

RECORD OF DISCUSSIONS

FOR

MASTER PLAN FOR ENERGY TRANSITION MANAGEMENT PROJECT

AGREED UPON BETWEEN

PT PLN (Persero)

OF

REPUBLIC OF INDONESIA

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

Dated August 30 2023

Based on the minutes of meetings on the Detailed Planning Survey for the Master Plan for Energy Transition Management Project (hereinafter referred to as “the Project”) signed on [May 26 , 2023] between PT PLN (Persero) (hereinafter referred to as “the Counterpart”) and the Japan International Cooperation Agency (hereinafter referred to as “JICA”), JICA held a series of discussions with the Counterpart and relevant organizations to develop a detailed plan of the Project.

The purpose of this record of discussions (hereinafter referred to as “the R/D”) is to establish a mutual agreement for its implementation by both parties and to agree on the detailed plan of the Project and as described in the followings and the Annex1, 2, and 3.

The Counterpart 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 Republic of Indonesia.

Both parties also agreed that the Project will be implemented in accordance with the “Basic Principles for Technical Cooperation” published in January, 2022 (hereinafter referred to as “the BP”), unless other arrangements are agreed in the R/D.

The R/D is delivered at Jakarta as of the day and year first above written. The R/D, except Annex 4 and 5 may be amended by a minutes of meetings between both parties. The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the R/D.

The Project will be implemented within the framework of the Colombo Plan Technical Cooperation Scheme between the Government of Japan and the Government of Indonesia (hereinafter referred to as “GOI”).

For
JAPAN INTERNATIONAL
COOPERATION AGENCY

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for

Chief Representative
JICA Indonesia Office

For
PT PLN (Persero)



Director
Transmission and System Planning
PLN

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Witness

For



Director of Electricity Program Supervision
Directorate General of Electricity
Ministry of Energy and Mineral Resources

- Annex 1 Project Description
- Annex 2 Main Points Discussed
- Annex 3 Draft of TOR for environmental and social considerations studies
- Annex 4 Implementation Structure
- Annex 5 List of Proposed Members of Joint Coordinating Committee

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PROJECT DESCRIPTION

(1) Title of the Project

Master Plan for Energy Transition Management Project

(2) Overall Goal

To realize stable, reliable, affordable and sustainable power supply with achievement of the de-carbonization by 2060 in Indonesia.

(3) Project Purpose

To formulate the master plan especially for thermal power plants to achieve stable, reliable, affordable and sustainable power supply toward 2060.

(4) Period of the Project

October 2023 – October 2025 (2 years)

(5) Implementing Agency

Indonesia National Electricity Company (PT PLN)

(6) Project Inputs (Japanese Side, any important inputs)

1) Input by Japanese side

- Japanese Experts

- ✓ Chief advisor / Power Development Plan
- ✓ De-carbonization technology (CC(U)S, ammonia, hydrogen and biomass)
- ✓ Fuel procurement plan (Coal / LNG and Hydrogen / ammonia)
- ✓ CCS development plan
- ✓ Renewable energy and energy management (storage battery)
- ✓ Demand forecast
- ✓ Power system planning/analysis
- ✓ Low-carbon energy policy / investment planning (Tariff analysis)
- ✓ Economic and financial analysis / investment planning (Tariff analysis)
- ✓ Environmental and social considerations

- Training in Japan including travel expenses

- ✓ Training for MP formulation/Demand forecast/Power system analysis (Once)
- ✓ Training for Decarbonized thermal power technology (Once)

2) Input by Indonesia side

- Placement of counterparts
- Establishment of Committee and Technical Working Group (TWG)
- Project Office space for the Experts
- Personnel expense of counterparts
- Available data and information for the Project

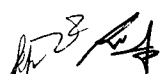
(7) Outputs

- To review the carbon neutrality road map toward 2060
- To formulate demand forecast and power system planning
- To formulate a master plan for thermal power plants along with the road map
- To formulate the action plans to realize the master plan
- To build up PLN's knowledge and practical capability of de-carbonization technology and application to the thermal power plants

Note: The targeted thermal power plants are basically focused on thermal power plants related to PLN or PLN owned subsidiary.

