PT PLN (Persero)

East Java – Bali Power Distribution Strengthening Project

Environmental & Social Management Planning Framework

(Version for Disclosure)

January 2020

BASIC INFORMATION

1. Country and Project Name:
Indonesia – East Java & Bali Power Distribution Strengthening Project

2. Project Development Objective:
The expansion of the distribution network comprises erection of new poles, cable stringing, and installation of distribution transformers.

3. Expected Project Benefits:
Construction of about 17,000 km distribution lines and installation of distribution transformers in East Java and Bali

4. Identified Project Environmental and Social Risks:
Social Risks. It is envisaged that this project will require (i) use of no more than 0.2 m^2 of land for installation of concrete poles and approximately 4m^2 for installation of transformers (either in cabinet of between two concrete poles or on one pole); limited directional drilling (approx. 200-300m) to run cables under major roads and limited trenching (usually less than 500m) in urban environments, and (iii) possible removal of non-land assets (primarily trimming or felling of trees) for stringing of conductors. While restrictions on land use within the existing right of way apply, the land requirements for the distribution network (lines and transformers) are considered manageable with normal mitigation measures. Project activities will not (i) require land acquisition, (ii) cause physical or economic displacement; and/or (ii) result in adverse impacts to Indigenous Peoples groups and/or members of ethnic minorities.

Environmental risks are principally induced by the establishment of the network across natural habitats and potential impact on fauna (in particular avifauna and terrestrial fauna susceptible to access the distribution lines or transformers such as monkeys or other tree dwelling scavenging animals that frequent semi urban environments), and the management of waste (e.g. end-of-life transformers, in particular the mineral oil they contain). During construction phase, construction and maintenance activities present significant occupational health and safety risks to Project Workers (including Company employees, contractors and sub-contractors), as well as potentially resulting in nuisances to communities (temporary nuisances during construction and visual nuisance while installed), as well as presenting risks to communities in case of unplanned event (e.g. fall of pole during weather event). Throughout the operational phase, the restrictions of activities, buildings and any other objects within the right of way are based on PLN regulation of the safe distance for distribution power.

Overall, risks of the Project are deemed limited, not unprecedented, localized and easily manageable.

The Environmental & Social Management Planning Framework (ESMPF) has been prepared based on a review of the applicable AIIB Environmental and Social Policy, an overall review of the AIIB's Environmental and Social Policy, Indonesian regulatory requirements and the environmental & social policies and best practices of PLN as applicable to the Project and the description of the proposed activities to be financed by AIIB. The ESMPF includes:

- A description of the various Project components
- An overview of the applicable AIIB and regulatory environmental and social (E&S) requirements
- An overview of the E&S baseline conditions in Bali and East Java
- An assessment of potential environmental and social impacts of different project components and sub-components, and
- Environmental and social mitigation policy and practice in different ongoing and completed projects.

The ESMPF is a Project-level document that provides guidelines for the preparation of studies for PLN to conduct on the various sub projects, which identifies proposed measures to avoid, minimize and manage environmental and social impacts in line with relevant Indonesian environmental and social legislation and the AIIB's Environmental and Social Policy, including the applicable Environmental and Social Standards, once the sub-project specific sites and routes locations have been identified.

The sub-projects comprise the following activities taking place in defined study areas and for which AIIB funds are sought:

- Delivery to site and temporary storage at site of material, including transformers, distribution power lines, piles, etc.
- Installation/upgrading of the distribution network, including clearing of the right of way; civil works (foundation digging for poles, and in some instances trenching and/or boring); erection of poles; stringing of power lines; installation/replacement of transformers;
- Storage, handling and disposal of end-of-life transformers;
- Connection to the network and to households (including installation of customer meter boxes and circuit breakers); and
- Maintenance (vegetation clearance, etc.)

Any incident (unplanned event) that may occur during these activities and lead to environmental, health and safety or social risk or impact on receptors, such as traffic accident, spills or leakages, uncontrolled discharges in the environment, damage to structure or accident on people due to fall of poles, etc.

Each sub-project will be located within a limited geographic area in the provinces of Bali and East Java, and the Project will comprise many such sub-projects that may or may not be adjacent, and that will be carried out over a period of 5 (five) years. Associated facilities comprise the PLN and third party owned and managed material and waste storage facilities.

EXECUTIVE SUMMARY

Background. The Asian Infrastructure Investment Bank (AIIB, the Bank) is considering lending to Perusahaan Listrik Negara ("PLN" or "The Company"), Indonesia's State Electricity Company. Specifically, AIIB is considering financing the construction of about 17,000 km distribution lines and installation of distribution transformers in East Java and Bali. The Project will support the increased access and improved quality of power distribution through infrastructure development in line with the objectives and targets of the first five years of Indonesia's Electricity Business Plan 2019-2028 (RUPTL) in the East Java and Bali regions. The Project will also support ongoing program of PLN to reduce distribution losses.

The Environmental & Social Management Planning Framework (ESMPF) has been prepared by PT PLN (Persero). The ESMPF has been prepared based on an overall review of the AIIB's Environmental and Social Policy, Indonesian regulatory requirements and the environmental & social policies and best practices of PLN as applicable to the Project. It includes:

a. A description of the various Project components;
b. An overview of the applicable AIIB and regulatory environmental and social (E&S) requirements;
c. An overview of the E&S baseline conditions in Bali and East Java;
d. An assessment of potential environmental and social impacts of different project components and sub-components; and
e. Environmental and social mitigation policy and practice in different ongoing and completed projects.

The ESMPF is a Project-level document that provides guidelines for the preparation of studies for PLN to conduct on the various sub-projects, which identifies proposed measures to avoid, minimize and manage environmental and social impacts in line with relevant Indonesian environmental and social legislation and the AIIB's Environmental and Social Policy, including the applicable Environmental and Social Standards, once the sub-project specific sites and routes locations have been identified.

The Project. Indonesia – East Java & Bali Power Distribution Strengthening Project comprises the expansion of the distribution network, including erection of new poles, cable stringing, trenching and cable burial in urban environment, and installation of distribution transformers. It covers construction of about 17,000 km distribution lines and installation of distribution transformers in East Java and Bali. The scope of works of the power distribution strengthening activities leads all the way to home connection including but not limited to construction/installation of medium-voltage (MV) distribution lines, Low-voltage (LV) distribution lines, distribution transformer, customer connection & meter replacement, Medium Voltage (MV) switch (LBS and Rec), MV cubicle (Distribution) and MV cubicle (Substation).

The sub-projects comprise the following activities taking place in defined study areas and for which AIIB funds are sought:

a. Delivery to site and temporary storage at site of material, including transformers, distribution power lines, piles, etc.
b. Installation/upgrading of the distribution network, including clearing of the right of way; civil works (foundation digging for poles, and in some instances trenching and/or boring); erection of poles; stringing of power lines; installation/ replacement of transformers;
c. Storage, handling and disposal of end-of-life transformers;
d. Connection to the network and to households (including installation of customer

meter boxes and circuit breakers); and
e. Maintenance of distribution line (vegetation clearance, etc.)

Any incident (unplanned event) that may occur during these activities and lead to environmental, health and safety or social risk or impact on receptors, such as traffic accident, spills or leakages, uncontrolled discharges in the environment, damage to structure or accident on people due to fall of poles, etc.

Each sub-project will be located within a limited geographic area in the provinces of Bali and East Java, and the Project will comprise many such sub-projects that may or may not be adjacent, and that will be carried out over a period of 5 (five) years. Associated facilities comprise the PLN and third party owned and managed material and waste storage facilities.

Screening and Categorization. All project components or sub-projects to be implemented under the proposed project will be subject to an environmental and social screening in order to prevent execution of projects with significant adverse environmental and social impacts. The project preparation has sought to avoid impacts by identifying and avoiding environmentally sensitive areas at the early planning stage, thus all subproject components are expected to be Category B or C. Therefore, the screening of each proposed Project component will trigger one of the two categories.

The Project has been assigned to Category B under the Bank's Environmental and Social Policy (ESP). The Project will require application of Environmental and Social Standard (ESS) 1 – Environmental and Social Assessment and Management. Based on the description of the project (Chapter 2), The ESS 2 – Involuntary Resettlement (includes land acquisition) and ESS 3 – Indigenous Peoples are deemed not applicable. Subprojects to be financed will neither require land acquisition nor will project activities have adverse impact on indigenous peoples.

As this project and sub-project categorized as Category B, any sub project requiring AMDAL (e.g. impacting a protected area) will be declined. The distribution line is classified as Category B, and only require UKL-UPL or SPPL.

Environmental and Social Baseline Information. The environmental and social baseline information of this ESMPF is mostly extracted from the latest Statistic Books and Local Environmental Status of both East Java and Bali Province. Chapter 4 of the ESMPF presents a summary of the existing baseline environmental and social conditions in East Java and Bali. The following topics are covered:

a. Physical (covering geophysical issues such as seismic danger, climate, flooding risk, slope, erosion, topography, and soils; water quality and water resources, natural disaster)
b. Ecological (including protected areas, rare and endangered species habitats and wildlife corridors, important bird areas, and ecosystem services)
c. Socio-economic (discussing general conditions of the national economy, local/regional, gender issues, agriculture, communities, indigenous and vulnerable people issues, and land use, including urban, agricultural/pastoral, and various types of forests)
d. Cultural (including temples/sacred places, archaeological and historic sites, visual resources, and touristic resources)

Environmental and Social Impacts and Risks Assessment. Given the nature of the activities it is considered unlikely that the use of more detailed assessments such as strategic, sectoral or regional environmental and social assessments and cumulative impact assessments will be necessary. The level of analysis required by the ESMPF

ensures that the scope and depth of the assessment is commensurate with, and proportional to, the nature and magnitude of the Project's potential risks and impacts and the categorization assigned by the Bank.

Based on its category the impacts assessment covers the following main impacts: Construction Related Impacts; Biodiversity; Pollution; Cultural Heritage; Climate Change; Traffic and Road Safety; Safe Working Conditions and Community Health and Safety; and Labour Management System.

Potential Impacts and Mitigations. Mitigation measures for each potential impacts and risks at each stage of the project refer to AIIB ESP and ESS requirements, best practices in PLN, Indonesian regulatory requirements and specific technical guidelines (e.g. World Bank EHS Guideline). Some of these measures are listed below.

a. Follow the instruction of PLN Decree on construction of distribution lines (e.g. installation of poles including cable distribution transformers, switching substation) to reduce negative effect due to noise, dust, rock debris and traffic disruption
b. Minimize cutting/trimming of vegetation along the existing ROW for the power cable grid; ensure the permit is granted by the authority, and if the tree is privately owned, ensure prior agreement with trees owner has been obtained.
c. Adequate, timely, and culturally appropriate consultation, particularly in the villages where there are IPs and ethnic minorities are present.
d. Implement good management and storage of power cable, poles and transformers along existing ROW to minimize impact on traffic and access disruption.
e. Place staff to control road traffic and install traffic and prevention signs along the road of working area to prevent accidents, in particularly during materials and equipment shipment and construction (e.g. pole erection, heavy equipment mobilization, trenching/directional drilling, etc.)
f. Ensure occupational health and safety measures to ensure workers safety (e.g. personal protection equipment).
g. Avoid construction works during peak traffic hours and if necessary, place road signaling and light
h. Make appropriate waste management rules to handle domestic and hazardous wastes (e.g. transformer oil leakage/waste).

An environmental and social management planning framework (ESMPF) has been prepared to guide implementation of the mitigation measures and monitoring programs. The plan outlines the institutional arrangement for implementation and supervision/monitoring of the ESMPF; summarizes the mitigation measures; outlines requirements; includes training and capacity development activities; and provides a cost estimate. The cornerstones of the implementation of the ESMPF are the preparation of the E&S screening and rapid assessment by PLN during planning and the Contractor Environmental Management Plan (CEMP). The CEMP must be prepared prior to the start of the construction activities.

Apart from general monitoring of mitigation/enhancement measures and health and safety protocols (as outlined in the ESMP and Tender Document), important environmental parameters to be monitored during the construction phase of the sub-projects include significant impacts only (i.e., spill of soil, nuisance on neighbouring communities and road users, risks and impacts to aesthetic and cultural resources), work accident, traffic and public safety, construction debris, and spill of hazardous wastes) . However, the requirement and frequency of monitoring would depend on the type of sub-project and field situation. For certain sub-projects (e.g., rehabilitation of existing distribution line), monitoring frequency of these parameters would be lesser than for construction of new distribution lines; while monitoring of some of these parameters (e.g.,

noise level) would be needed only if significant pollution on sensitive receptors is suspected.

Selection of contractors and vendors also consider environmental requirements as will be stipulated in the clauses of CDA (Contract Discussion Agreement). In addition to "General Specification" and "Particular Specification" for different sub-projects, a number of special environmental clauses (SECs) shall be included in the Tender Document under General/Particular Specification. These clauses are aimed at ensuring that the Contractor carries out its responsibility of implementing the ESMP and other environmental and safety measures.

Public Consultation, GRM, and Information Disclosure. This ESMPF has been consulted upon with PLN UID Bali as one of key stakeholders for the project on 19 August 2019 during its preparation. During site visit on 13 – 17 January 2020 more consultation with assistance by UID Bali and UID Jatim and interviews with communities in East Java and Bali were done respectively. An upcoming ESMPF disclosure and consultation would be done in February – March 2020 after the disclosure of the draft ESMPF on the PLN and AIIB websites[1]. The GRM flow chart would be included in the ESMPF as well as the required disclosure and consultation on the E&S assessment of each subproject.

PLN has regular socialization to community, including disclosures of information of any PLN projects done in the area, general information about electricity such as safety distance for distribution network, and dissemination of GRM.

The existing PLN grievance mechanism for general complaint management system, the GRM, accessible through: (i) the Call Center 123, which can be accessed by anyone anywhere in Indonesia through the company website, email, telephone, or social media; (ii) a web-based online integrated complaint-solving application (www.pln.co.id); and (iii) the customer service desk at the regional PLN offices.[2] At the sub-project level, the usage of current PLN's complain system must be strengthened by adding: a) explicit attention to vulnerable groups and the participation of women when socializing the GRM, b) awareness among affected persons about a proposed sub-project and its implications until construction commences, c) documentation of all grievances and responses, d) the capacity of PLN's 123 hotline since it is typically used for customer care and not for safeguard-related concerns.

Implementation Arrangement and Capacity Building. PLN has a number of tiers of responsibility for environmental and social safeguards. DIVHSSE has responsibility for all safeguards. At UID level (both in East Java and Bali), there is a unit which responsible for K3L (occupational health and safety and environment), called as "*Biro Pengendali K3L*". The unit (*Biro K3L*) is responsible to planning, monitoring of the implementation, and control of LB3 (hazardous wastes management) and environmental and occupational health and safety issues. To support implementation at district level, the structure of unit level called UP3, UP2D and UP2K[3] also assign staff responsible for K3L issues, respectively.

PT PLN (Persero) has set up and provided human resources required to apply and maintain SMK3 (Occupational Health and Safety Management). The recruitment of human resources has met the requirement and competence as well as authority as proved by certificates, work permits and assignment of authorized party.

[1] PLN: https://www.pln.co.id/dokumen-esmpf-aiib-project and AIIB: https://www.aiib.org/en/projects/proposed/2019/indonesia-pln-east-java.html

[2] PLN UID Bali: Jl. Letda Tantular No.1, Dangin Puri Klod, Kec. Denpasar Tim., Kota Denpasar, Bali 80234, PLN UID Jatim: Jl. Embong Trengguli No.19-21, Embong Kaliasin, Kec. Genteng, Kota SBY, Jawa Timur 60271

[3] UP3: Unit Pelaksana Pelayanan Pelanggan (Customer Service Implementation Unit), UP2D: Unit Pelaksana Pengaturan Disribusi, (Distribution Management Implementation Unit), and UP2K Unit Pelaksana Program Ketenagalistrikan (Electricity Program Implementation Unit)

In addition, PLN has a capacity development master plan, including for environmental safeguards training at basic, intermediate and advanced levels. Capacity building is conducted both at the PLN Corporate University and by external training providers. The HSSE Academy in Semarang, provides environmental training on a variety of topics, including: Mentoring on environmental protection and management; Environmental audit; Corporate performance rating program in environmental management; Environmental management and monitoring toward PROPER-based green company; Preparation of environmental feasibility of electricity project's environmental management system; Basic electricity safety and environment; and Advanced electricity safety and environment

Conclusion. Assuming that mitigation measures and monitoring requirements in the Environmental and Social Management Planning Framework and the ensuing Environmental and Social Management Plan for each sub-project are effectively implemented, the Project and sub-projects are not expected to have a significant adverse environmental and social impact.

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ADB	Asian Development Bank
AIIB	Asian Infrastructure Investment Bank
AMAN	Indigenous Peoples Alliance of the Archipelago (– Aliansi Masyarakat Adat Nusantara)
AMDAL	Environmental Impacts Assessment (EIA)
ANDAL	Environmental Impacts Assessment Report
APKT	Application of Integrated Complaint Resolution
BKSDA	Agency for Natural Resource Conservation
BOQ	Bill of Quantity
CA	Natural Sanctuary (*Cagar Alam*)
CDA	Contract Discussion Agreement
CEMP	Contractor Environmental Management Plan
CHS	Community Health and Safety
CSR	Company Social Responsibility
DAS	Watershed (Daerah Aliran Sungai)
DPLH	equivalent UKL-UPL document for existing project
DTR	Distribution Transformer
E&S	Environment and Social
EHS	Environment, Health and Safety
EHSG	EHS Guideline
EMP	Environmental Management and Monitoring Plan
EMF	Electromagnetic field
ESF	Environmental and Social Framework
ESMP	Environmental and Social Management Plans
ESMPF	Environmental and Social Management Planning Framework
ESP	Environment and Social Policy
ESS	Environmental and Social Standard
ESSA	Environmental and Social Safeguard Assessment
FI	Financial Intermediary
GOI	Government of Indonesia
GRM	Grievance Redress Mechanism
HD	Horizontal Drilling
HSSE	Division of Health, Safety, Security and Environment (K3L)
IFC	International Finance Corporation
IPs	Indigenous Peoples
Jatim	East Java (Jawa Timur)
KBA	Key Biodiversity Area
Kepdir	PLN Regulation (Keputusan Direksi)
KPLHD	Yearly Province's Local Environmental Status
LB3	Hazardous waste
LBS	Low Break Switch
LHK	Environment and Forestry (Ministry of - MOEF)
LV	Low Voltage
MV	Medium Voltage
OHS	Occupational Health and Safety
OHSAS	Occupational Health and Safety Assessment Series
PCB	Poly Chlorinated Biphenyl
Perda	Local Regulation
PLN	Perusahaan Listrik Negara (Indonesia Electric Company)
PROPER	Performance Rating Program in Environmental Management
PSSA	Program Safeguard System Assessment
QMS	Quality Management System

RB	River Basin (DAS)
RBL	Result Based Lending
RESA	rapid environmental and social assessment
ROW	Right of Way
RPF	Resettlement Plan Framework
RTRW	Regional Spatial Plan
RUPTL	Electricity Business Plan
SECs	Special Environmental Clauses
SILM	Information System for Management Report
SMK3	Occupational Health and Safety Management (Indonesia)
SLO	operational feasibility certification
SOP	Standard Operating Procedure
SPPL	Statement on Environmental Management and Monitoring
Tahura	Wilderness Forest Park
TNBB	West Bali National Park
TWA	Nature Tourism Park
UID	Distribution Unit (*Unit Induk Distribusi*)
UKL-UPL	Environmental Management and Monitoring Measures
ULP	Customer Service Unit
UNFCCC	United Nations Framework Convention on Climate Change
UP2D	Implementation Unit of Distribution Regulator
UP2K	Implementation Unit of Electricity Project
UP3	Implementation Unit of Customer Services

CHAPTER 1: INTRODUCTION

1.1 Background

The PLN has developed this Environmental and Social Management Planning Framework (ESMPF) in accordance with the AIIB (the 'Bank') environmental and social requirements contained in its Environmental and Social Policy and Environmental and Social Standards. This ESMPF is agreed between AIIB and PLN, contractually binding and will be applicable throughout the duration of the Project to all AIIB-financed activities by PLN, its local affiliates and its contractors involved in the East Java & Bali Power Distribution Strengthening Project. As required, PLN will prepare the environmental and social assessment report and Environmental and Social Management Plans (ESMP) for each of these activities during preparation of the activities in conformity with the ESMPF. Costs of implementation of the ESMPF are eligible for the Bank financing if these activities are included in the Project description.

