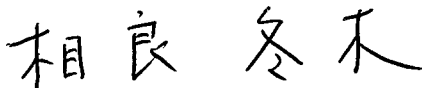
**MINUTES OF MEETING
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE
REPUBLIC OF PALAU
ON
TECHNICAL COOPERATION PROJECT FOR STUDY OF UPGRADING
AND MAINTENANCE OF THE NATIONAL ELECTRICAL POWER GRID
IN
THE REPUBLIC OF PALAU**

Japan International Cooperation Agency (hereinafter referred to as "JICA") has dispatched the Detailed Planning Survey Team (hereinafter referred to as "the Team") headed by Mr. Fuyuki Sagara to the Republic of Palau from 11th to 15th October, 2016 for the purpose of preparation of the technical cooperation regarding "The Project for Study of Upgrading and Maintenance of the National Electrical Power Grid in the Republic of Palau (hereinafter referred to as "the Project")".

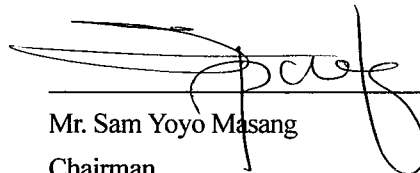
During its stay in Palau, the Team exchanged their opinions and had a series of discussions for the purpose of working out the framework and contents of the Project with the authorities concerned of Palau side.

As a result of the discussions, both sides agreed to the matters referred to in the document attached hereto as a supplement to the Record of Discussions (hereinafter referred to as "R/D").

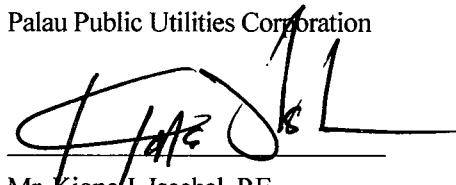
Koror, 14th October, 2016



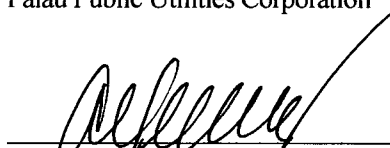
Mr. Fuyuki Sagara
Team Leader
The Detailed Planning Survey Team
Japan International cooperation Agency



Mr. Sam Yoyo Masang
Chairman
Board of Directors
Palau Public Utilities Corporation



Mr. Kione J. Isechal, P.E.
Chief Executive Officer
Palau Public Utilities Corporation



Mr. Charles I. Obichang
Minister
Ministry of Public Infrastructure,
industries and Commerce

THE ATTACHED DOCUMENT

This document has been prepared for the better understanding of the R/D to be agreed between Palau side and JICA. The main items that had been discussed and agreed upon by both sides are summarized as follows.

1. Status of the Project

The Government of Japan received official requests for the Project from the Government of the Republic of Palau in August, 2015, and this request was already adopted by the Government of Japan, then Note Verbales were exchanged in April, 2016 between the Government of Japan and the Government of the Republic of Palau.

2. Basic Concept of the Project

First of all, in order to prevent the fault on transmission/distribution lines, it is required to improve the existing practice for the operation & maintenance of power grid. Especially, since the frequent faults in Babeldaob Island are assumed to be caused by tree contact, periodical patrol and tree cutting shall be enforced. Secondly, rehabilitation of the aged/malfunctioned equipment shall be considered after the detail investigation of each equipment. Finally, construction of new substations, transmission/distribution lines (e.g. connecting 34.5 kV loop in Babeldaob) shall be implemented in case cost-effectiveness of the additional measures is ensured.

Above necessary steps are shared by both sides as a basic concept of the Project.

3. Draft of Record of Discussions

As a result of the discussions, both sides agreed on the draft of R/D, which stipulates the framework of the Project, as shown in Appendix I. After the approval of JICA headquarters, the R/D will be finalized and signed by the Palau side and JICA Palau Office.

4. Coordination of other authorities

Palau Public Utilities Corporation (hereinafter referred to as "PPUC") is the main counterpart of the Project. PPUC will coordinate with the Palau Energy Administration and other related authorities accordingly regarding the Project implementation.