(8) Activities

- 1.1 Review and analysis of energy policy / existing plans (power development plan, new power development plan, power grid plan, etc.)
 - 1.2 Review and analysis of Power demand forecast
 - 1.3 Review and analysis of renewable energy potential
 - 1.4 Review and analysis of power supply and demand balance scenario
 - 1.5 Review and analysis of power supply configuration
 - 1.6 Organizing issues to achieve the power supply configuration
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- 2.1 Formulate more practical demand forecast considering followings:
 - ✓ Increase of Roof top generation
 - ✓ Increase of Energy efficiency
 - ✓ Increase of EV introduction
 - 2.2 Power system analysis and planning
 - 2.3 Optimal power system operation with high ratio of VRE (Variable Renewable Energy)
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- 3.1 Analysis of the existing power plants and grid systems
 - 3.2 Examination of optimal power supply placement based on system analysis
 - 3.3 Implementation of Strategic Environmental Assessment
 - 3.4 Formulation of low (de) carbonization plan for power generation mix
 - 3.5 Zero emission thermal power development plan (assuming future utilization of CCS,



hydrogen and ammonia)

3.6 Plan of fuel procurement

3.7 Formation of long-term power grid development

3.8 Organizing issues and policy recommendations to realize the master plan

4.1 Setting goals (Overall (Upper) goals, T/C Project goals, Results)

4.2 Selection of implementation point / period for T/C Project

4.3 Formulation of the program (activity / output / input) for T/C Project

5.1 Local workshop

5.2 Implementation of skill training

5.3 Site visit (training in Japan)

(9) Environmental and Social Considerations (B)

(under the 'JICA Guidelines for Environmental and Social Considerations (January 2022)')

MAIN POINTS DISCUSSED

1. Background

Indonesia government submitted Long Term Strategy for Low Carbon and Climate Resilience 2050 (LTS) to UNFCCC (United Nations Framework Convention on Climate Change) in July 2021 and stated that Indonesia would make efforts to achieve carbon neutrality by 2060 or earlier in LTS. On the other hand, Indonesia depends strongly on coal-fired power generation, hence there are concerns about an increase in greenhouse gas emissions as the demand increases in the future.

JICA conducted the Data Collection Survey on Power Sector in Indonesia for De-carbonization from November 2021 to March 2022 and proposed the optimal roadmap toward 2060, which was economic, stable and low technological risk, to achieve carbon neutrality.

In this study, the following suggestions were obtained for the formation of optimum power configuration for carbon neutrality.

- Renewable energy should be introduced as much as possible, however 100% renewable energy scenario is very expensive due to the needs of enhancement of power transmissions and installation of a large amount of storage batteries.
- Thermal power generation is necessary to complement the unstable and variable renewable energy.
- It will be difficult to develop coal fired power plants in the future, except for some projects already committed, along with the international trend toward carbon neutrality.
- It is assumed that hydrogen or ammonia thermal power generation would be most economical in 2060, and during the transition period, LNG thermal with low emissions would be an important role from the stable power supply perspective. Carbon neutrality can be achieved by promoting the various technology such as hydrogen / ammonia-firing CCS, which can diversify the technological risk, while installing the LNG power plants during the transition period.

Based on the above suggestions, it is necessary to decarbonize existing and new thermal power plants in Indonesia while utilizing multiple options according to the progress of technical development, site characteristics and grid system characteristics. It is also important to organize the basic concept as a master plan and proceed with the facility development along with the master plan.

At present, there is no master plan for thermal power generation with an eye on future de-carbonization in Indonesia and it is urgent matter to develop it by incorporating new technology and knowledge in Japan that is promoting the demonstration and implementation of zero-emission thermal power ahead of countries.

2. Official Request made by GOI

To cope with the above issues, the Government of the Republic of Indonesia (hereinafter referred to as "GOI") requested the Government of Japan (hereinafter referred to as "GOJ") the technical cooperation project for the purpose of formulating Master Plan for energy transition management especially for thermal power plant to achieve carbon neutrality by 2060 or earlier. Accordingly, the project was approved by the GOJ in March 21 2023 as "Master Plan for Energy Transition Management Project".

3. Annex4 and 5

Both parties agreed on the contents of Annex4 and 5, which is categorized as references of the R/D. Both parties further agreed that the contents of Annex4 and 5 may be modified by mutual confirmation such as determination of monitoring sheets or minutes of meetings usually after Joint Coordinating Committee.

4. Environmental and Social Considerations

With regard to the Section 10.1 of the BP, since the Project is categorized as "B" under the 'JICA Guidelines for Environmental and Social Considerations (January 2022)' (hereinafter referred to as "the Guideline"), the necessary procedures are taken in accordance with the Guideline. Some examples include;

(1) Strategic Environmental Assessment

The Project conducts Strategic Environmental Assessment in accordance with the Guideline. The draft terms of reference is indicated in the Annex 3.