The Project will adopt an output-based disbursement, where disbursement would be made based on a combination of agreed unit cost and certification statements verifying that the tangible outputs have been completed in accordance with agreed quality standards. As the sites for the Project-supported activities are not yet known, an Environmental and Social Management Planning Framework (ESMPF) is prepared, consistent with the ESP. The purpose of the ESMPF is to ensure that the activities will be assessed and implemented in conformity with the ESP and applicable ESSs[4].

1.2 Objective of ESMPF

The overall goal of the ESMPF is to ensure that steps supporting decision making and environmental and social risk and impacts mitigation and management measures applicable to subsequent stages of the project are defined in accordance with the applicable environmental and social standards for each of the sub- projects in a consistent manner, and reportable to the AIIB. It aims to integrate environmental and social concerns into the project's design and implementation and to exclude any Category A (high impact) sub-project under this Project.

In order to achieve this, main objectives of the ESMPF are:

a) To establish clear procedures and methodologies for environmental and social planning and assessment, review, approval and implementation of subprojects to be financed under the Project (see Section 5.1, 5.2, 5.3, 5.4, 5.5, and 5.6);
b) To specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to subprojects (see Chapter 7);
c) To determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMPF and ESMP for each Project component and activities (see Section 8.2);
d) To establish the Project funding required to implement the ESMPF requirements (see Section 8.5); and
e) To provide practical information resources for implementing the ESMPF and ESMP for each Project component and activities.

[4] Para 45 AIIB ESS. The Bank requires the Client to use an ESMPF if: (a) the Project consists of a program or series of activities whose details are not yet identified at the time the Project is approved by the Bank; or (b) if the Bank authorizes the Client to use a phased approach in accordance with Section G.

1.3 Structure of ESMPF

The ESMPF includes:

(i) In Section 2.1 and 2.2: description of the Project, its general geographical footprint and duration, and types of activities it may comprise;

(ii) In Chapter 3: applicable environmental and social legislation, policies and procedures for the Project;

(iii) In Chapter 4: General environmental and social baseline conditions in the Provinces of Bali and East Java where the Project will be implemented;

(iv) In Section 5.1: provisions for screening and categorization of proposed activities;

(v) In Section 5.2: assessment of potential environmental and social risks and impacts associated with sub-projects;

(vi) In Section 5.5 and 5.6: recommendations on mitigation and monitoring measures for use in activities;

(vii) In Section 6.1 and 6.2: description of the process for disclosure of and consultation on the ESMPF;

(viii) In Section 6.3: measures for establishment of a Project level Grievance Redress Mechanism (GRM);

(ix) In Section 8.4: identification of the roles and responsibilities for implementation of the ESMPF;

(x) In Section 8.3: proposals for appropriate measures for strengthening local institutions and capacity building needs for contractors to support implementation of the ESMPF; and

(xi) In Section 8.5: presentation of an overall budget and schedule for implementation of the ESMPF.

1.4 Scope of ESMPF

The ESMPF set out a clear framework for integrating environmental and social management in the planning, construction and operation of distribution lines, including transformers, and associated facilities such as end-of-life transformers storage and disposal sites. The Framework also identify the level of environmental and social due-diligence and assessment required for each sub-project, suitable mechanisms for the operationalization of environment and social management measures for activities, appropriate institutional mechanisms for their implementation and reporting, and specific capacity building and training needs for both PLN staff and the Contractors. The Framework covers all kinds of potential risks and impacts for issues such as biodiversity, land requirements, and clearing of right of way, special concerns of Indigenous Peoples, and employment and working conditions, and community health and safety aspects described in ESS.

1.5 Users and Instruction for Use

The ESMPF will be used to understand and guide the screening and preparation of environmental and social documentation for the Project-supported activities. The ESMPF will also provide guidance to PLN and its contractors on the environmental and social management measures that will be prepared for activities during Project planning and implementation, especially for preparing environmental and social documents as required in AIIB ESP and Indonesian country safeguard system, as explained in Chapter 2.

During Project implementation, the ESMPF will provide guidance to PLN and contractors for the preparation of relevant applicable environmental and social management documentation, as set forth in contract clauses (Section 7.2 and Appendix 15).

CHAPTER 2: EAST JAVA AND BALI POWER DISTRIBUTION STRENGTHENING PROJECT

2.1 Project Description

The Asian Infrastructure Investment Bank (the Bank) is considering lending to Perusahaan Listrik Negara ("PLN" or "The Company"), Indonesia's State Electricity Company. Specifically, AIIB is considering financing the construction of about 17,000 km distribution lines and installation of distribution transformers in East Java and Bali. The Project will support the increased access and improved quality of power distribution through infrastructure development in line with the objectives and targets of the first five years of Indonesia's Electricity Business Plan 2019-2028 (RUPTL) in the East Java and Bali regions. The Project will also support ongoing program of PLN to reduce distribution losses.

2.2 Project Components, Scope and Geographic Area

The scope of works of the power distribution strengthening activities leads all the way to home connection including but not limited to construction/installation of medium-voltage (MV) distribution lines, Low-voltage (LV) distribution lines, distribution transformer, customer connection & meter replacement, Medium Voltage (MV) switch (LBS and Rec), MV cubicle (Distribution) and MV cubicle (Substation) with detail below.

Table 1 Project Components of East Java and Bali Power Distribution Strengthening Project

No.	Type of Distribution	Description
1	Overhead Distribution Line	Upgrading and expansion of the distribution network above ground level that require (i) the use of no more than 0.2 square meters (m^2) of land for installing utility poles[5], (ii) the possible removal of non-land assets (primarily trees) located within 2.5 meters (m) of the conductors during their stringing, and the existing Right of Way (ROW) line with width depends on the voltage of the line and type of facilities planned for or located on the ROW.[6]
2	Underground Distribution Line	Considered if overhead is at full capacity (i.e. urban/commercial areas) Uses horizontal drilling (HD) for road crossing to minimize impact, and minimal trenching along roadside from HD landing to pole. Low % of underground lines.
3	Distribution Transformer	Installed on utility poles Distribution transformers are grouped into two categories: pad-mounted and pole-mounted[7]. Pad-mounted transformers will be installed on either public land, or the premises of customers who require power at the primary distribution level, generally large commercial centres or industrial complexes[8]; pole-mounted transformers are installed above ground level on two utility poles.

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[5] The diameter of the poles is 40 centimeters for medium-voltage distribution lines and 20 centimeters for low-voltage distribution lines. Distance between poles is 60-80m for medium-voltage pole and 30-40m for low-voltage pole.
[6] In this project only the existing ROW that would be considered to be financed. The type of facilities could be additional poles to support more power to distribute
[7] Pad-mounted transformers are installed on concrete pads and locked in steel cases no larger than $9m^2$, whereas pole-mounted transformers are occupy about 4.5m2 (1.5mx3m) of land.
[8] For commercial customers, transformers are placed on the customer's property and considered as the asset of customer.

PLN has a preliminary list of the project components on their Electricity Supply Business Plan that could be revised or expanded[9]. The project components will be taking place across East Java and Bali provinces with specific sites to be determined during the implementation.

2.3 Project Implementation, Supervision and Management

The implementation of the project would be under PLN as the executing and implementing agency, during 2019 – 2024. The Project's impact will be to enhance quality of life in Indonesian society with the sustainable use of electricity as a key driver of increased economic activity, while the expected outcome is to achieve an adequate and reliable power supply for East Java and Bali.

Proposed Approach to Manage EHS Risk – ESMPF Implementation

a) Planning and assessment stage:

- Initial screening for (i) environmental sensitive receptors, (ii) IP or ethnic communities; (iii) cultural resources, (iv) community H&S and nuisances, in particular to vulnerable receptors across the transportation routes and installation and operation sites of Project components.
- Completion of Rapid E&S Assessment to capture site-specific sensitivities and determine applicable measures.
- Preparation of a site-specific management plan (ESMP) referencing ESMPF requirements, PLN procedures and reflecting the specific context of the activities
- Disclosure and stakeholder engagement
- Engagement with potential Contractors at pre-bid meetings to ensure there is complete understanding of the screening and assessment reporting and adequate allowance is made in the sub-project BOQ to manage identified risks and specified mitigations

b) Construction & maintenance stage:

- Assign AIIB environmental standard EHS responsibilities to contract supervisors and/or contractors and conduct required training to comply with ESMPF
- Document type, quantities & proposed handling of all waste generated and apply a sustainable chain of custody for hazardous waste management to final storage
- Implement monitoring and reporting requirements and supervision of contractors by PLN

Additional information on project implementation, supervision and management are explained in Chapter 7 (Monitoring and Reporting) and Chapter 8 (Institutional Arrangement).

[9] A list of PRK (program workplan) will be provided to AIIB on a yearly basis.

CHAPTER 3: LEGAL AND REGULATORY FRAMEWORK

3.1. AIIB Policy and Standards

3.1.1 Environmental and Social Policy

The Bank recognizes that environmental and social sustainability is a fundamental aspect of achieving outcomes consistent with its mandate to support infrastructure development and enhance interconnectivity in Asia. The objective of this overarching policy is to facilitate achievement of these development outcomes, through a system that integrates sound environmental and social aspects.

This overarching policy comprises:

- **Environmental and Social Policy.** An environmental and social policy (ESP), which sets forth mandatory environmental and social requirements for each Project.
- **Environmental and Social Standards.** The following three associated environmental and social standards (ESSs), which set out more detailed mandatory environmental and social requirements relating to the following:
  ESS 1: Environmental and Social Assessment and Management (ESS 1);
  ESS 2: Involuntary Resettlement (ESS 2); and
  ESS 3: Indigenous Peoples (ESS 3).

The Project is proposed to be supported by the Asian Infrastructure Investment Bank (AIIB, or the Bank) and has been assigned to Category B under the Bank's Environmental and Social Policy (ESP). The Project will require application of Environmental and Social Standard (ESS) 1 – Environmental and Social Assessment and Management. Based on the description of the project (Chapter 2), The ESS 2 – Involuntary Resettlement (includes land acquisition) and ESS 3 – Indigenous Peoples are deemed not applicable. Subprojects to be financed will neither require land acquisition nor will project activities have adverse impact to indigenous peoples. The provisions of the Environmental and Social Exclusion List of the Bank apply to the Project, as presented in **Appendix 1**.

3.1.2 AIIB Procedure

As part of its due diligence, the Bank reviews the Client's environmental and social assessment and documentation in order to determine the extent to which: (a) all key potential environmental and social risks and impacts of the Project have been identified; (b) effective measures to avoid, minimize, mitigate, offset or compensate for the adverse impacts are incorporated into the Project's design and ESMP; (c) the Client understands the requirements of the ESP and ESSs and has the commitment and capacity, or has made arrangements to strengthen its capacity, necessary to manage the Project's environmental and social risks and impacts adequately; (d) the role of third parties is appropriately defined in the ESMP; and (e) consultations with affected people are conducted in accordance with requirements of the ESP and ESSs. The Client is responsible for ensuring that all relevant information is provided in a timely manner to the Bank so that the Bank can fulfil its responsibility to undertake environmental and social due diligence in accordance with the ESP.

3.2. Indonesia Legal and Regulatory Framework

Indonesia laws and regulations generally cover all items of social and environmental safeguards and related sector regulation on OHS, employment conditions/labor, hazardous waste management, biodiversity and climate change for distribution line projects. A more complete list of Indonesian environmental and social management

Laws, Presidential Decrees, Sector Regulations, and PLN Decrees relevant to environmental and social safeguards are presented in **Appendix 2**.

3.2.1 Regulations on Occupational Health and Safety

In addition to the requirements on worker safety through the national law on Labor, PLN has issued its internal policy K3L requiring PLN workers to be provided with safe and healthy working conditions and measures to be defined and implemented to prevent accidents, injuries, and occupational disease. It also requires the establishment of preventive and emergency preparedness and response measures in PLN (Persero). This decree applies for employees and labors in all units of the company. Additionally, national laws on disaster management also provide for the protection of communities through disaster risk management measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks to the health and safety of local communities.

3.2.2 Regulations on Labor and Employment

Referring to Law No. 13/2003 on Labor provided that every worker has equal right and opportunity to get appropriate employment and livelihood regardless gender, ethnic, race, religion, and political orientation as their interest and competence, including equal treatment of disabled people.

The ministerial regulation of workforce covers many items related to labor and employment, among others working hours, safety and occupational health, wage, layoff, compensation for work termination and leave, etc.

3.2.3 Regulations on Hazardous Wastes Management

The Indonesian legal framework on environment requires cleaner production processes and good energy efficiency practices, avoidance of pollution, or, when avoidance is not possible, minimizing or controlling the intensity or load of pollutant emissions and discharges, including direct and indirect greenhouse gas emissions, waste generation, and release of hazardous materials from their production, transportation, handling, and storage.

Referring to Indonesian regulations (Law No. 19/2009 on Ratification of Stockhold Convention on Persistent Organic Pollutants (including PCB), PP No. 101/2014 and Permen LHK No. 101/2018) stated that: Anybody who generates, collect, transport, use, treat, store and/or dump hazardous waste (LB3) which cause pollution and/or environmental deterioration at land, shall implement remediation of the LB3 contaminated sites.

3.2.4 Regulations on Environmental Assessment

The project and subprojects shall comply with the Government of Indonesia's environmental laws, standards, rules, and requirements, which impose restrictions on activities to avoid, minimize, or mitigate likely impact on the environment. It is the responsibility of PLN to ensure that all activities under the project are in accordance with the legal framework, whether national or local. Compliance is required in all stages of the subprojects' implementation, including design, construction, and operation and maintenance. Key laws and regulations on environmental impacts assessment that apply to this ESMPF include, but may not be limited to, those presented below.

Law No 32 of 2009. The main Indonesian law on environmental management, i.e. Law No 32 of 2009 on Protection and Management of Environment. Article 34 specifies that any business and activity that does not require an AMDAL, shall undertake *Upaya Pengelolaan Lingkungan Hidup dan Upaya Pemantauan Lingkungan Hidup* (UKL-UPL),

whereas for small activities that do not require an UKL-UPL, a statement of ability to undertake environmental management and monitoring of their activity, *Surat Pernyataan Pengelolaan Lingkungan* (SPPL), is required. Further, Article 36 specifies that all activities shall have environment permit that will be given by concerned government agency after the environmental assessment document has been approved.

Decree of Minister of Environment and Forestry No. 38/2019.
The distribution line is not listed in Appendix 1 of Permen LHK No. 38/29 as activity subject to AMDAL requirement. Similarly, in several local regulations (Perda), which set forth activities requiring UKL-UPL and SPPL the distribution line is not mentioned.

Responding to the lack of regulation, it is agreed that:

- PLN prepares (ahead or retrospectively) on a voluntary basis a simplified Environmental Assessment and Management Plan (UKL-UPL/DPLH[10] or SPPL) for medium voltage distribution lines, focusing on sitting and management of transformers). A generic UKL-UPL/DPLH or SPPL will be prepared for a region and updated with project-specific details when available.
- In the instance when a line crosses a protected area, a full Environmental Impact Assessment (EIA or AMDAL) should be prepared for approval. The Project which required AMDAL will be excluded from AIIB financing.

The environmental assessment procedure is described in Indonesia's environment law and regulations. All project or business proposals will undergo screening to classify whether a project proposal would need AMDAL, or UKL-UPL, or SPPL. The project screening procedure is shown in **Figure 1**. As this project and sub-project categorized as Category B, any sub project requiring AMDAL will be declined.