5. Environmental and Social Consideration

Because the Project is categorized as "B" by the "JICA Guidelines for Environmental and Social Considerations (April 2010)", both sides agreed that a JICA consultant will be dispatched to Palau in December, 2016 for the study on environmental and social consideration as a part of the detailed planning survey in order to draft and agree on the TOR of Environmental and Social Consideration under the Project.

6. Modification of Title of the Project

The title of the Project was originally adopted as "The Project for Study of Upgrading and Maintenance of the National Electrical Power Grid". The Team, however, proposed to modify the title of the Project to "The Project for Study on Upgrading and Maintenance Improvement of National Power Grid". The Palau side agreed with the proposal.

epu

10/1

7. **Other Donors' Projects**

Palau side noticed that IRENA has been studying and collecting data in connection with wind potential, grid stability, and renewable energy. Palau side, therefore, is requested to share their information and data with JICA. Both sides understand that ADB and New Zealand also have possibilities of extending the support to energy sector in Palau, although they have not implemented them yet.

In this situation, in order to implement the Project in an effective and efficient manner, the Team requested Palau side to avoid the Project overlapped with other projects through the cooperation by other donors. The Palau side agreed to it.

8. **Disclosure of the Reports of the Project**

The team explained that the reports of the Project will be disclosed to the public in accordance with JICA's regulation. The Palau side acknowledged it.

Attachment Draft of R/D

相

epu

fat 平

DRAFT
RECORD OF DISCUSSIONS
ON
THE PROJECT FOR STUDY ON UPGRADING
AND MAINTENANCE IMPROVEMENT OF NATIONAL POWER GRID
IN
THE REPUBLIC OF PALAU

AGREED UPON BETWEEN
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE
REPUBLIC OF PALAU
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Koror [date]

Mr. Nobuaki Miyata
Resident Representative
Palau Office
Japan International Cooperation Agency

Mr. Sam Yoyo Masang
Chairman
Board of Directors
Palau Public Utilities Corporation

Mr. Kione J. Isechal, P.E.
Chief Executive Officer
Palau Public Utilities Corporation

Mr. Charles I. Obichang
Minister
Ministry of Public Infrastructure,
Industries and Commerce

In response to the official request of the Government of the Republic of Palau to the Government of Japan, the Japan International Cooperation Agency (hereinafter referred to as "JICA") held a series of discussions Palau Public Utilities Corporation (hereinafter referred to as "PPUC") and the related authorities to develop a detailed plan of the the Project for Study on Upgrading and Maintenance Improvement of the National Power Grid in the Republic of Palau (hereinafter referred to as "the Project").

Both sides agreed the details of the Project and the main points discussed as described in the Appendix 1 and the Appendix 2 respectively.

Both sides also agreed that PPUC, the main counterpart to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of the Republic of Palau.

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on 10th February, 2015 (hereinafter referred to as "the Agreement") and the Note Verbales exchanged on 14th April, 2016 between the Government of the Republic of Palau and the Government of Japan.

Appendix 1: Project Description
Appendix 2: Main Points Discussed

PROJECT DESCRIPTION

I. BACKGROUND

The electrical power system in Palau consists of five diesel power plants, several substation, transmission and distribution systems all managed and operated by PPUC. PPUC has been operating the national electric power system since 1982, which now covers about 47 linear miles of 34.5 KV transmission and 114 linear miles of 13.8 KV distribution lines. PPUC has a current power capacity of slightly over 28 MW with power plants located at Malakal (Koror), Aimeliik, Peleliu, Angaur and Kayangel. The Malakal and Aimeliik Power Plants provide power to the central grid supplying Koror, Melekeok – the capital city, and the rest of Babeldaob. The peak demand is usually between 11 to 12 MW.

In terms of the issues on power transmission and distribution system, the faults accidents have frequently occurred in the island of Babeldaob. The equipment of each substation has been significantly aging in the island of Babeldaob in connection with the cause of power outage, and maintenance and inspection have not been implemented regularly. Many faults on power transmission and distribution lines are assumed to be caused by trees contact, inadequacy of protective relay coordination, and insulation failure of bushing. PPUC, therefore, requires taking immediate measures in order to prevent the power outage.