(2) Disclosure of the information regarding environmental and social considerations

Both parties agreed that JICA discloses the front page of the R/D and drafts of TOR for environmental and social considerations studies attached as Annex 3 as agreement documents designated by the 3.3.2.7 of the Guideline. The front page of the R/D and drafts of TOR are disclosed on JICA's website promptly after concluding the R/D.

5. Gender Equality and Women's Empowerment

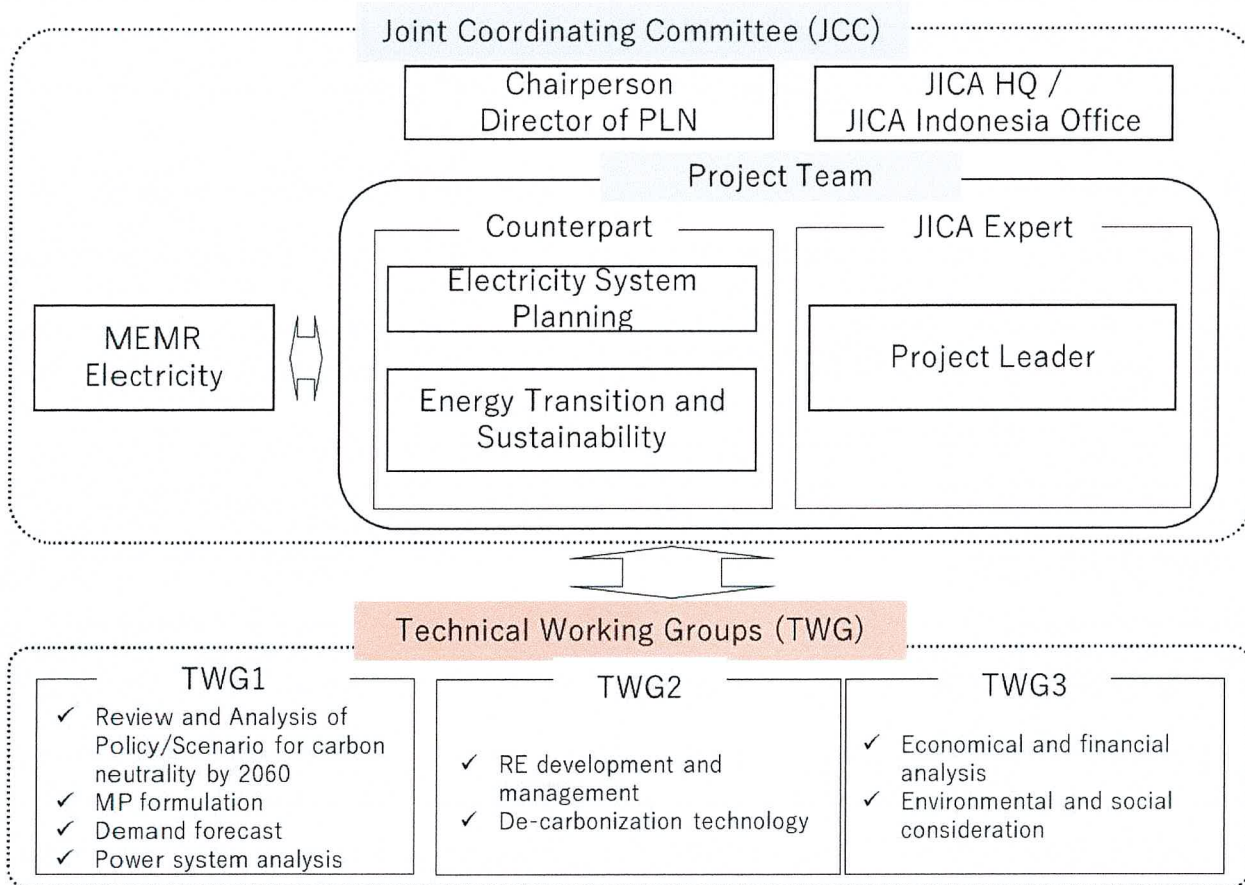
Both parties confirmed that activities to promote gender equality and women's empowerment should be duly practiced for the Project implementation.