[10] Refer to Circular Letter of Minister of Environment and Forestry No. S.541/MENLHK/SETJEN/PLA.4/12/2016 and Permen LHK No. P.102/MENLHK/KUM.1/12/2016, legalized activity which already implemented but has no environmental document shall prepare an equivalent (DPLH for activity requiring UKL-UPL)

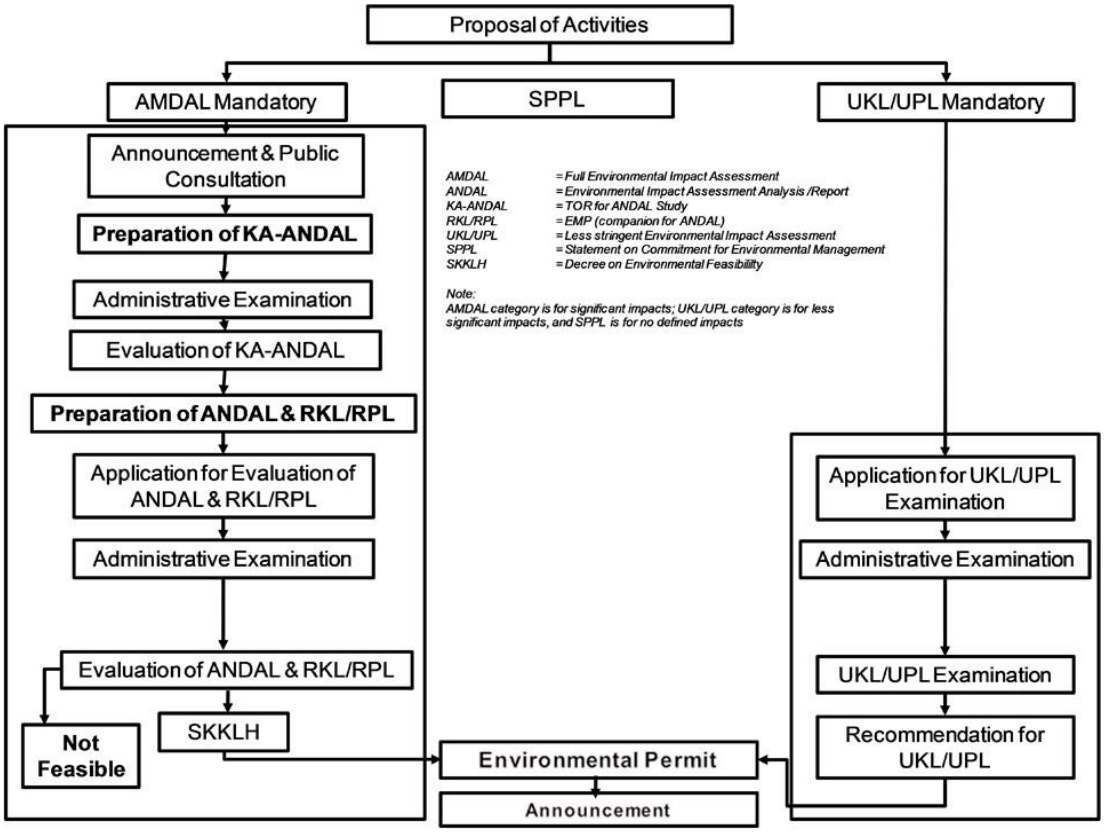


Figure 1 Flowchart of Indonesian Environmental Screening and Clearance

3.2.5. Regulations on Social, Land/Resettlement and Indigenous People

The project and subprojects shall comply with the Government of Indonesia's social laws, standards, rules, and requirements, which impose restrictions on activities to avoid, minimize, or mitigate likely impact on the social issues. It is the responsibility of PLN to ensure that all activities under the project are in accordance with the legal national and local framework. Compliance is required in all stages of the subprojects' implementation, including design, construction, and operation and maintenance. The key laws and regulations on that apply to this ESMPF include, but may not be limited to, those presented below.

The Law No. 2/2012 on Acquisition of Land for Development in the Public Interest is the foundation of Indonesia's legal and institutional framework for land acquisition and involuntary resettlement safeguards. The regulation that implements it, Presidential Regulation no. 71/2012, and other applicable laws and regulations seek to make land available for development and at the same time improve the welfare of the state and society while protecting the legal interest of individuals whose land is to be acquired. Law no. 2/2012 and Presidential Regulation No. 71/2012 also provide for restoring the livelihoods of most displaced persons through land-for-land compensation and cash compensation for other assets lost due to involuntary resettlement. Other laws, including Law No. 39/1999 on Human Rights and Law No. 11/2009 on Social Welfare generally provide greater protection for vulnerable groups and prioritize social welfare initiatives for persons who, among other conditions, are displaced.

The Institutional Regulations in PLN related to social, land acquisition and compensation are mainly The PLN Board of Directors Decree No. 605/2010 on Construction Standard

for Power Distribution Substation and Switching Substation, No. 4606/2010 on Construction Standard for Medium Voltage Power Network, and No. 473/2010 on Construction Standard for Low Voltage Power Network which regulate that based on Law 30/2009 PLN has authority for development of distribution line. These decrees are supported by The PLN Board of Directors Decree No. 289/2013[11] on Land Acquisition for the Purpose of Providing Electricity, Operational Costs of Land Acquisition, and Operational Cost of Compensation and No. 344 of 2016 on Land Acquisition Procedures in PLN. The PLN Board of Directors Decree no. 366 of 2007 on Company Social Responsibility (CSR) rules possible activities that can be done for community development, like develop and/or renovate religious, educational or health centre buildings, community's access road and support communities' activities.

Social Policy and legal frameworks. PLN follows the government's legal framework related to land acquisition. Land acquisition for electricity distribution is covered under Law No. 2/2012[12] and the development of distribution networks is stipulated in PLN Decree No. 289/2013. In practice, there is very limited land acquisition for the distribution lines, as only distribution poles require using land permanently and the majority of land is on government right of way. Subprojects that require new or acquisition of land for right of way will be excluded from financing as well as activities that adversely impact Indigenous Peoples.

PLN Practices. In PLN, under the Main Distribution Unit (Unit Induk Distribusi – UID) **t**here are two units responsible for the development and maintenance of the distribution lines, one is called the UP3 for service in urban area and generally as one of the PLN income modalities, and the other one is the UP2K, which area of service is covering villages, with objective to provide electricity for rural areas[13].

Poles and Transformers. ForUP3 and UP2K, the extension of Medium and Low Voltages distribution lines may require minimal land use from the customers for the placement of new distribution poles in between existing poles and/or transformers, especially when the existing distribution lines have to be expanded because of additional power requested from new customers. PLN's policy is not to provide cash compensation for land use or lost trees and crops**.** There would not be any cash compensation for affected persons whose lands are utilised for poles and/or transformers, and/or those who own non-land assets, like tree and plants.

For any distribution poles and transformers, PLN has required written permission and documented, the land use consents with stamp ("*Materai*") form the affected persons[14] for land use and tree affected from the project activities as attached in Appendix 10.

Temporary Construction Activities. For land being used temporary during the construction activities for example for storage/stockpiling of material, for sitting of boring equipment and mud pits, the contractor on behalf of PLN would maximise the usage of public land like roadside, and will rent private land with budget taken from the construction contract if public land is not available.

[11] PLN Decree No. 0289/2013 (Land Acquisition for the Purpose of Providing Electricity, Operational Costs of Land Acquisition, and Operational Cost of Compensation) covers (i) direct land acquisition to be used for tower siting, major electricity substations, network, transmission, distribution, power plants, and offices, by giving indemnity; and/or (ii) indirect land acquisition to create free space by compensating owners for land crossed by the electricity network and transmission, and by giving indemnity for the plants and buildings. However, this decree does not mention land use (not "direct land acquisition") for distribution lines (utility poles) or indirect land acquisition to create "free space" under distribution lines (i.e., the removal of non-land assets for the stringing of conductors).

[12] Law No. 2/2012: Land Acquisition for the Development of Public Interest Article 10 (f) stipulates that land for the public interest shall be used for the development of power plants, transmission, substations, grids, and distribution.

[13] UP3 stands for Unit Pelayanan Pelaksanaan Pelanggan – Customer Service Implementing Unit; UP2K stands for Unit Pelayanan Program Kelistrikan – Electricity Program Service Unit

[14] PLN. 2010. Book 4 – Regarding Construction Standard for Power Distribution Substation (*Lampiran Keputusan Direksi PT PLN (Persero)/Nomor:605.K/DIR/2010 Buku 4–Standar Konstruksi Gardu Distribusi Dan Gardu Hubung Tenaga Listrik*).

Distribution Lines. For the installation of distribution lines, PLN would consult with village heads early in the planning stage. These consultations cover the subproject plan, land use, and cable stringing that may require the removal of non-land assets (mainly trees). PLN in conjunction with contractors, facilitates the planning of the alignment and design of the distribution line in close coordination with village heads and relevant government agencies, such as the Ministry of Public Works and Housing (which has authority over national roads) and local governments (which have authority over regional roads), because the distribution lines are installed along public roads mostly on or close to the border between public and private land.

The alignments of distribution lines, including the location of utility poles, can be changed if necessary. Even within the same alignment, the conductors can avoid disturbing non-land assets by increasing the height of poles and conductors, or by replacing bare cables with insulated cables that can go along or through obstacles, including trees. The flexibility allows PLN to optimize the alignments of distribution lines, including the location of utility poles, to minimize the siting of utility poles on private land and avoid disturbing non-land assets to the maximum extent possible. Otherwise, PLN must obtain the concurrence of affected persons to use private land for utility poles and to remove non-land assets.

If a distribution line is to be installed at the request of a community , under the UP2K, the village head must submit a statement letter on behalf of the community group signed by the individual households requesting for new connection, with a written commitment from the community to bear any costs, damages, or any other impacts incurred due to the project without any compensation[15], except for repair or restoration in case there are damages to property caused by contractors. In all case, no compensation is provided for the use of the land.

For this project, the general flow to be implemented is as follow: 1) PLN will utilize the existing right of way; 2) If there is no PLN existing right of way, then PLN will realign the lines, mostly using public lands; 3) If the realignment on the public lands are not possible, then use of private lands; 4) For any usage of private land consent has to be obtained; 5) For any damages during construction phase, in kind compensation might be paid, it would be covered under the contractor's contract; 6) Distribution Lines required by villages adequately documented to show consent and support of all affected persons.

Indigenous People

Policy and legal frameworks. The Constitution of Indonesia (1945) recognizes customary communities, and indigenous peoples' rights are recognized by law. The Ministry of Social Affairs has a regular program to empower indigenous groups through various activities, including the provision of public facilities. The Ministry of Energy and Mineral Resources has been providing an electricity access program to indigenous peoples, although the program does not cover all indigenous households.

PLN Practises. Although many indigenous peoples recognize the benefit of electricity access and expect to be connected, some still lack electricity access.

For the installation of distribution lines in areas inhabited by Indigenous Peoples, PLN must consult with village heads from the planning stage, and respect and take into consideration the options preferred by affected Indigenous Peoples community in relation to the provision of project benefits and the design of mitigation measures. This would be documented in accordance with the screening guidance form attached in the Appendix 6 and adequately reflected in subproject work plan map.

[15] For example, cutting of trees and/or clearing of branches, use of land for siting of poles.

3.3 International Conventions on Environment

Indonesia has ratified several international conventions on environment and natural resources, among others:

- **Convention on Biological Diversity**, for parties to require the environmental assessment of their proposed projects that are likely to have significant adverse impacts on biological diversity with a view of avoiding or minimizing such impacts. Indonesia is obliged to respect and protect traditional knowledge related to sustainable utilization of biodiversity, including promote fair benefit sharing of the use of traditional knowledge. Based on this convention, the Nagoya Protocol was established, which was also ratified by the GOI;
- **Convention on Wetlands of International Importance Especially as Waterfowl Habitat (1972)**. Indonesia follows an international agreement to control the continuous encroachment of wetland in the present and future, to recognize the basic ecological functions of wetlands follows the economic, cultural, scientific, and recreation.
- **Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter (1972)**. Indonesia follows an international agreement to control marine pollution due to accumulation of waste and other materials and to encourage regional agreements to complement the Convention; the London Convention came into effect in 1996.
- **Vienna Convention for the Protection of the Ozone Layer (1998)** and subsequent protocol and amendments, for parties to take appropriate measures to protect human health and the environment against adverse impacts likely to arise from human activities that will/likely modify the ozone layer.
- **Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships**, 1973 (MARPOL). Indonesia has ratified the international agreement to conserve the marine environment / marine pollution by banning oil and other hazardous substances and disposal of hazardous substances to suppress levels that do inadvertently (e.g. due to accidents).
- **Basel Convention on the Control of Trans boundary Movements of Hazardous Wastes and Their Disposal (1989)**. Indonesia has ratified the international agreement to reduce cross-country movement of waste in accordance with the minimum limit of the Convention to create an environmentally friendly waste management and efficient; reducing toxicity of waste generated and to ensure that environmental management is the basis for resource development.
- **United Nations Framework Convention on Climate Change (1992)**. Indonesia has ratified the international agreement to achieve stabilization of greenhouse gas concentrations in the atmosphere as low as possible to prevent dangerous anthropogenic interference with the climate.
- **Convention on Fishing and Conservation of Living Resources of the High Seas (Marine Life Conservation).** Objectives: Solve the problem of preservation of biological resources in the high seas through international collaboration with the consideration that the use of modern technology for the exploitation of resources in excess will cause harm to these resources.
- **Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC).** Indonesia has ratified the international agreement to reduce greenhouse gas emissions by promoting national programs in developed countries aimed at reducing greenhouse gas emissions and determine the percentage of reduction targets for developed countries.
- **The Paris Agreement within the UNFCCC (October 2016).** Indonesia has ratified the Paris Agreement dealing with greenhouse gases emissions mitigation, adaptation and finance.

3.4 Alignment of AIIB and GOI Policies Relevant to Project

The government's environmental screening under Permen LHK (Decree of Minister of Environment and Forestry) No. 38/2019, mainly uses a prescriptive list with thresholds of proposed activity, whereas AIIB screens based on the significance of impacts. In addition, limited data and information is available to serve as a reference for the sustainable use and control of biodiversity, although an AMDAL is required for businesses and activities to be located in or directly adjacent to protected areas, which include critical or natural habitats. Thus, the program will adopt screening criteria to exclude activities located in or directly adjacent to protected areas.

The government's legal framework exempts distribution line activities from an environmental assessment, provided that they are not located in or directly adjacent to protected areas. However, considering that the scale of the impact is site-specific and that environmental mitigation measures are implemented following the PLN decrees, the current practices will be sufficient to manage the environmental impacts. According to PLN regional offices and units, no outstanding issues or complaints regarding adverse environmental impacts caused by distribution lines have ever been reported. Recently UID East Java and Bali prepared a DPLH (an equivalent UKL-UPL document for existing distribution network in each UID under a retroactive mechanism as mandated in MOEF regulation[16].

The Indonesia AMDAL system generally conforms to the intent of AIIB's environmental and social policy, requirements and management guidelines. According to the regulation, all projects should undergo environmental clearance before proceeding to implementation. **Table 2** shows the relationship between the AIIB environmental categorization and those under Indonesia's regulations/policies.

Table 2 AIIB and Indonesia Project Categorization Systems

AIIB Project Categories	GoI Project Categories
Category A: A proposed project is classified as category A if it is likely to have significant adverse environmental and social impacts that are irreversible, cumulative, diverse or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works and may be temporary or permanent in nature. An environmental and social impact assessment (ESIA) or equivalent environmental and social assessment is required.	**AMDAL**: Projects that according to law require an Environmental Impact Assessment (AMDAL). The detailed criteria that trigger an AMDAL defined in the Decree of Minister of Environment and Forestry No. 38/2019.
Category B: A proposed project is classified as category B if it has a limited number of potentially adverse environmental and social impacts; the impacts are not unprecedented; few if any of them are irreversible or cumulative; they are limited to the Project area; and can be successfully managed using good practice in an operational setting. An initial review of the environmental and social implications of the Project is required.	**UKL-UPL**: Projects that according to law requires Environmental Management Effort and Environmental Monitoring Effort (UKL-UPL).
Category C: A proposed project is classified as category C if when it is likely to have minimal or no adverse environmental and social impacts. It does not require an environmental and social assessment, but does require the Client to conduct a review of the environmental and social implications of the Project	**SPPL**: Projects that do not require AMDAL or UKL-UPL are obliged to submit a 'statement on commitment for management and environmental monitoring' or SPPL**.**

[16] See footnote 13

Category FI: if the financing structure involves the provision of funds to or through a financial intermediary (FI) for the Project, whereby the Bank delegates to the FI the decision-making on the use of the Bank funds, including the selection, appraisal, approval and monitoring of Bank-financed subprojects.	**Not Applicable**

There are still some gaps found compared with safeguards of multilateral development partners, as indicated in some assessment carried out by ADB[17] and the World Bank[18]. The detail assessment for the alignment taken from previous study (World Bank ESSA and ADB RBL) is presented in **Appendix 3.** From the social aspects, there are some gaps on the screening stage as there is no screening and assessment conducted for distribution lines, no documentation of result from the consultation included in the work plan map of subprojects, as well as information disclosure, GRM, implementation and monitoring of distribution lines and community and health safety, the gaps on these items will also be reflected in Appendix 3, particularly in the ESAP table.

Indonesia's country safeguard system generally requires all proposed projects with significant environmental impact to conduct environmental assessment, but that requirement does not extend to power distribution line projects. In relation to PLN operations, regulations under Law No. 32/2009 require either AMDAL or UKL-UPL for power generation facilities and transmission lines, according on their proposed capacity and/or scale. The distribution line is classified as Category B, and only require UKL-UPL or SPPL.

In practices PLN has prepared environmental document for either UKL-UPL or SPPL for distribution related facilities such for storage building, offices, and other supporting facilities for distribution line. Field study to East Java and Bali confirmed both UID East Java and UID Bali prepared DPLH (equal to UKL-UPL) for distribution line network in each province on a voluntary basis (see section 3.2.4 above). In addition, UID also prepared environmental documents (UKL-UPL or SPPL) for supporting facilities (such as buildings and temporary hazardous wastes storage).

Based on previous assessment under PSSA[19] PLN has implemented the mitigation measures to manage hazardous wastes, including used oil from transformers. The management of hazardous wastes can be improved in terms of avoiding and managing oil spillage and utilizing only a government-recognized third party when disposing of hazardous wastes.

As discussed in Section 3.2, for Social and Indigenous People aspects, PLN follows the government's legal framework related to land acquisition. Land acquisition for electricity distribution is covered under Law No. 2/2012 and the development of distribution networks is stipulated in PLN Decree No. 0289/201330. For IPs, the Constitution of Indonesia (1945) recognizes customary communities, and indigenous peoples' rights as explained in section 3.2.5.

[17] Aligning Asian Development Bank and Country Systems for Improved Project Performance (https://www.adb.org/projects/documents/aligning-asian-development-bank-and-country-systems-improved-project-performance-tar) and Sustainable Energy Access in Eastern Indonesia - Electricity Grid Development Program Phase 2: Program Safeguard Systems Assessment (https://www.adb.org/projects/documents/ino-51114-001-pssa).
[18] Environmental and Social Systems Assessment (http://documents.worldbank.org/curated/en/673201468253521138/pdf/104284-REVISED-EA-P154805-ESSA-Box394881B-PUBLIC-Disclosed-3-29-2016.pdf)
[19] PSSA (Program Safeguard System Assessment, funded by ADB)

CHAPTER 4: BASELINE INFORMATION OF ENVIRONMENTAL AND SOCIAL CHARACTERIZATION

4.1 Baseline Information on Bali Region

The baseline information of this ESMPF is mostly extracted from Local Environmental Status of Bali Province (IKPLHD, 2017).

4.1.1 Baseline on Environment

4.1.1.1 Physical Resources

a) Administrative

Bali Province covers an area of 563,666 ha (0.29% of total Indonesia), comprising of Bali main island with 542,765 ha area and several isles (both inhibited and otherwise). Inhibited isles are Nusa Penida (19,272 ha), Nusa Lembongan (696 ha), Nusa Ceningan (316 ha) and Serangan (418 ha).