PPUC is also in the process of the project planning to rehabilitate its power transmission/distribution infrastructure. This includes the relocation of transmission/distribution lines on the island of Babeldaob that currently goes off the Compact road alignment and the construction of 34.5 KV loop transmission lines.

Furthermore, the Government of the Republic of Palau has target of renewable energy installation as 20 % by 2020 and 45% by 2025. The facilities using renewable energy that is larger output fluctuation has recently increasing. Therefore, a reliable electrical grid system will be necessary to integrate additional renewable electrical energy without destabilizing the power grid.

From such a perspective, construction of reliable power transmission and distribution system in accordance with the verification of the possible introduction of renewable energy is urgent issue in Palau. Under this background, the Government of the Republic of Palau has requested technical cooperation for the development of master plan for upgrading and enhancement of power transmission and distribution facilities in consideration of the introduction of grid-connected renewable energy.

II. OUTLINE OF THE PROJECT

1. Title of the Project

The Project for Study on Upgrading and Maintenance Improvement of National Power Grid

2. Expected Goals which will be attained after completion of the Project

To upgrade and enhance the Palau's National Electrical Power grid with proper integration of sustainable renewable energy

3. Outputs

- (1) Master plan of the transmission and distribution system for the year 2030 is prepared and the roadmap of the introduction of sustainable renewable energy is revised.
- (2) Technical assistance for the reinforcement of operation & maintenance of transmission/distribution lines is conducted and the necessary technical transfer is completed.

4. Activities

- (1) Collection and analysis of existing data and information

The following data and information will be collected and analyzed.

- 1) National policies, relevant laws and regulations, and institutional frameworks on electric power sector
- 2) Socio-economic situation and development plan in Palau
- 3) Electric power sector in Palau
 - a. Current situation of electric power demand and supply
 - b. Current situation of power generation plants and power systems,
 - c. Existing power development plan
 - d. Electricity tariff and fossil fuel price
 - e. Primary energy potential (Renewable energy and fossil fuel)
 - f. Assistance Projects/Programs by other international organizations

- (2) Power demand forecast

The following demand forecast study will be conducted.

- 1) Review of the existing power demand forecast
- 2) Review of the economic development policies, economic growth forecast and development plan
- 3) Study on demand side management including the power demand analysis for water and sewer pumps
- 4) Power demand forecast

- (3) Setting of Power System Development plan

The following study will be conducted to set up power system development plan.

- 1) Review and update on power development plan
- 2) Review of current situation and future development plan of renewable energy
- 3) Updating of road map for the introduction of renewable energy with following investigations;
 - a) Consideration of both short & long-term output fluctuation
 - b) Necessary measures for grid stabilization, including the utilization of water pumping system (supply and sewage)
 - c) Initial assessment of introducing smart grid/ smart meter
 - d) Technical transfer of the above investigation for grid stabilization
- 4) Study on transmission and distribution system expansion plan including analysis and recommendation to improve the system resiliency against weather
- 5) Strategic Environment Assessment
- 6) Study on measures for sustainable management of PPUC, including utility rates, etc.
- 7) Estimation of financial investment and an investment schedule with

recommendation on sources and methodologies of funding

(4) Pre-feasibility Study

The following study will be conducted for pre-feasibility study of prioritized projects to be recommended as a result of the power system development plan. Around 5 (five) projects will be prioritized.

- 1) Preliminary design for priority project
- 2) Recommendation on environmental and social considerations
- 3) Financial analysis
- 4) Recommendation on sources and methodologies of funding

(5) Technical Transfer to Palauan Counterpart Personnel

- 1) Selection of pilot site in the high priority area from Ngarchelong, Ngchesar, and Aimeliik states that occur frequently power outage for matters related to consideration and implementation of preventive measures against power outage and electrical accidents
- 2) Preparation of technical guideline and recommendation on enhancement of O&M of the transmission and distribution system at the pilot site
- 3) Preparation of necessary manual for O&M of the transmission and distribution power system
- 4) Procurement of necessary measurement equipment and tools for the implementation of recommended practice
- 5) Confirmation of the result and continuous improvement of the above measures

5. Input

(1) Input by JICA

1) Dispatch of experts (tentative only and assignment member is to be determined later)

- Leader/ Power System Planning
 - Power System Analysis
 - Distribution System
 - Substation
 - Integration of renewable energy, grid stabilization
 - Environmental and Social Consideration
 - Economical & Financial Analysis
- 2) Training Equipment in accordance with necessity activities

Input other than indicated above will be determined through mutual consultations among JICA and PPUC during the implementation of the Project, as necessary.