**[DRAFT] TERMS OF REFERENCE OF
ENVIRONMENTAL AND SOCIAL CONSIDERATIONS STUDIES
(JICA Guidelines Item 3 of the Section 3.3.2)**

1. In the environmental and social considerations study of this Project, the concept of Strategic Environmental Assessment (hereinafter referred to as "SEA") shall be applied, based on JICA Guidelines for Environmental and Social Considerations (January 2022) (hereinafter referred to as "JICA Guidelines"), 'Government Regulation No. 22 of 2021 : Environmental Protection and Management', 'Government Regulation No. 46 of 2016 : Procedure of SEA' which are the main framework on environmental conservation/assessment, and SEA in Indonesia, and other relevant Indonesian legal framework.
2. This document describes a draft framework of the terms of reference for SEA for the Project. The contents of the document are tentative and subject to change. The details of the SEA shall be discussed through the process of Project implementation.
The SEA is environmental assessment at Policy (P), Planning (P), and Program (P), (PPP) level. It has a profound significance in the plans for proactive environmental and social considerations into the higher levels of decision-making processes by early warning on environmental and social impacts, broad and long-term perspective.
3. Main items of the environmental and social considerations study shall include, but not limited to, the followings.
 - (1) Review the goals/objectives for energy development planning
 - (2) Review the contents of the existing policies/plans/programs and examine the issues on environmental and social aspects for energy development planning
 - (3) Identify legal framework and institutions of Republic of Indonesia on environmental and social considerations, and SEA cases in Indonesia
 - 1) Laws, regulations, and standards related to environmental and social considerations (e.g. those related to SEA, environmental and social impact assessment, resettlement, land acquisition, public participation, information disclosure).
 - 2) Gaps between the JICA Guidelines and the legal framework of Republic of Indonesia on environmental and social considerations and how they will be filled in the Project.
 - 3) Organizations responsible for implementation of environmental and social considerations including SEA.
 - 4) SEA cases implemented in Indonesia

- (4) Confirm whether the Project is subject to SEA by the laws in Indonesia.
- (5) Examine the methods to implement SEA for the Project
- (6) Conduct comparative analysis of alternatives to realize the goals/objectives
- (7) Conduct scoping (clarify crucially important items on environmental and social impacts and its evaluation methods to be taken into account in the decision making such as policy, plan, and program levels)
- (8) Identify baseline data on existing environmental and social conditions of the target area (e.g. land use, environmental pollution, natural environment, socio-economic situation, socio-cultural environment, lifestyle of indigenous people and communities)
- (9) Predict and evaluate potential impacts, and compare with alternatives including "without project option" and "zero option", and select the optimal plan.
- (10) Identify measures to mitigate the impacts in the optional plan (i.e. measures to avoid, minimize, or compensate the negative impacts)
- (11) Identify monitoring methods based on the mitigation measures.
- (12) Conduct consultations with local stakeholders, based on stakeholder analyses. The results of consultations should be reflected in the project plan.

Implementation Structure



- ✧ MEMR: Ministry of Energy and Mineral Resources
- ✧ RE: Renewable Energy

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List of Proposed Members of Joint Coordinating Committee

1. Function

The Joint Coordinating Committee (hereinafter referred to as "JCC") will be held at least once a year and whenever the necessity arises. The main functions of JCC shall be as follows:

- (1) To approve the annual operational work plans of the Project based on the tentative schedule of implementation within the framework of the Record of Discussions (R/D).
- (2) To conduct evaluation of the Project
- (3) To review the overall progress and achievements of the Project.
- (4) To revise the overall plan of the Project when necessary.
- (5) To examine major issues arising from or in connection with the Project.
- (6) To work out the modification of activities depending on the necessity.

2. Composition

(1) Chairperson: Director (Transmission and System Planning) of PLN

(2) Project Team

- 1) Project Director: Director (Transmission and System Planning) of PLN
- 2) Project Manager: VP (RUPTL Controlling / Energy Transition and Climate Change) of PLN
- 3) JICA Experts
- 4) Personnel from the Counterpart
- 5) Others whom are to be agreed by the Counterpart and JICA

(3) Other members from Indonesia side

- 1) Ministry of Energy and Mineral Resources (MEMR), Director General of Electricity
- 2) Other persons that Indonesia side might consider necessary

(4) Other members from Japanese side:

- 1) Chief Representative, representative and staff of JICA Indonesia Office
- 2) Staff from JICA Headquarters
- 3) Staff from the Embassy of Japan
- 4) Other persons that Japanese side might consider necessary

BASIC PRINCIPLES

FOR

TECHNICAL COOPERATION

January, 2022

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

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Basic Principles for Technical Cooperation

I. Introduction

Section 1.1 Introduction

The purpose of the Basic Principles for Technical Cooperation (hereinafter referred to as "the BP") is to set forth the basic principles generally applicable to Technical Cooperation Project and Technical Cooperation for Development Planning implemented jointly by the Japan International Cooperation Agency and the implementing agency of the recipient country (hereinafter referred to as "Technical Cooperation"), which consists of the record of discussions (hereinafter referred to as "the R/D") agreed upon between the Japan International Cooperation Agency (hereinafter referred to as "JICA") and the implementing agency of the recipient country (hereinafter referred to as "the Counterpart").