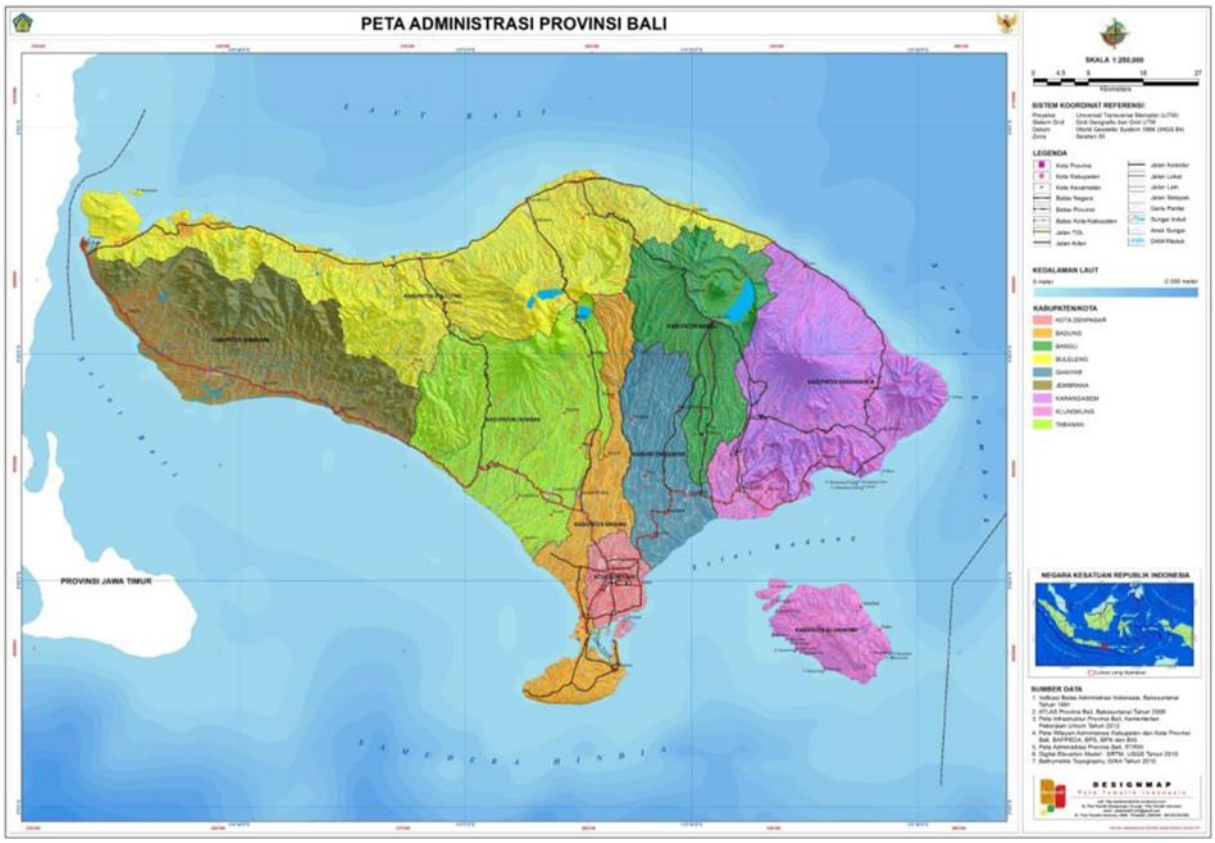


Figure 2 Map of Administrative Area of Bali Province

Administratively, Bali Province is divided into eight Kabupaten (regency) and one Kota (municipality). They are Kabupaten Jembrana, Kabupaten Tabanan, Kabupaten Badung, Kabupaten Gianyar, Kabupaten Karangasem, Kabupaten Klungkung, Kabupaten Bangli, Kabupaten Buleleng, and Kota Denpasar (which is also capital city of Bali Province).

Table 3 Districts and Sub-districts of Bali Province

No	Kabupaten/Kota	Area (km^2)	Number of Kecamatan (Sub-District)	Number of Village/ Kelurahan	Number of Pakraman Village
1	Jembrana	841,80	5	51	64
2	Tabanan	839,33	10	133	346
3	Badung	418,52	6	62	122
4	Gianyar	368,00	7	70	272
5	Klungkung	315,00	4	59	113
6	Bangli	528,80	4	72	168
7	Karangasem	839,54	8	78	190
8	Buleleng	1.365,88	9	148	170
9	Denpasar	127,78	4	43	35
	Total	**5.644,65**	**57**	**716**	**1.480**

b) Geography

Geographically, Bali is located at 8°3'40" - 8°50'48" South Latitude and 114°25'53" - 115°42'40" East Longitude. Physical boundaries of the province as follows:

- North: Bali Sea
- East : Lombok Strait (West Nusa Tenggara Province)
- South : Indonesian Ocean
- West : Bali Strait (East Java Province)

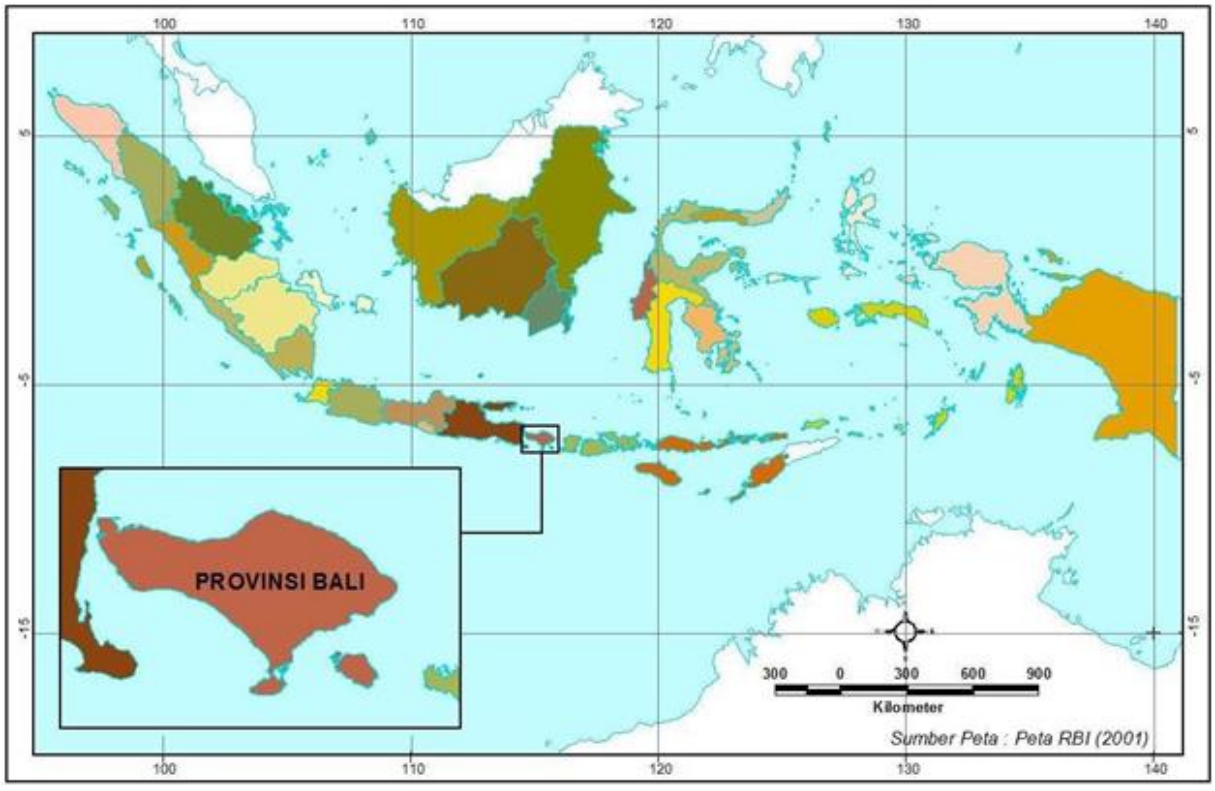


Figure 3 Map of Bali Province

c) Topography

Topographically, Bali represents mountainous area from west to east. Among the volcanoes, two are active, namely Gunung Agung (3,142 m) and Gunung Batur (1,717 m). Some other volcanoes are not active with height in range of 1,000 – 2,000 m.

The mountain chain spread at the middle of Bali Island made this region geographically separated into two distinct part, namely North Bali with narrow lowland from the foot of hill and mountains and South Bali with wide and flat lowland. In term of slope, most areas of Bali are classified as ones with slope 0 - 2 % to 15 - 40 %. The rest are areas with slope greater than 40 %.

d) Geology

Concerning the geological features in Bali Island, it consists of mainly *Regusol* and *Latasol* (red soil), with slight mixture of the *Mediteran* and *Andasol layers*. There is *Latasol* stratum that is most subject to erosion across Kalopaks, Petemon, Langikit, and Punpatan in the western part, distributed across the Punu Mountain, the Pintu Mountain, the Juet Mountain, and the Surya Mountain, and it accounts for 44.9 percent in the Bali Island. There is a *Regusol* stratum that is easily subject to erosion from the eastern part of Amlapura to Tulik, from the Singaraja coast to Suririt, Bubunan, Kukulkan (near Tamblingan lake, Buyan Lake, and Bratan Lake), Batukal forest, Kusamba village in the south coast, Sanur, Benoa and a part of Kuta. This stratum accounts for 39.93 percent in Bali.

The Andasol stratum can be found in a part of forest near the mountains of Baturiti, Chandikunin, Vanitatis, Gobleg, Pupuan, and Batucal. There is *Mediteran* stratum, which is slightly resistant to erosion across the hills of Jajiransapunida and the neighboring islands, Kutahill, and Prepattoago. Additionally, there is alluvium, which is highly resistant to erosion, across Negara, Sumberklampok, Manggis and Angada.

e) Morphology

Morphology of Bali consists of lowland, coast, rinver, swamp, lake, volcanic plain and sedimentary plain which flat with slope 0 - 5 % and height in range 0 - 25 m above mean sea level. This morphology has less surface erosion level, and some represents abrasion areas and active sedimentation, especially in Benoa Bay, Singaraja, and Gilimanuk. The alluvium plain at height in range 1,000 – 1,230 meter above mean sea level represents land movement prone areas such as landslide or soil and rock collapse from the surrounding cliff.

Hilly areas with smooth relief to coarse relief with plain to steep slope (2 - 70 %) at height 0 – 1, 380 meter above sea level, especially riverbanks which identified as steep slope (>70 %).

Limestone areas (Bukit Jimbaran and Nusa Penida) has plain to steep slope (3 - 50 %) with several areas >30 %, especially sea cliff, located at elevation 0 - 210 meter above sea level.

f) Hydrology

Bali has four lakes, which represents tourism assets, namely Danau Beratan, Danau Buyan, Danau Tamblingan and Danau Batur. The lakes also provide raw water sources for Bali. In addition to lakes, water supply in Bali also taken from spring, river and groundwater. There are 570 springs in Bali with total flow 442.39 million m3 per year.

The springs provide water for 315 rivers with total length 3,756 km. Total water storage of lakes and reservoir in Bali recorded as 1,036 million m^3, which used for irrigation and domestic use.

Based Map of Watershed in Bali-Penida River basin (BWS Bali – Penida, 2011), in Bali there are 390 watersheds. Rivers in Bali-Penida River basin are grouped into 20 sub-SWS (sub river basin). The largest number of watersheds found in sub-SWS03.01.20, where there are 59 DAS, followed with sub-SWS 03.01.12 with 54 DAS, and sub-SWS 03.01.08 with 40 DAS. Meanwhile, the numbers of DAS in other sub-SWS in range 2 – 38 DAS where the least DAS found at sub-SWS 03.01.06.

Sumber: Dinas PU Provinsi Bali (2011)

Figure 4 Map of Watersheds of Bali-Penida

g) Water Quality

Monitoring of river-water quality in Bali in 2015 was carried out on 32 cross-district/city rivers throughout Bali, where measurements/testing of water quality in each river were carried out at 2 to 6 sample points/locations. Detailed data on the water quality is presented in **Appendix 4**.

h) Climate and Temperature

Bali's climate is a tropical sea climate that is influenced by monsoons that form two seasons, namely the dry season and the rainy season, interspersed by the transition season. The average temperature of Bali ranges from 28^0C to 30^0C with humidity is about 90%, and in the rainy season reaches 100%, while in the dry season it reaches 60%.

i) Land Use

Spatially, land use changes in Bali Province mostly occurred in the southern and central parts. In the south, the change that occurred was an increase in residential areas followed by a decrease in irrigated rice fields. In addition, in the southern part there is also an increase of mangrove land use area which replaces the pond and grass land. In the central part of the Bali's Province there is a change in the use of forest type land into gardens/plantations and a change in open land to grass land. Compared with the

conditions in 2014, the results showed that the largest land change occurred in non-agricultural land area, which was a decline of 65,143 Ha, then followed by a decrease in plantation land area which reached 37,910 Ha, a decrease in paddy land area reached 563 Ha and a decrease in forest land area which reaches 2.09 Ha. Different conditions occurred in the change of dry land area which increased to reach 30 hectares from 2014 to 2015.

j) Disaster Prone Areas

Referring to Local Regulation (Perda) on Bali Regional Spatial Plan (RTRW) 2009-2029, there have been identified are 6 (six) types of natural disaster areas as follows.

Landslide. Distribution of landslide prone areas comprising of areas with medium-high risk located at slope of hills, mountains, and cliff in Kabupaten Jembrana, Tabanan, Badung, Gianyar, Klungkung, Bangli, Karangasem, Buleleng.

Tidal Wave. Prone areas for tidal wave identified along coast of Kabupaten Jembrana, Tabanan, Badung, Gianyar, Klungkung, Bangli, Karangasem, Buleleng, and Kota Denpasar.

Flood. The distribution of flood-prone areas with moderate to high levels of vulnerability is located in the South Denpasar Region, Kuta Area of Badung District, Singaraja Urban Area of Buleleng District, Jembrana District and Karangasem District, Klungkung District and Tabanan District.

Volcano Eruption. The distribution of volcanic eruption-prone areas is in the volcano area of the Mount Agung in Karangasem District and Klungkung District and the Mount Batur volcano area in Bangli District along with river channels that have the potential to become lava flows.

Earthquake. The source of the earthquake that affect the area of the Bali island and its surroundings are was divided into 2 (two) zones, namely the subduction zone in the south of Bali and the rear arc fault zone in the north of Bali. Both of these zones are caused by fault-up zone of the back arc of Flores.

Abrasion and Erosion. Abrasion-prone areas are determined by the criteria of a beach that has the potential and / or has abrasion experienced. The distribution of areas prone to abrasion and coastal erosion is spread in several places along the coast of Badung District, Denpasar City, Gianyar District, Klungkung District, Karangasem District, Buleleng District, Jembrana District, and Tabanan District.

Tsunami. Tsunamis are ocean waves with long periods and large amplitudes caused by impulsive disorders from the seabed. Such impulsive disorders can originate from tectonic earthquakes, volcanic eruptions or landslides. Threats to the Tsunami disaster in the Bali Province can be categorized into 3 (three) levels, namely high, medium and low threats. Based on the identification of the characteristics and historical events of the disaster in the Bali Province, except for Bangli District, almost all regions of the Bali Province are areas that have a high threat to Tsunami.

4.1.1.2 Biological/Natural Resources

a) Forest Areas

The forest area in Bali Province in accordance to the Decree of the Minister of Forestry No.433/Kpts-II/1999 dated 15 June 1999 concerning the Designation of Forest Areas on the land and waters of the Bali Province is 130,686.01 ha, while the land forest area reaches 127,271.01 ha. Based on the forest function, the forest area in Bali consists of protected forest, conservation forest covering the Nature Reserve area, National Park

area, Nature Tourism Park area (TWA), Wilderness Forest Park (*Tahura*), and Production Forest area including the Limited Production Forest area and Permanent Production Forest area. Protected forest is the largest area of forest which reaches 95,766.06 ha or 73.28% of the total forest area in Bali Province. While the Wilderness Forest Park is the smallest forest area in the Bali province with an area of 1,373.50 or 1.05% of the total forest area in the Bali province.

The distribution of forest areas in Bali is not evenly distributed by district / city, even in Gianyar District there are no designated forest areas. The largest forest area is in Buleleng District, but the highest percentage of forest area to District area is found in Jembrana District. Percentage of forest area to total District / city area that meet criteria of minimal 30% to which the forest area must be maintained is only found in Jembrana and Buleleng Districts.

State forests in the Bali Province are spread over 22 forest areas. The largest forest area in Bali is the West Bali Forest area which covers Buleleng and Jembrana districts, which is 62% of the total forest area. Some areas which have an forest area of more than a thousand hectares are Batukau Mountain, Abang Mountain, Agung Mountain, Penulisan-Kintamani, Yeh Leh-Yeh Lebah, Mount Batur Payang Mountain, Prapat Benoa, Mount Mungsu, and Mount Seraya.

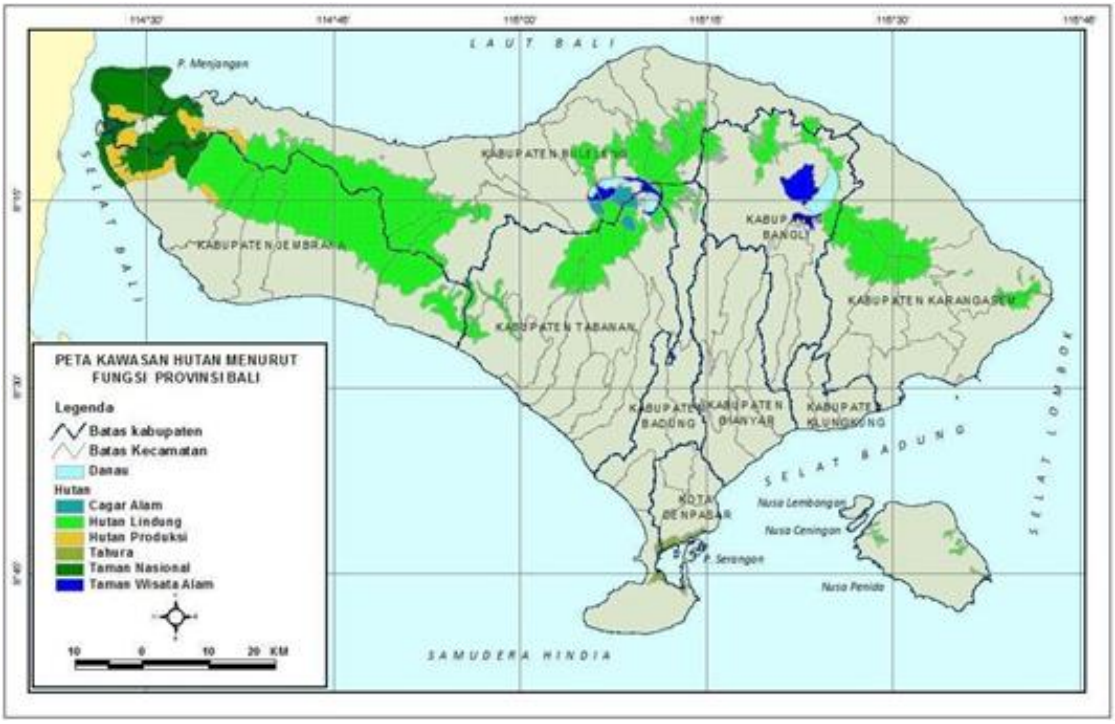


Figure 5 Map of Forest Area by Function in Bali Province (2015)

b) Protected Areas

Natural Sanctuary. A nature reserve is a protected area because of its natural condition has a unique plant, animal, and ecosystem or special ecosystem that needs to be protected and its development takes place naturally. Forest nature reserves in the Bali Province are only found in the middle of the island of Bali, namely the Batukahu Nature Reserve which was determined based on the Decree of the Minister of Agriculture no. 716 / kpts // um / 11/1974 with an area of 1,762.80 ha. This nature reserve is divided into

three forest areas, namely: Batukahu I (Bukit Tapak), Batukahu II (Bukit Pohen) and Batukahu III (Bukit Lesong). The topography is hilly with an elevation between 1,860-2,089 m above sea level. Currently the Batukahu Nature Reserve is an area that is managed under the responsibility of BKSDA Bali and the central government. Batukahu Nature Reserve is included in the area of Buleleng District (Banjar and Sukasada Districts) covering an area of 1,004.4 ha and Tabanan District (Baturiti and Penebel Districts) covering an area of 758.40 ha.