(2) Input by PPUC

PPUC will take necessary measures to provide at its own expense:

- Services of PPUC's counterpart personnel and administrative personnel as referred to in II-7;
- Suitable office space with necessary equipment;
- Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA;

- Information as well as support in obtaining medical service;
- Credentials or identification cards;
- Available data (including maps and photographs) and information related to the Project;
- Running expenses necessary for the implementation of the Project;
- Expenses necessary for transportation within Palau of the equipment referred to in II-5 (1) (2) as well as for the installation, operation and maintenance thereof;

6. Implementation Structure

The relevant organizations and project members are as follows:

(1) PPUC

- Chief Executive Officer
- Manager, Power Generation Department
- Manager, System Control Department
- Manager, Renewable Energy Department
- Manager, Power Distribution Department
- Manager, Project Planning Implementation Department
- Relevant Departments

(2) Palau Energy Administration

- Director

(3) JICA Experts

The JICA experts will give necessary technical guidance, advice and recommendations to Palau side on any matters pertaining to the implementation of the Project.

7. Project Sites

- Islands of Babeldaob, Koror, and Malakal
- Beneficiaries: PPUC, Palau Energy Administration and local residents and visitors in Koror – Babeldaob power grid

8. Duration

The project duration is 18 months.

9. Reports

The members of the JICA experts will prepare and submit the following reports to the Palau side in English.

- (1) Ten (10) hard copies and soft copy of Inception Report at the commencement of the first work period in Palau
- (2) Ten (10) hard copies and soft copy of Progress Report
- (3) Ten (10) hard copies and soft copy of Draft Final Report at the end of the last work period in Palau
- (4) Ten (10) hard copies and soft copy of Final Report within one (1) month after the receipt of the comments of the Palau side on the Draft Final Report

10. Environmental and Social Considerations

Palau side agreed to abide by 'JICA Guidelines for Environmental and Social

Considerations' in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.

III. UNDERTAKINGS OF THE PALAU SIDE

1. Palau side will take necessary measures to:

- (1) ensure that the technologies and knowledge acquired by the Palau nationals as a result of Japanese technical cooperation contributes to the economic and social development of Palau, and that the knowledge and experience acquired by the personnel of Palau from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to the members of the JICA experts referred to in II-5 (1) above and their families, which are no less favourable than those granted to experts of third countries performing similar missions in Palau under the Colombo Plan Technical Cooperation scheme.

IV. MONITORING AND EVALUATION

JICA will conduct the following evaluations and surveys to mainly verify sustainability and impact of the Project and draw lessons. The Palau side is required to provide necessary support for them.

1. Ex-post evaluation three (3) years after the project completion, in principle
2. Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, the Palau side will take appropriate measures to make the Project widely known to the people of Palau.

VI. MISCONDUCT

If JICA receives information related to suspected corrupt or fraudulent practices in the implementation of the Project, the Palau side will provide JICA with such information as JICA may reasonably request, including information related to any concerned official of the government and/ or public organizations of Palau. The Palau side will not unfairly or unfavorably treat the person and/ or company which provided the information related to suspected corrupt or fraudulent practices in the implementation of the Project.

VII. MUTUAL CONSULTATION

JICA and the Palau side will consult each other whenever any major issue arises in the course of the Project implementation.

VIII. AMENDMENTS

The Record of Discussions may be amended by the minutes of meetings between JICA and the Palau side. The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the Record of Discussions.

MAIN POINTS DISCUSSED

(To be filled in accordance with the Minutes of Meetings)

Ja

im

FSE P