Section 1.2 Inconsistency with the R/D

If any contents of the BP is inconsistent with any contents of the R/D, such contents of the R/D will prevail.

II. Definition of Technical Cooperation

Section 2.1 Technical Cooperation

Technical Cooperation supports human resource development, research and development, technology dissemination and the development of institutional frameworks essential for the development of economies and societies in the recipient country.

Section 2.2 Technical Cooperation Project

Technical Cooperation Project refers to a systematic and comprehensive project implementation to attain certain outcomes within certain time period, in which input includes, but not limited to, the dispatch of members of JICA missions and/or JICA experts, acceptance of training participants, and/or provision of equipment from JICA.

Section 2.3 Technical Cooperation for Development Planning

In Technical Cooperation for Development Planning, JICA conducts necessary studies to support the recipient country to formulate policies and master plans, by dispatching members of JICA missions. Based on the results of this cooperation, the recipient country is expected to formulate plans for sector/regional development or rehabilitation/reconstruction by utilizing the results, to implement plans by raising funds from international organizations and others, and/or to carry out the recommended organizational/institutional reforms and other proposed activities.

Main tasks are to discuss on the progress and major issues that arise during the implementation of Technical Cooperation for Development Planning.

IV. Undertakings of the Counterpart

Section 4.1 Grant of Privileges, Exemptions, Benefits to JICA, the members of JICA missions and the JICA experts

The Counterpart and the government of the recipient country will take necessary measures to grant JICA, the members of JICA missions and the JICA experts privileges, exemptions and benefits in accordance with international agreements concluded between the government of Japan and the government of the recipient country.

Section 4.2 Provision of Conveniences for the members of JICA missions and the JICA experts

The Counterpart and the government of the recipient country will take necessary measures to provide conveniences listed hereto at its own expense;

- (1) Information as well as support in acquiring suitable furnished accommodation for the JICA experts and their families;
- (2) Information as well as support in obtaining medical service for the members of JICA missions, the JICA experts and their families; and
- (3) Credentials or identification cards as necessary to the members of JICA missions and the JICA experts.

Section 4.3 Provision of Services, Facilities and Local-Cost Bearing for the Technical Cooperation

The Counterpart and the government of the recipient country will take necessary measures to provide services, facilities and local-cost bearing listed hereto at its own expense;

- (1) Services of the Counterpart's personnel;
- (2) Suitable office space for the Project Team with necessary equipment;
- (3) Running expenses necessary for the implementation of Technical Cooperation;
- (4) Expenses necessary for transportation within the recipient country of the equipment provided by JICA for Technical Cooperation Project as well as for the installation, operation and maintenance thereof;
- (5) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of Technical Cooperation other than those prepared and provided by JICA;
- (6) Travel allowances for the Project Team for official travel within the recipient country; and
- (7) Available data (including maps and photographs) and information

VII. Ownership of Equipment, Machinery, and Materials

Section 7.1 Equipment, Machinery, and Materials provided by JICA

The equipment, machinery and materials provided by JICA will become the property of the Counterpart or competent authorities of the recipient country upon being delivered to the Counterpart or the authorities.

Section 7.2 Equipment, Machinery, and Materials owned by JICA

The equipment, machinery and materials prepared by JICA for the performance of duties of the members of JICA missions and the JICA experts will remain the property of JICA unless a separate arrangement is agreed between JICA and the Counterpart or competent authorities of the recipient country.

VIII. Construction of Pilot Facility

Section 8.1 Ownership of Pilot Facility

When a pilot facility is constructed in Technical Cooperation, based on a separate arrangement to be agreed between the relevant parties, JICA will provide necessary services for constructing the pilot facility for Technical Cooperation throughout the implementation period. Upon the completion of the construction, the pilot facility will become a property of the Counterpart or competent authorities of the recipient country. The Counterpart or the authorities will ensure proper and effective operation and maintenance of the pilot facility.

Section 8.2 Safety Management of Construction

JICA and the Counterpart will assure safety management of the construction in accordance with 'the Guidance for the Management of Safety for Construction Works in Japanese ODA Projects'.

IX. Public Relations

Section 9.1 Promotion of Public Support

For the purpose of promoting support for Technical Cooperation, JICA and the Counterpart will take appropriate measures to make Technical Cooperation widely known to the people of Japan and the recipient country.