Natural Tourism Park. Nature tourism park (TWA) is a nature conservation area which is mainly used for tourism and nature recreation. In the Bali Province, there are a total area of 4154.4 ha of Nature tourism park, spread over 4 (four) TWAs, namely:

(1) **Buyan-Tamblingan Lake Nature Park** covers an area of 1,491.16 ha (excluding the area of Lake Buyan and Lake Tamblingan), located in two Districts namely Banjar sub-district and Sukasada sub-district of Buleleng District which have an area of 442.35 ha each and 506.3 ha, and Baturiti sub-district of Tabanan District covering an area of 542.51 ha. Lake Buyan-Tamblingan Nature Tourism Park was determined by the Minister of Forestry based on Decree No. 144 / Kpts-II / 1996 dated April 4, 1996 covering an area of 1,336.50 ha. Then it was revised again in accordance to the Decree of the Regional Office of the Ministry of Forestry No.140 / Kwl-5/1997 dated January 22, 1997 so that the area of Lake Buyan-Tamblingan TWA became 1,703 ha (including Lake Buyan and Lake Tamblingan);

(2) **Mount Batur Bukit Payang Nature Tourism Park** is located in Penelokan Village, Kintamani sub-district, Bangli District. The status of this area is determined by the Minister of Agriculture Decree Number: 321 / Kpts / Um / 11/1982 dated November 10, 1982 with an area of 2,075Ha. This tourist park area has cool air, beautiful and unique panoramas because from this area can be seen the beauty of Mount Batur and its lake;

(3) **Penelokan Nature Tourism Park** is located in Penelokan Village, Kintamani sub-district, Bangli District, which is included in the 8 Forest-Land Register (RTK) of Hunung Abang-Agung Forestry. The status of this area was determined by Decree of the Minister of Agriculture Number: 655 / Kpts / Um / 10/1978 dated October 29, 1978 with an area of 574,275 Ha. This natural tourism park area is located at an altitude between 1,200-1,500 m above sea level with cool air and has a very beautiful and unique panorama because of this area can be seen the beauty of Mount Batur and the lake. When the air is clear, the top of Mount Agung that rises in the southeast can be seen, and

(4) **Sangeh Nature Tourism Park**: Sangeh Nature Tourism Park is located in Sangeh Village, Abiansemal sub-district of Badung District. The status of this area was previously a nature reserve, but with the issuance of the Minister of Forestry Decree Number: II / Kpts-II / 1993 February 16, 1993 its status was changed into a nature park with an area of 13,969 Ha. The attraction of the TWA sangeh tourism destination is the existence of gray ape life, then there are pure stands of Nutmeg trees that are very distinctive and dominate the area. In addition, there are also temple buildings in the area, such as the Bukit Sari Temple and the Melanting Temple.

National Park. National Parks are nature conservation areas that have native ecosystems, managed by a zoning system that are utilized for research, science, education, supporting cultivation, tourism and recreation. Bali Province only has one National Park, which is West Bali National Park (TNBB). TNBB is one of the Technical Implementation Units of the Directorate General of Forest Protection and Nature Conservation based on the Minister of Forestry Regulation Number: P.03 / Menhut-II / 2007 dated February 1, 2007 concerning Organization and Governance of the National Park Technical Implementation Unit that manages the TNBB area. Based on the Decree of the Minister of Forestry No. 493 / Kpts-II / 1995 dated 15 September 1995, TNBB

National Park has an area of 9,002.89 Ha which consists of 15,587.89 Ha terrestrial area and 3,415 Ha aquatic area. TNBB is administratively located in 2 Districts, namely Buleleng District (Gerokgak sub-district) covering 12,814.89 ha and Jembrana (Melaya bu-district) covering 6,188.00 ha. Geographically it is located between 08 ° 05'30 "-08 ° 17'20" South Latitude and 114 ° 26'00 "-114 ° 56'30" North Latitude with stretches ranging from coastal seas to mountains. The topography is hilly, so the altitude varies from 0 - 698 m above sea level.

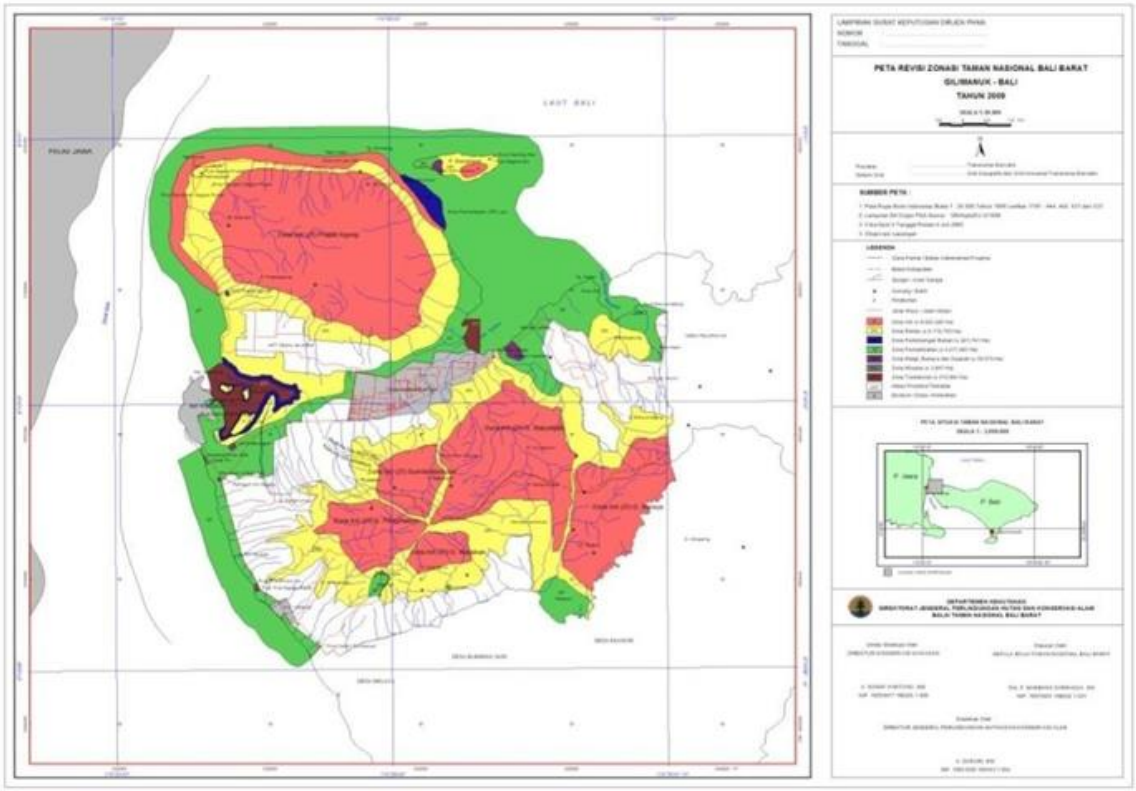


Figure 6 Map of TNBB (West Bali National Park)

Wildlife Park. Ngurah Rai Great Forest Park is the only one of Great Forest Park (*Tahura*) found in Bali Province located in the Prapat Benoa forest area which has a typology of brackish forest or mangrove forest. The Ngurah Rai Great Forest Park is a type of brackish forest that is always inundated with brackish water and is affected by tides. The Ngurah Rai Great Forest Park was formerly known as the "Prapat Benoa-Suwung Nature Park" (TWA-BPS), a Prapat Benoa Forest Group of 10 Land Forest Register (RTK) covering an area of 1,375.5 Ha. The status change of the forest into a Nature Tourism Park was due to the Decree of the Minister of Forestry of Republic of Indonesia Number 885 / Kpts-Ih / 1 992 on September 8, 1992. Furthermore, by the Minister of Forestry on September 15, 1995 the status of the Nature Tourism Park was changed to become Great Forest Park (*Tahura*) of Ngurah Rai in accordance with Minister of Forestry's Decree Number 493 / Kpts-II / 1995. Ngurah Rai Great Forest Park is located in two City-Districts namely Badung District and Denpasar City where 734.5 ha are located in South Denpasar sub-district, Denpasar City and 639 ha are in Kuta and South Kuta sub-district, Badung District. The main vegetation in the Great Forest Park is mangrove plants. The types of plants that dominate in the Ngurah Rai Great Forest Park are *Rhizophora apiculata*, *Rhizophora Mucronata, Soneratia alba, Bruguiera gymnorrhyiza, Avecinia marina* and *Ceriops tagal*.

Protected Forest. The details of the Protection Forest along with the area and location of each protected forest area are as follows:

(i) Puncak Landep protected forest covering an area of 590 ha, located in Buleleng District (Sukasada sub-district).
(ii) The Mount Mungsu protected forest covers an area of 1,134 ha, located in Buleleng District (ie Sukasada and Banjar sub-districts).
(iii) Mount Silangjana protected forest, covering an area of 415 ha, located in Buleleng District (ie Sawan and Sukasada sub-districts)
(iv) Mount Batukau protected forest, covering an area of 11,899.32 ha, is located in Buleleng District (sub-districts of Sawan, Kubutambahan, Banjar and Sukasada), Tabanan District (sub-districts of Selemadeg, Penebel, Baturiti and Pupuan), and Badung District (Petang sub-district).
(v) Munduk Pengejaran protected forest, covering an area of 613 ha, is located in Bangli District (Kintamani sub-district).
(vi) The Mount Abang protected forest, Mount Agung, covers an area of 14,038.63 ha located in Bangli District (Kintamani sub-district) and Karangasem District (sub-districts of Abang, Kubu, Bebandem, Rendang and Silat).
(vii) Yeh Ayah protection forest, covering an area of 575.73 ha, is located in Tabanan District (Penebel sub-district).
(viii) Mount Seraya protected forest covering an area of 1,111.00 ha, located in Karangasem District (Karangasem sub-district).
(ix) The Gumang Hill protected forest, covering an area of 22 ha, is located in Karangasem District (sub-district of Beandem).
(x) The Pawon Hill protected forest, covering an area of 35 ha, is located in Karangasem District (Beandem sub-district).
(xi) Kondangdia protected forest, covering an area of 89.5 ha, is located in Karangasem District (Abang sub-district).
(xii) The Bunutan protected forest, covering an area of 126.70 ha, is located in Karangasem District (Abang sub-district).
(xiii) The Leh Leh-Yeh Lebah Protection Forest, covering an area of 4,195.30 ha, is located in Tabanan District (sub-districts of Selemadeg District, Pupuan), Buleleng District (Busungbiu sub-district) and Jembrana District (Pekutatan sub-district).
(xiv) The Bali Barat protected forests, covering an area of 54,452.68 ha and is located in Jembrana District (sub-districts of Melaya, Mendoyo and Pekutatan) and Buleleng District (sub-districts of Gerokgak, Seririt, and Busungbiu).
(xv) The Penulisan Kintamani protected forest, covering an area of 5,663.70 ha, is located in Buleleng District (Tejakula sub-district) and Bangli District (Kintamani sub-district).
(xvi) The Nusa Lembongan protected forest, a brackish forest (mangrove) covering an area of 202 ha located in Klungkung District (Lembongan Island of Nusa Penida sub-district).
(xvii) Suana protection forest covers an area of 329.50 ha and Sakti protection forest covers an area of 273 ha, both are located in Nusa Penida sub-district of Klungkung District.

c) Biodiversity

Biodiversity of Protected Flora. Types of protected flora in Bali comprises of 22 species. Some of them presents rare plants, which distribution categorized as endemic or its population in endangered condition (see **Appendix 5**).

Biodiversity of Protected Fauna. Types of protected fauna in Bali comprises of birds (*aves*) and mammals, reptile, insects, and anthozoa and mollusks (*bivalva*).

4.1.1.3 Physical Cultural Resources

Referring to Kepres No. 32/1990, there are some places identified as ones have physical cultural and religious values, comprising of:

a) Sacred Areas

Sacred areas are ones respected by Hindu people such as mountain, hill, lake, spring, campuhan, sea, and beach.

- The location distribution of the sacred mountain area includes an area with a slope of at least 45 degrees from the slope of the mountain's foot to the mountain peak.
- The location distribution of the holy area includes Lake of Batur, Lake of Beratan, Lake of Buyan, and Lake of Tamblingan. The category of the lake sacred area is likened to the water catchment area.
- The location distribution of the holy campuhan encompasses all the confluence of two rivers'flow in Bali. Campuhan holy area is equalized with river's riparian-zone at 50 meter wide that has the potential for moderate flooding.
- The location distribution of the coastal holy area includes places on the beach that are used for *melasti* ceremonies throughout the coast of Bali Province. The coastal holy area is equalized with the border area of the beach.
- The location distribution of the sea holy area includes the marine aquatic area which functioned as a place to hold religious ceremonies for Hindus in Bali. The sea holy area is equalized with the sea aquatic area which functioned as a place to hold religious ceremonies for Hindus.
- The location distribution of the holy springs includes places of springs that are used to hold religious ceremonies for Hindus in Bali. The holy area around the spring is equalized with the sprint riparian area around the spring.

b) Sacred Places

The area of the Holy Place is the area around the temple which needs to be preserved within a certain radius according to the status of the temple as stipulated in the Bhisama Purity of the Parisadha Hindu Dharma Indonesia Central Temple (PHDIP) 1994, namely:

- Sacred area around Sad Kahyangan Temple with a radius of at least apeneleng regal or equivalent to 5,000 (five thousand) meters from the outer side of the dissipation wall;
- The area of the shrine around the Dang Kahyangan Temple with a radius of at least apeneleng alit is equivalent to 2,000 (two thousand) meters from the outer side of the temple wall, and
- Sacred area around the Pura Kahyangan Tiga and other temples, with a radius of at least Apenimpug or Apenyengker.

4.1.2 Baseline on Social and Indigenous People[20]

Bali is one of the provinces in Indonesia that lies between Java and Lombok Islands. The capital of the province is Denpasar, located in the southern part of the island. The total area of Bali Province is 5,636.66 km^2 or 0.29% of the total area Indonesian archipelago.

The governance of Bali Province is divided into eight regencies and one municipality, namely Jembrana, Tabanan, Badung, Gianyar, Klungkung, Bangli, Karangasem, Buleleng regencies, and Denpasar City. The data in the next sections for social baseline in this document would be based on the regencies and municipality, unless mentioned specifically.

4.1.2.1 Population

Based on projected population figures, in 2017 the total number of population in Bali is 4,246,500 people made up of 2,138,400 (50.36%) of male and 2,108,100 (49.64%) of females. With an area of 5,636.66 km^2, the population density in Bali has reached 753 people/km2. The lowest density was in Jembrana, 327 people/km^2 and the highest Denpasar with 7155 people/km^2. The Population, Population Growth Rate and Population Density by Regency/City in Bali Province, 2010, 2015, and 2017 is detailed in the table below.

Table 4 Population, Population Growth Rate and Population Density by Regency/City in Bali Province, 2010, 2015, and 2017

Regency/ Municipality	Number of Population (thousand)				Annual Population Growth Rate (%)		Population Density/ km^2
	2010	2015	2016	2017	2010 –15	2016 - 17	
1. Jembrana	262.6	271.6	273.3	274.9	0.68	0.59	327
2. Tabanan	422.3	435.9	438.5	441.0	0.64	0.57	525
3. Badung	546.7	616.4	630.0	643.5	2.43	2.14	1538
4. Gianyar	471.6	495.1	499.6	503.9	0.98	0.86	1369
5. Klungkung	171.1	175.7	176.7	177.4	0.53	0.40	563
6. Bangli	216.1	222.6	223.8	225.1	0.59	0.58	432
7. Karangasem	397.8	408.7	410.8	412.8	0.54	0.49	492
8. Buleleng	626.2	646.2	650.1	653.6	0.63	0.54	479
9. Denpasar	793.0	880.6	897.3	914.3	2.12	1.89	7155
Bali	**3907.4**	**4152.8**	**4200.1**	**4246.5**	**1.23**	**1.10**	**753**

Source: Bali Province in Figure, Statistic Office Bali Province, 2018

The sex ratio (the ratio of male population per 100 female population) in Bali was 101.44 in 2017. The highest sex ratio of all local government areas was 104.27 for Denpasar Municipality while the lowest sex ratio was Klungkung Regency at 97.77.

[20] In accordance of AIIB IPs definition and the IPs list published by the Indonesian Social Ministry and Indigenous Peoples Alliance of the Archipelago (AMAN – *Aliansi Masyarakat Adat Nusantara*), until end of 2019 no Indigenous People were verified nor certified in Bali and East Java (Jatim). However the web indicates there is 2 new communities noted and 1 registered in Jatim, and 2 communities noted in Bali. Since the communities are still in the early stages of registration, the names are not to be disclosed. However these communities will be subject to our screening checklist if falling within the boundaries of our subproject. The list can be accessed on https://brwa.or.id/

Table 5 Populations and Sex Ratio by Regency/City in Bali Province 2017

Regency/ Municipality	Number of Population (thousand)			Sex Ratio
	Male	Female	Total	2010 – 2015
1. Jembrana	136.4	138.5	274.9	98.48
2. Tabanan	219.0	222.0	441.0	98.65
3. Badung	328.2	315.3	643.5	104.09
4. Gianyar	254.4	249.5	503.9	101.96
5. Klungkung	87.7	89.7	177.4	97.77
6. Bangli	113.9	111.2	225.1	102.43
7. Karangasem	306.5	206.3	412.8	100.10
8. Buleleng	325.6	328.0	653.6	99.27
9. Denpasar	466.7	447.6	914.3	104.27
Bali	**2138.4**	**2108.1**	**4246.5**	**101.44**

Source: Bali Province in Figure, Statistic Office Bali Province, 2018

The population by age group is shown in the next table.

Table 6 Populations by Age Group in Bali Province 2017

Age Group	Male	Female	Total
0 – 4	165.4	158.9	324.3
5 – 9	174.2	164.8	339.0
10 – 14	181.2	170.7	351.9
15 – 19	166.5	157.9	324.4
20 – 24	163.8	158.9	322.7
25 – 29	173.0	166.0	339.0
30 – 34	165.8	158.8	324.6
35 – 39	164.8	163.9	328.7
40 – 44	168.3	166.0	334.3
45 – 49	161.8	159.3	321.1
50 – 59	102.2	104.3	206.5
60 – 64	77.6	80.4	158.0
65 – 69	56.2	61.5	117.7
70 – 74	38.7	45.2	83.9
75+	41.0	54.3	95.3
Total	**2138.4**	**2108.1**	**4246.5**

Source: Bali Province in Figure, Statistic Office Bali Province, 2018

4.1.2.2 Education

Based on data of the Education Department of Bali Province, the number of elementary school pupils during 2016 – 2017 reached 418,444 students, while numbers of teachers were 27,655. This means that the pupil-teacher ratio (which means the number of pupils

taught by one teacher) at primary level was 1:15. At junior level, the number of students increased from 203,924 persons in 2015/2016 to 204,924 students in 2016/2017. With 13,387 teachers, the pupil-teacher ratio is 1:15.

In high schools the number of students in 2016/2017 was 88,937. With 4,969 teachers, the pupil-teacher ratio is 1:17. The number of students at vocational institutions in 2016/2017 was 92,088. With 3,681 teachers, the pupil-teacher ratio was 1:25.

4.1.2.3 Labor Force, Livelihood and Poverty

In Bali Province, the employment structure is shown in Tables 7 & 8.

The number of working age population was 3,235,563, consisting of 1,619,455 males and 1,616,108 females. Within a year, the total working age population has increased 1.44% from the previous year (2016) of 3,189,108 people. Based on the number of working age population, 2,434,450 is labor force which consist of 2,398,307 working people and 36,143 unemployment as shown in the table below.

Table 7 Population Aged 15 Years and Over by Regency/City and Type of Activity in Bali Province 2017

Regency/ Municipality	Economically Active (Working Age)			Economically Inactive (Non Working Age)	Total
	Working	Unemployment	Total		
1. Jembrana	162665	1100	163765	44525	208290
2. Tabanan	246754	4499	251253	100999	352252
3. Badung	343229	1653	344882	144810	489692
4. Gianyar	300370	3100	303470	84751	388221
5. Klungkung	103972	984	104956	31227	136183
6. Bangli	142559	686	143245	31227	136183
7. Karangasem	238742	1732	240474	66357	306831
8. Buleleng	358107	8833	366940	119463	486403
9. Denpasar	501909	13556	515465	181970	697435
Bali	**2398307**	**36143**	**2434450**	**801113**	**3235563**

Source: Bali Province in Figure, Statistic Office Bali Province, 2018

From the 2017 Sakernas data, tourism that includes wholesale and retail trade, hotels & restaurants, provides the highest share of employment followed by agriculture and then manufacturing. As urbanisation and the focus of the economy stays on tourism, this trend is expected to intensify as more agricultural land use changes to tourism.

In 2017, the population of 15 years old and above that worked at Trade, Restaurants, and Accommodation sector reached 760,093 people (31.69%). In agriculture sector, the number was 466,307 (19.44%). Table 8 below shows more detail.

Table 8 Number of Population Aged 15 Years and Over Who Worked During Previous Week by Industrial Origin and Sex in Bali Province 2017

Main Industry	Sex			%
	Male	Female	Total	
1. Agriculture, Forestry, Hunting, and Fisheries	266428	199879	466307	19.44%

2. Mining and Quarrying	4798	1738	6536	0.27%
3. Manufacturing Industry	141445	199776	341221	14.23%
4. Electricity, Gas, and Water	5753	495	6248	0.26%
5. Construction	157968	21166	179134	7.47%
6. Wholesale Trade, Retail Trade, Restaurants, and Hotels	372167	387926	760093	31.69%
7. Transportation, Warehousing, and Communication	84518	10044	94562	3.94%
8. Financial, Insurance, Real Estate, and Business Service	56260	43524	99784	4.16%
9. Community, Social, and Personal Services	226370	218052	444422	18.53%
Total	**1315707**	**1082600**	**2398307**	100.00%

Source: Bali Province in Figure, Statistic Office Bali Province, 2018

P**overty.** The poverty line[21] in 2017 amounted to IDR364,064 in Bali, where the poverty line in urban and rural areas was IDR371.118 and IDR350.826 respectively. During the period of 2016 - 2017, the poverty line increased by 3.83% in urban areas and 6.95% in rural, compared to the previous period (2015 – 2016). Table 10 below shows that although the number of poor people in Bali was increased from 2016 of 178,180 to 180,130 in 2017, the percentage is the same, 4.25%, considering the increased number of the population during the period of 2016 – 2017. However, during the period of 2015 - 2017, the overall percentage of poor people decreased from 4.74 % to 4.25% that suggests an improving economic situation driven by increasing tourism.

Table 9 Numbers and Percentage of Poor People by Regency and Municipality in Bali Province 2017

Regency/ Municipality	Number of Poor People (000)			Percentage of Poor People		
	2015	2016	2017	2015	2016	2017
1. Jembrana	15.83	14.83	14.78	5.84	5.33	5.38
2. Tabanan	24.05	21.90	21.66	5.52	5.00	4.92
3. Badung	14.40	12.91	13.61	2.33	2.06	2.06
4. Gianyar	22.89	22.13	22.42	4.61	4.44	4.46
5. Klungkung	12.11	11.21	11.15	6.91	6.35	6.29
6. Bangli	12.74	11.66	11.76	5.73	5.22	5.23
7. Karangasem	30.33	27.12	27.02	7.44	6.61	6.55
8. Buleleng	43.43	37.55	37.48	6.74	5.79	5.74
9. Denpasar	20.94	19.17	20.70	2.39	2.15	2.27
Bali	**196.71**	**178.18**	**180.13**	**4.74**	**4.25**	**4.25**

Source: Bali Province in Figure, Statistic Office Bali Province, 2018

[21] To measure poverty, BPS-statistics Indonesia has used the concept of basic needs approach. Poverty is viewed as economic inability to fulfill food and non-food basic needs, which are measured by consumption/expenditure. The method used is calculating poverty line, which consists of two components: food poverty line (FPL) and non-food poverty line (NFPL). The poverty line was calculated separately for urban and rural areas.

4.1.2.4 Sociocultural

Land use. Agriculture land in Bali was 353,491 hectares, made up of wet paddy wet field 79,526 hectares and non-wet paddy field 273,965 hectares. While non-agricultural land reached 210,175 hectares. The use of non-rice field agriculture or land currently unused for agriculture even though it may be zoned for agriculture was highest in the Buleleng regency, which in 2017 amounted to 115,365 hectares, and then Karangasem regency 53,043 hectares. Much of this land is in transition to urban and tourist use.

The majority of landholdings in Bali are individually or family owned under a freehold title (Hak Milik), even in a communally administered area such as a subak (traditional the water management (irrigation) system for paddy fields on which was developed in the 9th century). Ownership of land within this denomination can be transferred from an individual to another individual (or legal entity) based on contractual agreements, but cannot be transferred to individual foreigners.

Religion and Culture. The residents of Bali in mostly follow the Hindu religion, which reached 3,247,283 people or 83.46% of the total population. The detail can be seen in the table below. The Balinese population in Bali Province is making up 89% of the population in the province. Other parts of the population were migrants from Java, Lombok, Sumatra, and other parts of Indonesia, with 8% Javanese and Madurese, and other 1%. The most widen spoken languages used in Bali Province were Balinese and Indonesian, while most common spoken language around the tourist areas is Indonesian The Indonesian Social Ministry and Indigenous Peoples Alliance of the Archipelago (AMAN – *Aliansi Masyarakat Adat Nusantara*) on their website (https://brwa.or.id/) noted possible presence of IPs in Bali though not yet certified/verified. [22].

Table 10 Religions in Bali Province 2017

Regency/ City	Moslem	Protes-tant	Catho-lic	Hindu	Budha	Kong-huchu	Others	Not Stated	total
Jembrana	69608	2890	1865	186319	756	2	0	198	261638
Tabanan	26070	2691	1195	389125	1533	14	2	283	420913
Badung	96166	18396	10234	414863	2475	32	125	1040	543331
Gianyar	18834	1692	667	447225	799	28	41	491	469777
Klungkung	7794	372	138	161589	430	0	0	220	170543
Bangli	2185	197	56	212325	113	1	0	476	215353
Karangasem	16221	398	197	379113	334	1	4	219	396487
Buleleng	57467	3132	916	557532	3127	97	15	1839	624125
Denpasar	225899	34686	16129	499192	11589	252	95	747	788589
Bali	**520224**	**64454**	**31397**	**3247283**	**21156**	**427**	**282**	**5513**	**3890756**

Source: Bali Province in Figure, Statistic Office Bali Province, 2018

Balinese culture is a mix of Balinese Hindu-Buddhist religion and Balinese customs. It is most known for its dance, drama and sculpture. The island is also known for its Wayang Kulit or Shadow Play theatre. The Balinese have been keeping the balance between embracing modern life and preserving their ancestors' customs, resulting in a fascinating

[22] The term Indigenous Peoples is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees: (a) self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; (b) collective attachment to geographically distinct habitats or ancestral territories in the Project area and to the natural resources in these habitats and territories; (c) customary cultural, economic, social or political institutions that are separate from those of the dominant society and culture; and (d) a distinct language, often different from the official language of the country or region. AIIB ESS 3: Indigenous Peoples.

community. As Indonesia's biggest Hindu community, the Balinese are devoted to their religious practices, from daily offerings to *ngaben* funeral rites. Being accustomed to tourists swarming their land, Balinese are also beyond friendly, allowing tourists to take part on many of their captivating rituals. More than just a spiritual community, Balinese are also known as prominent artists – generations of silversmiths, traditional dancers and music (gamelan), wood carvers, and painters.

4.1.2.5 Transportation

The length of roads in Bali in 2017 was 629.39 km of national roads and 743.34 km of provincial roads. Classified by the surface conditions, roads with good conditions was 764.68 km (55.70%), intermediate condition was 469.09 km (34.17%), and damaged condition was 136.07 km (9.91%), as seen on the table below.

For sea freight traffic, the number of passengers who arrived and departed through four ports of Padangbai, Gilimanuk, Celukan Bawang, and Benoa during 2017 reached 7,584,306 and 7,886,659 peoples, respectively.

For air transport, the number of departing flights reached 73,213 flights and the number of arrival flights was 73,200. The number of passenger departures and arrives were of 10,634,042 and 10,245,800 people.

Table 11 Lengths of Roads by Regency/Municipality and Status in Bali Province 2017

Regency/ Municipality	Road Status		Total	
	National Roads (km)	Provincial Roads (km)	Length of Roads (km)	Percentage (%)
1. Jembrana	72.63	29.48	102.11	7.44
2. Tabanan	65.73	136.72	202.45	14.75
3. Badung	63.62	61.18	124.80	9.09
4. Gianyar	64.33	85.52	149.85	10.92
5. Klungkung	37.71	9.34	47.05	3.43
6. Bangli	21.19	125.14	146.33	10.66
7. Karangasem	97.97	145.98	243.95	17.77
8. Buleleng	156.34	106.65	262.99	19.16
9. Denpasar	49.88	106.65	93.21	6.79
Bali	**629.39**	**743.34**	**1372.72**	**100.00**

Source: Bali Province in Figure, Statistic Office Bali Province, 2018

4.1.2.6 Potential Vulnerable Groups

According to the AIIB Environmental and Social Policy, vulnerable groups or individuals refer to people who, by virtue of factors beyond their control, may be more likely to be adversely affected by the Project's environmental or social impacts and may be more limited than others in their ability to claim or take advantage of Project benefits.

Based on the definition and the nature of the project, the community members below can

be categorised as potentially vulnerable in Bali:

a. People living below the poverty line
b. Elderly people whose access to their usual activities was hampered or closed either permanently or temporarily because of the project
c. Disable community members whose access to their usual activities was hampered or closed either permanently or temporarily because of the project
d. Children in the community whose access to their usual activities was hampered or closed either permanently or temporarily because of the project
e. Indigenous groups and/or members of ethnic minority

4.2 Baseline Information on East Java Region

4.2.1 Baseline on Environment

4.2.1.1 Physical Resources

1) Administrative Area

The area of East Java Province with an area of 47,799.75 km2, is a province that has the largest area in Java. The borders of East Java Province include: in the north it is bordered by South Kalimantan Province; the east is bordered by the Province of Bali; the south border is the Indian Ocean; and in the western part is bordered by Central Java Province.

Based on the Minister of Home Affairs Regulation No. 137 of 2017 concerning Government Administrative Region Codes and Data, administratively East Java Province consists of 38 Districts / Cities (29 Districts and 9 Cities), 666 sub-districts, 777 *kelurahan* and 7,724 Villages. Compared with Minister of Home Affairs Regulation No. 56 of 2015, there has been a development in the number of sub-districts from 664 to 666 due to expansion of 2 sub-districts in Banyuwangi District and Mojokerto City. The number of villages, villages, and other Districts / municipal areas remain fixed.

2) Geography

East Java Province is one of the provinces located on the island of Java and geographically lies between 111 ° 0 'to 114 ° 4' East Longitude, and 7 ° 12 'to 8 ° 48' South Latitude. In general, the East Java region is divided into two major parts, namely East Java mainland by 90% and the Madura Islands region around 10%.

Based on the geographical conditions. the area of East Java Province is divided into 3 types, namely coastal areas, mountainous areas and islands.

- **Coastal Areas.** The north, south and sea coast in the East Java Province region has an expanse of mangrove forests, seagrass beds and surrounding coral reef ecosystems which must be preserved. The three ecosystems have different characteristics, traits and characters but are interrelated with one another.
- **Mountain Areas**. In general, the area of East Java Province is a fertile area with various types of rocks originating from the Holocene, Pleistocene, Pliocene, Miocene, and Quaternary regions which are influenced by volcanoes and one of them is the highest mountain on Java Island, called Mount Semeru. The mountain ranges in East Java Province are spread from the border in the east with the presence of Mount Lawu, Mount Kelud, Mount Welirang, Mount Arjuno, Mount Semeru, Mount Lamongan, Mount Bromo, Mount Argopuro, Mount Pendil, Mount Suket, Mount Ijen, Mount Merapi, Mount Raung.
- **Island Areas**. The small islands in East Java which are under the East Java administrative area consist of 445 islands scattered in Pacitan District (31 islands), Tulungagung District (19 islands), Blitar District (28 islands), Malang District (100 islands), Situbondo District (5 islands), Sumenep District (121 islands), Gresik District (13 islands), Sampang District (1 island), Trenggalek District (57 islands), Sidoarjo District (4 islands), Banyuwangi District (15 islands), Jember District (50 island), and Probolinggo District (1 island). Of the several regions, the region that has the most islands is Sumenep District.

3) Topography

East Java Province can be divided into three plains regions, namely highlands (plateau), medium land and low land. The plateau is an area with an average altitude above 100 meters above sea level (Magetan, Trenggalek, Blitar, Malang, Batu, Bondowoso). Medium land has an elevation of 45-100 meters above sea level (Ponorogo, Tulungagung, Kediri, Lumajang, Jember, Nganjuk, Madiun, Ngawi). The remaining Districts / cities (20) are located in the lowlands, with an altitude below 45 meters above sea level.

Topographically the mainland area of East Java can be divided into several height area, namely:

- Altitude 0-100 meters above sea level; covering 41.39% of the total area with a relatively flat and undulating topography.
- Altitude 100-500 meters above sea level; covering 36.58% of the total area with undulating and mountainous topography.
- Altitude of 500-1000 meters above sea level; covering 9.49% of the area with hilly conditions.
- Altitude of more than 1,000 meters above sea level; covering 12.55% of the total area with mountainous and steep topography.

4) Geology

East Java Province has several active volcanoes as part of the Pacific Ring of Fire which spread from the west to the eastern border including Mount Lawu, Mount Kelud, Mount Wilis, Mount Bromo, Mount Argopuro, and Mount Ijen with the highest mountain is Mount Semeru. The existence of volcanoes provides many benefits, where the volcanic ash contains elements that fertilize the soil and its natural beauty into a tourist destination that is very attractive for tourists. The volcano strip which is still active is a threat of natural disasters of volcanic eruptions, in the form of lava landslides, lava flows, hot clouds, poisonous gas or volcanic earthquakes that need to be watched out for. The strip is also prone to landslides and tectonic earthquakes, because the soil is not so congested, the layer of soil is thick with steep slopes and is located on fault and slip structures.

5) Soil

There are 23 soil types in East Java which are spread in various regions with varying characteristics. Distribution of soil types can be seen on the following soil map. Colour differences indicate different types of soil. The diversity of colours on the map indicates that the types of soil in East Java are diverse, which will give different characteristics, potentials and problems for each region.

6) Hydrology

East Java Province is fed by 2 (two) national strategic watersheds (DAS), the Brantas watershed and Bengawan Solo watersheds. The Brantas watershed is the largest river in East Java with a length of ± 320 km that flows in a circle and there is an active volcano in the middle, namely Mount Kelud. The Brantas River, which originates from the slope of Mount Arjuno, first flows eastward through Malang City, then turns south, then in the Kepanjen area the Brantas River turns west to meet the Lesti River which originates from Mount Semeru, and meets the Ngrowo River in Tulungagung, and the Brantas River turns north through Kediri City and in the Kertosono area the Brantas River meets Widas river, then east flows to Mojokerto City and is divided into 2 (two) directions, towards Surabaya and to Porong which then disembogue into the strait Madura. Bengawan Solo originated from Central Java, eventually disembogue into Gresik. On the slopes of Mount Lawu near the border with Central Java lies Telaga Sarangan, a natural lake. The main dams in East Java include Sutami Dam and Selorejo Dam, which are used for irrigation, fish aquaculture, and tourism.

Hydrologically the area of East Java Province consists of surface water and ground water. Surface water includes the River Basin (RB) and reservoirs, while ground water is in the form of springs. The distribution of River Basin includes 7 (seven) River Basins, namely Bengawan Solo RB, Brantas RB, Welang-Rejoso RB, Pekalen-Sampean RB, Baru-Bajulmati RB, Bondoyudo-Bedadung RB, Madura RB.

7) Climatology

East Java has a wet tropical climate and generally has less rainfall than the western part of Java. Average rainfall is 1,900 mm per year (between 1,500 mm / year - 2,700 mm / year). Average air temperatures range from a minimum of 15.2 ° C and a maximum of 34.2 ° C. Based on the Schmidt and Ferguson classification system, most regions (52%) have climate type D with air humidity ranging from 40% to 97%.

East Java also has a monsoon season pattern, with six months of the rainy season and six months of the dry season. Climate and seasons in East Java are also influenced by global and regional phenomena. The global phenomena in question are El Niño and La Niña, Dipole Mode and Maddem Jullian Oscillation. El Niño is characterized by rising sea level temperatures in the Central Pacific Equator, which if at the same time the condition of water temperatures in Indonesia is quite low, it will cause rainfall to decrease dramatically, while La Niña causes an increase in rainfall due to warming sea surface temperatures in the Indonesia aquatic area is compared to the aquatic area of Central Pacific Equator.

8) Ecosystem (Ecoregion)

To map ecoregions, we can use the boundaries of the similarity of morphological and morphogenesis features of landforms in the land system, using the landscape concept approach. Morphological aspects characterize the uniqueness of land surface shapes that can be known from the height of local relief and slope, while the morphogenesis aspects characterize the process of origin (genetic) formation of landforms.

The ecoregion in East Java Province is dominated by the Ecoregion of Pyroclastic Material of Fluvial-volcano Plain with an area of 710,427.74 ha or 14.80% of the total area of East Java Province. The second largest is the Volcanic Plain of the Volcano Pyroclastic Material covering an area of 655,316.29 ha or 13.65% of the total area of East Java.

The dominance of volcanic ecoregions with pyroclastic material in East Java is due to the large volcanic spread in the central region stretching from west to east. The third largest ecoregion in East Java is the Alluvial Material of Alluvium Plain covering an area of 413,429.73 ha or 8.61% of the total area of East Java. The fourth widest ecoregion is Rembang's structural fold (Anticlinal) with an area of 346,031.63 ha or 7.21% of the area of East Java. The fifth largest ecoregion is Randublatung Synclinal valley with sandstone and claystone Napalan materials, with an area of 320,609.10 ha or 6.68% of the total area of East Java.

9) Land Use

In general, land use in East Java Province is divided into 2 (two) major parts, namely:

- **Cultivation Area**, which is a designated area with the main function for cultivation on the basis of the conditions and potential of natural resources, human resources, and artificial resources. The use of cultivated land is approximately 4,201,403.70 ha or 87.90% of the total area of East Java Province. The description of changes in the proportion of land use in East Java shows a declining trend in the agriculture area. Wetland agriculture has an area of approximately 911,863 ha or 19.08% of the total area of East Java Province while it is still accompanied by controlling the built land so as not to convert the area of wetland agriculture, especially command area with technical irrigation system.

- **Protected Area**, i.e. an area designated with the main function of protecting environmental sustainability which includes natural and man-made resources. The protected area has an area of approximately 578,374 ha or about 12.10% of the total area of East Java Province, including a strict protected area which contains a Nature Reserve of approximately 10,958 ha, a Wildlife Reserve of approximately 18,009 ha, a National Park covering an area of approximately 176,696 ha, Great Forest Park Area covering an area of approximately 27,868.3 ha and Nature Tourism Park area of ± 298 ha (Forestry Minister's Decree Number 395 / Menhut-II / 2011).

10) Disaster Prone Areas

The area that is prone to natural disasters is an area that is indicated as an area with frequent disaster. In the East Java Province, the disaster-prone areas are classified as landslide-prone areas, tidal-prone areas, flood-prone areas and disaster-prone areas of forest fires as well as areas with strong winds and tornadoes.

Tidal Disaster Prone Areas. Tidal-prone areas in East Java Province are located along the coast in East Java both bordering the Java Sea, the Bali Strait, the Madura Strait, the Indian Ocean and in the islands.

Flood Prone Areas. There are several locations in East Java which are prone area to flood, especially in lowland and coastal areas.

Areas Prone to Forest Fires and Tornado. Areas prone to forest fires and strong winds in East Java generally occur in the areas of Mount Arjuno, Mount Kawi, Mount Welirang, Mount Kelud and areas with potential tornado.

Volcano Eruption-Prone Areas. Volcano eruption-prone areas in East Java are on the slopes of an active volcano. There are 7 active volcanoes in East Java with locations that are vulnerable areas. According to Government Regulation No. 26 of 2008 concerning the National Spatial Planning, the criteria for determining Volcano Eruption-Prone Areas include: the area around the crater or caldera; and areas that are often affected by hot clouds, lava flows, falling rocks and/or toxic gas flows.

Earthquake Prone Areas. Earthquake prone areas in East Java Province are in the region of: Banyuwangi District, Blitar District, Bondowoso District, Jember District, Jombang District, Kediri District, Lumajang District, Madiun District, Magetan District, Malang District, Mojokerto District, Nganjuk District, District Pasuruan, Ponorogo District, Probolinggo District, Situbondo District, Trenggalek District, Tulungagung District.

Tsunami Prone Areas. Based on geological conditions, besides being rich in natural resources in the southern region of Java, this area also has high level vulnerability to natural disasters, such as prone to tectonic and volcanic earthquakes along the ring of fire that crosses Sumatra - Java - Bali - Nusa Tenggara - Banda - Maluku against the tsunami disaster.

The level of tsunami risk in East Java is classified into:

- High Tsunami Risk, covering Pacitan District, Trenggalek District, Tulungaggung District, Malang District, Lumajang District, Jember District, and Banyuwangi District.
- Medium Tsunami Risk, covering Tuban District, Lamongan District, Gresik District, Surabaya City, Sidoarjo District, Pasuruan District/City, Probolinggo District/City, Situbondo District, Bangkalan District, Sampang District, Pamekasan District, and Sumenep District.
- Low Tsunami risk, covering Ngawi District, Bojonegoro District, Magetan District,

Madiun District/City, Ponorogo District, Nganjuk District, Jombang District, Kediri District/City, Mojokerto District/City, and Bondowoso District.

Mud Flood Prone Areas. The mudflow area includes areas affected by the danger of mudflow, toxic gas pollution, and land subsidence in the Sidoarjo District.

Drought-Prone Areas. Based on data from the Regional Disaster Management Agency of East Java Province, the level of drought risk is divided into:

- Low drought risk, covering Madiun City and Kediri City
- Moderate drought risks, including Tuban District, Magetan District, Madiun District, Kediri District, Surabaya City, Sidoarjo District, Pasuruan City, Probolinggo City, Mojokerto City, Blitar City, and Batu City.
- High Drought Risk, covering Ngawi District, Bojonegoro District, Nganjuk District, Lamongan District, Jombang District, Gresik District, Mojokerto District, Ponorogo District, Pacitan District, Trenggalek District, Tulungagung District, Blitar District, Malang District /City, Pasuruan District, Probolinggo District, Lumajang District, Bondowoso District, Jember District, Situbondo District, Banyuwangi District, Bangkalan District, Sampang District, Pamekasan District, and Sumenep District.

4.2.1.2 Biological/Natural Resources

Referring to Local Regulation of East Java No. 5/2012 on Regional Spatial Plan 2011 – 20131, biological and natural resources located in several legally stated areas as follows:

Wildlife sanctuary in East Java cover an area of approximately 18,009 ha which represents national protected areas as follows:

a) Highland Wildlife Sanctuary located in Kecamatan Krucil, Sumber Malang, Panti, dan Sukorambi, Kabupaten Situbondo, Kabupaten Bondowoso, Kabupaten Probolinggo, and Kabupaten Jember covering at least 14,177 ha; and

b) Wildlife Sanctuary of Bawean Island located in Kecamatan Sangkapura and Kecamatan Tambak, Kabupaten Gresik covering at least 3,832 ha.

The natural sanctuaries (CA) in East Java spread over several areas as follows:

a) Besowo Gadungan in Kabupaten Kediri covering an area of 7 ha;

b) Ceding in Kabupaten Bondowoso covering an area of 2 ha;

c) Kolbu River Iyang Plateu in Kabupaten Bondowoso covering an area of 19 ha;

d) Watangan Puger I in Kabupaten Jember covering an area of 2 ha;

e) Curah Manis I–VIII in Kabupaten Jember covering an area of 17 ha;

f) Mount Abang in Kabupaten Pasuruan covering an area of 50 ha;

g) Mount Picis in Kabupaten Ponorogo covering an area of 28 ha;

h) Gunung Sigogor in Kabupaten Ponorogo covering an area 190,50 ha;

i) Guwo Lowo/Nglirip in Kabupaten Tuban covering an area of 3 ha;

j) Ijen Crate Merapi Unggup-Unggup in Kabupaten Bondowoso and Kabupaten Banyuwangi covering an area of 2,468 ha;

k) Manggis Gadungan in Kabupaten Kediri covering an area of 12 ha;

l) Nusa Barong in Kabupaten Jember covering an area of 6,100 ha;

m) Pancuran Ijen I and II in Kabupaten Bondowoso covering an area of 9 ha;

n) Bawean Island in Kabupaten Gresik covering an area of 725 ha;

o) Noko and Nusa Islands in Kabupaten Gresik covering an area of 15 ha;

p) Saobi Island in Kangean Islands of Kabupaten Sumenep covering an area of 430 ha;

q) Sempu Island in Kabupaten Malang covering an area of 877 ha; and

r) Janggangan Rogojampi I/II in Kabupaten Banyuwangi covering an area of 7.50 ha.

East Java also has several national parks covering at least a total area of 180,202 ha consisting of:

a) Bromo Tengger Semeru covering at least 50,276 ha;

b) Baluran covering at least 25,000 ha;

c) Meru Betiri covering at least 58,000 ha;

d) Alas Purwo covering at least 43,420 ha; and

e) Baluran Water covering at least 3,506 ha.

Natural Tourism Park (TWA) in East Java covering at least 298 ha consisting of:

a) TWA Tretes in Kabupaten Pasuruan with an area of 10 ha;
b) TWA Mount Baung in Kabupaten Pasuruan with an area of 195 ha; and
c) TWA Ijen Merapi Unggup-Unggup in Kabupaten Bondowoso and Kabupaten Banyuwangi with an area of 92 ha.

The detail description of natural/biological resource in East Java for each protected and conservation areas presented in http://bbksdajatim.org, describing legal basis, location and boundaries, types of ecosystem, and biological resources (flora and fauna).

4.2.1.3 Physical Cultural Resources

Referring to Local Regulation of East Java Province No. 5/2012 on Regional Spatial Plan 2011—2031, there are some cultural and scientific sanctuary, comprising of:

- Totok Kerot Statue in Kediri District
- Cungkup Temple, Gayatri Tombs, and Dadi Temple in Tulungagung District;
- Jawi Temple in Pasuruan District;
- Jolotundo Temple in Mojokerto District;
- Penataran Temple and Simping Temple in Blitar District;
- Singosari Temple, Jago Temple, Kidal Temple, and Badut Temple in Malang District;

- Trowulan Area in Mojokerto District;
- Cemetery Complex K.H. Hasyim Asy'ari, K.H. Wachid Hasyim, Gus Dur, and Sayyid Sulaiman in Jombang District;
- Tomb of Asta Tinggi in Sumenep District;
- Batoro Katong Tomb in Ponorogo District;
- Batu Ampar Tomb in Pameksan District;
- Tomb of Maulana Malik Ibrahim, Tomb of Sunan Giri (Giri Kedaton), Tomb of Fatimah Binti Maimun, Tomb of Kanjeng Sepuh, and Mount Surowiti Area in Gresik District;
- Tomb of Sunan Bonang in Tuban District;
- Tomb of Sunan Drajat in Lamongan District;
- Tomb of Syaikona Kholil and Pesarean Aer Mata Ebu in Bangkalan District;
- Recolanang in Mojokerto District;
- Sarchopagus and Megalith sites in Bondowoso District; and
- Tomb of Sunan Ampel and Mbah Bungkul in Surabaya.

The area of cultural and scientific heritage in the form of a building environment and its yard consists of:

- Pendem Van den Bosch Fortress in Ngawi District;
- Preservation of sugar factory buildings in Sidoarjo District, Madiun District, Magetan District, Bondowoso District, Kediri District, and Malang District;
- Tomb of the Proclamator, Bung Karno Museum, Gebang Palace, sacred place (petilasan) of Aryo Blitar, and PETA Monument (Soeprijadi) in Blitar City; and
- Historic buildings and cultural preservation in the city of Surabaya.

The area of cultural preservation and science in the form of botanical gardens, namely Purwodadi Botanical Gardens in Pasuruan District covering an area of approximately 85 ha.

4.2.2 Baseline on Social and Indigenous People[23]

East Java (Indonesian: *Jawa Timur*, abbreviated as *Jatim*) is a province in Indonesia. The capital of the province is Surabaya, the second largest city in Indonesia and a major industrial center. The total area of Jatim Province is 47,800 km^2. Jatim Province can be divided into 2 areas; Jatim mainland and Madura Island. The mainland is about 90% of this province, and the Madura Island is 10%.

The governance of Jatim Province is divided into 29 regencies and 9 municipalities make the total lower level administrative areas of 38. The list of regencies and cities with their areas and populations are as below. The data for Jatim in this section based on Jatim in Number, 2018 unless mentioned specifically.

Table 12 Lists of Regency and Municipality Jatim Province

Regency			Municipality
1. Pacitan	11. Bondowoso	21. Ngawi	1. Kediri
2. Ponorogo	12. Situbondo	22. Bojonegoro	2. Blitar
3. Trenggalek	13. Probolinggo	23. Tuban	3. Malang

[23] See footnote no. 24

4. Tulungagung	14. Pasuruan	24. Lamongan	4. Probolinggo
5. Blitar	15. Sidoarjo	25. Gresik	5. Pasuruan
6. Kediri	16. Mojokerto	26. Bangkalan	6. Mojokerto
7. Malang	17. Jombang	27. Sampang	7. Madiun
8. Lumajang	18. Nganjuk	28. Pamekasan	8.Surabaya
9. Jember	19. Madiun	29. Sumenep	9.Batu
10. Banyuwangi	20. Magetan		

Source: Jatim in Number, 2018

4.2.2.1 Population

The population of Jatim in 2017 was 39,292,972 people, 19,895,094 (51%) females and 19,397,878 (49%) males. Surabaya Municipality was the largest, 2,874,699 people and was followed by those of Malang and Jember Regencies respectively 2,576,596 people and 2,430,185. The population density in Jatim was 822/km^2 in 2017.

Table 13 Population and Population Growth Rate by Regency/Municipality in Jatim Province, 2010, 2016 and 2017

Regency/ Municipality	Number of Population			Annual Population Growth Rate (%)		Population Density/sq.km
	2010	2016	2017	2010 –17	2016 - 17	2017
1. Pacitan	541 799	552 307	553 388	0.30	0.20	398
2. Ponorogo	856 682	868 814	693 104	0.22	0.12	666
3. Trenggalek	675 584	691 295	693 104	0.37	0.26	604
4. Tulungagung	992 317	1 026 101	1 030 790	0.54	0.46	976
5. Blitar	1 118 919	1 149 710	1 153 803	0.44	0.36	863
6. Kediri	1 503 095	1 554 385	1 561 392	0.54	0.45	1 127
7. Malang	2 451 997	2 560 675	2 576 596	0.71	0.62	730
8. Lumajang	1 008 486	1 033 698	1 036 823	0.40	0.30	579
9. Jember	2 337 909	2 419 000	2 430 185	0.55	0.46	786
10. Banyuwangi	1 559 088	1 599 811	1 604 897	0.41	0.32	278
11. Bondowoso	738 383	765 094	768 912	0.58	0.50	504
12. Situbondo	694 092	673 282	676 703	0.60	0.51	405
13. Probolinggo	1 099 011	1 148 012	1 155 214	0.71	0.63	681
14. Pasuruan	1 516 492	1 593 683	1 605 307	0.81	0.73	1 089
15. Sidoarjo	1 949 595	2 150 482	2 183 682	1.62	1.53	3 442
16. Mojokerto	1 028 605	1 090 075	1 099 504	0.95	0.86	1 532
17. Jombang	1 205 114	1 247 303	1 253 078	0.56	0.46	1 124
18. Nganjuk	1 019 018	1 045 375	1 048 799	0.41	0.33	857
19. Madiun	663 476	677 993	679 888	0.35	0.28	655
20. Magetan	621 274	627 984	628 609	0.17	0.10	913
21. Ngawi	818 989	829 480	829 899	0.19	0.05	640

22. Bojonegoro	1 212 301	1 240 383	1 243 906	0.37	0.28	566
23. Tuban	1 120 910	1 158 374	1 163 614	0.53	0.45	634
24. Lamongan	1 180 699	1 188 193	1 188 478	0.09	0.02	667
25. Gresik	1 180 974	1 270 702	1 285 018	1.21	1.12	1 079
26. Bangkalan	909 398	962 773	970 896	0.93	0.84	969
27. Sampang	880 696	947 614	958 082	1.20	1.10	777
28. Pamekasan	1798 605	854 194	863 004	1.11	1.03	1 089
29. Sumenep	1 044 588	1 076 805	1 081 204	0.49	0.41	541
1. Kediri	269 193	281 978	284 003	0.77	0.72	4 480
2. Blitar	132 383	139 117	139 995	0.80	0.63	4 298
3. Malang	822 201	856 410	861 414	0.67	0.58	5 929
4. Probolinggo	217 679	231 112	233 123	0.98	0.87	4 114
5. Pasuruan	186 805	196 202	197 696	0.81	0.76	5 602
6. Mojokerto	120 623	126 404	127 279	0.77	0.69	7 728
7. Madiun	171 305	175 607	176 099	0.39	0.28	5 192
8.Surabaya	2 771 615	2 862 406	2 874 699	0.52	0.43	8 201
9.Batu	190 806	202 319	203 997	0.95	0.83	1 492
Jawa Timur	**37 565 706**	**39 075 152**	**39 292 972**	**0.64**	**0.56**	**822**

Source: Indonesia Population Projection 2010–2035, BPS-Statistics Jawa Timur Province, 2018

The sex ratio (the ratio of male population per 100 female population) in Jatim was 97.50 in 2017. The highest sex ratio of all local government areas was 101.16 for Batu Municipality while the lowest sex ratio was Sumenep Regency at 90.72.

Table 14 Populations and Sex Ratio by Regency/City in Jatim Province 2017

Regency/ Municipality	Number of Population (thousand)			Sex Ratio
	Male	Female	Total	
1. Pacitan	270 192	283 196	553 388	95.41
2. Ponorogo	434 793	435 101	869 894	99.93
3. Trenggalek	344 389	348 715	693 104	98 12
4. Tulungagung	502 516	528 274	1 030 790	95.12
5. Blitar	578 015	575 788	1 153 803	100.39
6. Kediri	783 589	777 803	1 561 392	100.74
7. Malang	1 295 017	1 281 579	2 576 596	101.05
8. Lumajang	506 219	530 604	1 036 823	95.40
9. Jember	1 194 496	1 235 698	2 430 185	96.67
10. Banyuwangi	798 591	806 306	1 604 897	99.04
11. Bondowoso	374 476	394 436	768 912	94.94
12. Situbondo	339 111	346 592	676 703	95.25

13. Probolinggo	563 711	591 503	1 155 214	95.30
14. Pasuruan	795 319	809 988	1 605 307	98.18
15. Sidoarjo	1 097 094	1 086 588	2 183 682	100.97
16. Mojokerto	549 177	550 327	1 099 504	99.79
17. Jombang	623 414	629 664	1 253 078	99.01
18. Nganjuk	521 388	527 411	1 048 799	98.86
19. Madiun	335 588	344 300	679 888	97.47
20. Magetan	306 112	322 497	628 609	94.92
21. Ngawi	405 796	424 103	829 899	95.68
22. Bojonegoro	614 996	628 910	1 243 906	97.79
23. Tuban	574 792	588 822	1 163 614	97.62
24. Lamongan	577 301	611 177	1 188 478	94.46
25. Gresik	637 095	647 923	1 258 018	98.33
26. Bangkalan	463 789	507 105	970 894	91.46
27. Sampang	466 920	491 162	958 082	95.06
28. Pamekasan	419 489	443 515	863 004	94.58
29. Sumenep	514 288	566 916	1 081 204	90.72
1. Kediri	141 609	142 394	284 003	99.45
2. Blitar	69 411	70 584	139 995	98.34
3. Malang	424 811	436 603	861 414	97.30
4. Probolinggo	114 822	118 301	233 123	97.06
5. Pasuruan	97 995	99 701	197 696	98.29
6. Mojokerto	92 587	64 692	127 279	96.75
7. Madiun	85 203	90 896	176 099	93.74
8. Surabaya	1 420 182	1 454 517	2 874 699	97.64
9. Batu	102 585	101 412	203 997	101.16
Jawa Timur	**19 397 878**	**19 895 094**	**39 292 972**	**97.50**

Source: Indonesia Population Projection 2010–2035, BPS-Statistics Jawa Timur Province, 2018

The population by age group is shown in the table below.

Table 15 Populations by Age Group in Jatim Province 2017

Age Group	Male	Female	Total
0 – 4	1463795	1406628	2870423
5 – 9	1527811	1461256	2989067
10 – 14	1550957	1483962	3034919
15 – 19	1571386	1506603	3077971
20 – 24	1525056	1496115	3021171

25 – 29	1428018	1449905	2877923
30 – 34	1410797	1468829	2879626
35 – 39	1443558	1519215	2962773
40 – 44	1455558	1512419	2967521
45 – 49	1412733	1482636	2895369
50 – 54	1280713	1366953	2647666
55 – 59	1101766	1155344	2257110
60 – 64	866941	871967	1738908
65+	1359263	1713262	3072525
Total	**19397878**	**19895094**	**39292972**

Source: Indonesia Population, BPS-Statistics Jawa Timur Province, 2018

4.2.2.2 Education

The number of Elementary School in 2017/2018 period according to the Educational Service of Jatim was 19,407 units with 2,822,774 pupils and 192,612 teachers so one teacher approximately teaches 15 pupils. The number of Junior High School was 4,642 units with 1,232,350 pupils and 91, 458 teachers, with the teacher – pupil ratio of 1:14; and the number of Senior High School was 1,533 units with 528,723 pupils and 39,451 teachers so the teacher – pupil ratio was 1:13.

The numbers of Madrasah Ibtidaiyah (MI – elementary level) was 7,245 units with 930,617 pupils and 82,898 teachers – the ratio was 1:11; the number of Madrasah Tsanawiyah (MTs – junior high level) was 3,562 units with 597,017 pupils and 56,366 teachers – ratio was 1:10, and the number of Madrasah Aliyah (MA – high school level) was 1,692 units with 309,205 pupils and 29,004 teachers with ratio of 1:11.

4.2.2.3 Labor Force, Livelihood and Poverty

The number of people aged 15 years and over in Jatim which economically active was 20.937.716, including 20,099,220 working, with 11,947,824 males and 8,151,396 females, and 838,496 unemployed. Number of people aged 15 years and over in Jatim which uneconomically active was 9,505,442 which make the total number of 30,443,158 of people aged 15 years and over in Jatim.

The number of people age 15 years and over by educational attainment in Jawa Timur which were economically active mostly from primary school with 5,791,078 people, then junior high school and senior high school with 3,779,858 people and 3,134,338. The table below shows the number of people aged 15 years and over with their activities in 2017.

Table 16 Population Aged 15 Years and Over by Regency/City and Type of Activity in Jatim Province 2017

Regency/ Municipality	Economically Active (Working Age)			Economically Inactive (Non Working Age)	Total
	Working	Unemploy-ment	Total		
1. Pacitan	349280	3012	352292	90960	443252
2. Ponorogo	487811	19037	506848	191215	698063

3. Trenggalek	378767	13650	392417	158189	550606
4. Tulungagung	524884	12197	537081	262764	799845
5. Blitar	619050	19085	638135	259986	898121
6. Kediri	826827	27169	853996	345535	1199531
7. Malang	1257912	60699	1318611	670792	1989403
8. Lumajang	500530	149986	515516	292797	808313
9. Jember	1215130	66112	1281242	584211	1865453
10. Banyuwangi	878895	27840	906735	337666	1244401
11. Bondowoso	435036	9286	444322	161857	606179
12. Situbondo	377294	57323	383017	155711	538728
13. Probolinggo	573832	17102	590934	296468	887402
14. Pasuruan	778563	40759	819322	410782	1230104
15. Sidoarjo	1021884	53475	1075359	590868	1666227
16. Mojokerto	589641	31018	620659	226914	847573
17. Jombang	630238	34151	664389	293121	957510
18. Nganjuk	487899	16260	504159	309307	813466
19. Madiun	338495	11170	349665	189555	539220
20. Magetan	375773	148835	390608	113999	504607
21. Ngawi	411125	25130	436255	223211	659466
22. Bojonegoro	665600	25139	690739	288835	979574
23. Tuban	631783	22198	953981	258004	911985
24. Lamongan	612030	26300	638330	291561	929891
25. Gresik	632529	30089	662618	311182	973800
26. Bangkalan	460988	21646	482634	226349	708983
27. Sampang	465897	11834	477731	214207	691938
28. Pamekasan	445268	18133	463401	188551	651952
29. Sumenep	618330	11554	629884	230549	860433
1. Kediri	137918	6770	144688	76935	221623
2. Blitar	74752	2922	77674	30359	108033
3. Malang	411042	31993	443035	240980	684015
4. Probolinggo	114782	4066	118834	57346	176194
5. Pasuruan	94873	4620	99493	48684	148177
6. Mojokerto	64805	2420	67235	30708	97943
7. Madiun	90415	4020	94435	44931	139366
8. Surabaya	1406358	89479	1495837	758351	2254188
9. Batu	112984	2607	115591	42002	157593
Jawa Timur	**20099220**	**838496**	**20937716**	**9505442**	**30443158**

Source: Indonesia Population, BPS-Statistics Jawa Timur Province, 2018

From the 2017 Sakernas data, agriculture and wholesale trade, retail trade, restaurants, and hotels sectors are the two industries with the highest share in Jatim followed by manufacturing industry. In 2017, the population of 15 years old and above that worked in agriculture sector was 6,713,893, in wholesale trade, retail trade, restaurants, and hotels sectors was 4,580,393 and in manufacturing industry was 3,016,837. The detail is seen in the table below.

Table 17 Population Aged 15 Years and Over Who Worked During the Previous Week by Main Industry and Sex in Jawa Timur Province, 2017

Main Industry	Sex			%
	Male	Female	Total	
1. Agriculture, Forestry, Hunting, and Fisheries	4103197	2610696	6713893	33.4%
2. Mining and Quarrying	149823	10616	158435	0.8%
3. Manufacturing Industry	1764569	1252268	3016837	15.0%
4. Electricity, Gas, and Water	49673	6235	55908	0.3%
5. Construction	1401923	21246	1423169	7.1%
6. Wholesale Trade, Retail Trade, Restaurants, and Hotels	2000072	2580321	4580393	22.8%
7. Transportation, Warehousing, and Communication	625460	74521	699981	3.5%
8. Financial, Insurance, Real Estate, and Business Service	3442476	159148	503394	2.5%
9. Community, Social, and Personal Services	1510861	1436349	2947210	14.7%
Total	**11947824**	**8151396**	**20099220**	**100%**

Source: Indonesia Population, BPS-Statistics Jawa Timur Province, 2018

Poverty. The poverty line in 2017 was IDR360,302 in Jatim, with number of poor people reached 4,405,300 or 11.2% from the total population. This number was decreased from 4,638,530 (11.85%) in 2016.

4.2.2.4 Sociocultural

Land use. In 2017, non-wetland farming area in Jatim has been used as dry field farming area, estates and the land temporarily fallowed. Amongst those three categories, land, which was used as dry field farming has been the largest area of 1,115,801.0 hectares of all. While the land temporarily fallowed has been the least of those two, which only covered area of 14,014.2 hectares. Irrigated and non-irrigated wetland paddy fields in Jatim covered area of 1,174,586.4 hectares. Of those figures, the area of irrigated wetland paddy field is 916,837.8 hectares and of non-irrigated is 257,748.6 hectares.

The majority of landholdings in Jatim are individually or family owned under a freehold title (Hak Milik). Ownership of land within this denomination can be transferred from an

individual to another individual (or legal entity) based on contractual agreements.

Culture and Ethnicity. Many different ethnic groups, such as the Javanese, Madurese and Chinese, inhabit the province. Most of the people in East Java adhere to Islam, forming around 96% of the total population. Other religions are also worshipped, such as Christianity, which are mostly worshipped by Chinese Indonesians and immigrants from Eastern Indonesia and North Sumatra, and also Hinduism, which are mostly worshipped by the Tenggerese people in the Bromo Tengger Semeru National Park and the Balinese people inhabiting the easternmost part of the province bordering Bali. The Indonesian language is the official language of the province as well as the whole nation, but Javanese and Madurese are the most frequently used language. Indonesian is only used for inter-ethnic communication and official purposes.

Ethnic Javanese (80%) dominate the Java mainland as well as the total population of the province overall, while ethnic Madurese (18%) inhabit Madura and the Kangean and Masalembu archipelagos. Minorities include distinct Javanese ethnicities such as the Tengger people (100,000) in Bromo[24] and the Osing people (400,000) in Banyuwangi. The Indonesian Social Ministry and Indigenous Peoples Alliance of the Archipelago (AMAN – *Aliansi Masyarakat Adat Nusantara*) on their website (https://brwa.or.id/) noted possible presence of IPs in East Java with one community registered, though not yet certified/verified.

4.2.2.5 Transportation

Length of highway in Jatim based on province road was 1,421.00 km. About 41.15% of the total lengths of provincial roads in 2017 were in the good category, 47.75% in the medium category, mild damage is 10.14% and weight is 0.96%. Culverts and bridges in good category are 78.03% and 94.37% respectively.

For air transport, the international arrival and departure aircraft occurred was 580 and 577 units. For domestic there were 6,259 and 6,227 units. In 2017, the number of passengers arrived from international and domestic destinations was 1,003,707 people and 9,094,221 people respectively, while for departure passengers for international and domestic destinations there were 983,777 and 9,046,739 people, respectively.

4.2.2.6 Potential Vulnerable Groups

According to the AIIB Environmental and Social Policy, vulnerable groups or individuals refer to people who, by virtue of factors beyond their control, may be more likely to be adversely affected by the Project's environmental or social impacts and may be more limited than others in their ability to claim or take advantage of Project benefits.

Based on the definition and the nature of the project, in Jatim Province the community members below can be categorised as potentially vulnerable:

a. People living below the poverty line
b. Elderly people whose access to their usual activities was hampered or closed either permanently or temporarily because of the project
c. Disable community members whose access to their usual activities was hampered or closed either permanently or temporarily because of the

[24] The Tenggerese live around Mount Bromo, one of the most-visited tourist attractions in Indonesia. Their fascinating Kaskada ceremony adds beauty to the picturesque volcano, when offerings of harvest and poultry are thrown in to the mountain's crater, followed by captivating cultural performances in the village. The culture is so integral to the attraction that the national park that covers Mount Bromo is named Bromo Tengger Semeru National Park. Legends circulate about how the ancient community was descendants of the Majapahit Kingdom's princes who fled their kingdom to avoid attacks from Muslim kingdoms.

project

d. Children in the community whose access to their usual activities was hampered or closed either permanently or temporarily because of the project

e. Indigenous groups and/or members of ethnic minority.

CHAPTER 5: IMPACTS AND RISKS ASSESSMENT AND MITIGATION MEASURES

5.1 Screening and Categorization

5.1.1 AIIB Screening

All project components or sub-projects to be implemented under the proposed project will be subject to an environmental and social screening in order to prevent execution of projects with significant adverse environmental and social impacts.

The project preparation has sought to avoid impacts by identifying and avoiding environmentally sensitive areas at the early planning stage, thus all subproject components are expected to be Category B or C. Therefore, the screening of each proposed Project component will trigger one of the two categories.

Screening for impacts arising from interaction with sensitive environmental receptors shall include information on (i) protected areas or critical habitats, (ii) water crossing, (iii) presence of avifauna and arboreal fauna and/or protected flora; (iv) presence of other sensitive receptors.

Screening for impacts arising from temporary and/or permanent use of land during the planning & assessment stage of the sub-project requires an inventory of information on (i) ownership status and current usage of land, (ii) current utilization of existing Right of Way; (iii) potential loss of non-land assets, (iv) the potential loss of crops, trees, or fixed assets, loss of business or enterprises; (v) loss or restriction on productive assets, natural resources, communal facilities and services, (vi) adverse impact on social and economic activities arising from land use, and (vii) restrictions on land and resources owned communally or by the Government.

Screening for possible impacts on indigenous peoples shall include (i) preliminary assessment of the Indigenous Peoples present in the proposed project area for financing, and (ii) identification of potential impacts. This includes information on whether such groups (i) are considered by national or local laws or policies as well as anthropological researches/studies as belonging to ethnic minorities or Indigenous Peoples; (ii) identify as being part of a distinct social and cultural group; (iii) self-identify as being part of a distinct social and cultural group; (iv) maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories; (iv) maintain cultural, economic, social, and political institutions distinct from the dominant society and culture; (v) speak a distinct language or dialect; (vi) have been historically, socially, and economically marginalized, disempowered, excluded, and/or discriminated against; (vii) represented as “Indigenous Peoples” or as “ethnic minorities” in any formal decision-making bodies at the national or local levels. It will also include information on whether the proposed activity for financing (i) directly or indirectly benefit or target indigenous peoples; (ii) directly or indirectly affect Indigenous Peoples’ traditional socio-cultural and belief practices; (iii) affect the livelihood systems of Indigenous Peoples; and (iv) is in an area (land or territory) occupied, owned, or used by Indigenous Peoples, and/or claimed as ancestral domain.

Screening will also have to take place for Occupational Health and Safety and Community Health and Safety risks associated with the proposed activities, for presence of Cultural Resources and all other aspects covered in Indonesia regulation, AIIB’s Environmental and Social Policy and Environmental and Social Standard –1.

5.1.2 Government (GOI) Screening

The main GOI law on environmental management, i.e. Law No. 32 of 2009 on Protection and Management of Environment. Article 22 of the Law stated that any business and activity that has significant impact[25] on the environment shall have an EIA process in Indonesia (AMDAL), and article 34 specifies that any business and activity that does not require an AMDAL, shall undertake *Upaya Pengelolaan Lingkungan Hidup dan Upaya Pemantauan Lingkungan Hidup* (UKL-UPL), whereas for small activities that do not require an UKL-UPL, *Surat Pernyataan Kesanggupan Pengelolaan dan Pemantauan Lingkungan Hidup* (statement of environmental management and monitoring undertaking, SPPL), is required. Further, Article 36 specifies that all activities shall have environment permit that will be given by concerned government agency after the environmental assessment document has been approved.

Screening is routinely undertaken for all PLN projects, in consultation with MOEF/KLHK regional offices, to determine what type of assessment is required. As the power distribution is not listed in Appendix 1 of Permen LHK No. 38/2019 as one of activities subject to AMDAL, the environmental documentation required would be UKL-UPL or SPPL. Under decentralized environmental policy, Article 34 Law No. 32/2009 mandated local government (province and district) to set up the screening criteria for UKL-UPL or SPPL. However, field study confirmed that there is no local regulation stipulating the criteria for distribution line.

5.1.3 Screening Process

The screening must be carried out at an early stage of the sub-project (i.e., prefeasibility), in accordance with the Lender's requirement for financing projects. In practice of site selection, PLN conducts E&S screening with the following criteria:

- Protected forest area
- Availability of land
- Transportation access
- Avoidance of fault area
- Avoidance of land conflict

Detail of minimum information required for the screening comprises of the following items:

- Project description (extension/expansion of distribution lines, installation of distribution transformers, etc)
- Project location (including alignment of the poles)
- Capacity of the distribution line (medium or low voltage), including number/length of poles network
- Types of areas crossed by the poles' alignment as well as area/land required for temporary storage of equipment and disposal, protected areas, critical areas, natural habitat or modified habitats, etc)
- Any Key Biodiversity Area (KBA)
- Physical cultural heritage
- Indigenous people
- Land acquisition

The steps for screening subprojects:

1. **First step – Eligibility screening.** Criteria to define what project might be qualified

[25] Criteria of significant impact are also provided in Article 32 of the Law No 32 of 2009 on Protection and Management of Environment.

for funding: any Category A Project, or Project requires Amdal, land acquisition and involuntary resettlement, or triggers adverse Impact IPs and listed on the negative list of activities, would not be eligible for support

2. **Second step – Safeguards Screening.** If the project is deemed eligible, the project is screened using the Environmental and Social Safeguards Guidance Form (**Appendix 6**) to determine potential safeguards risks, and categorization, and make a Rapid Environment and Social Assessment. The list of the screening for individual projects is recapitulated in **Appendix 7**.
3. **Third Step** – **Preparation of Safeguards Document**. Preparation of environmental document (UKL-UPL or SPPL) and social document to address impacts and give guidance on standard mitigations to contractors when they prepare the Contractor EMP and preparation of the Land Use Consent for usage of private lands, and safe distance for any objects nearby distribution lines in accordance with PLN regulation, Kepdir 473.K/DIR/2010. Referring to government regulation, the template for preparing UKL-UPL and SPPL is provided in **Appendix 8**.

The steps 1 and 2 would be done by UID with close coordination with PLN HQ, and step 3 by third party (consultants/contractors) on behalf of and supervised by UID.

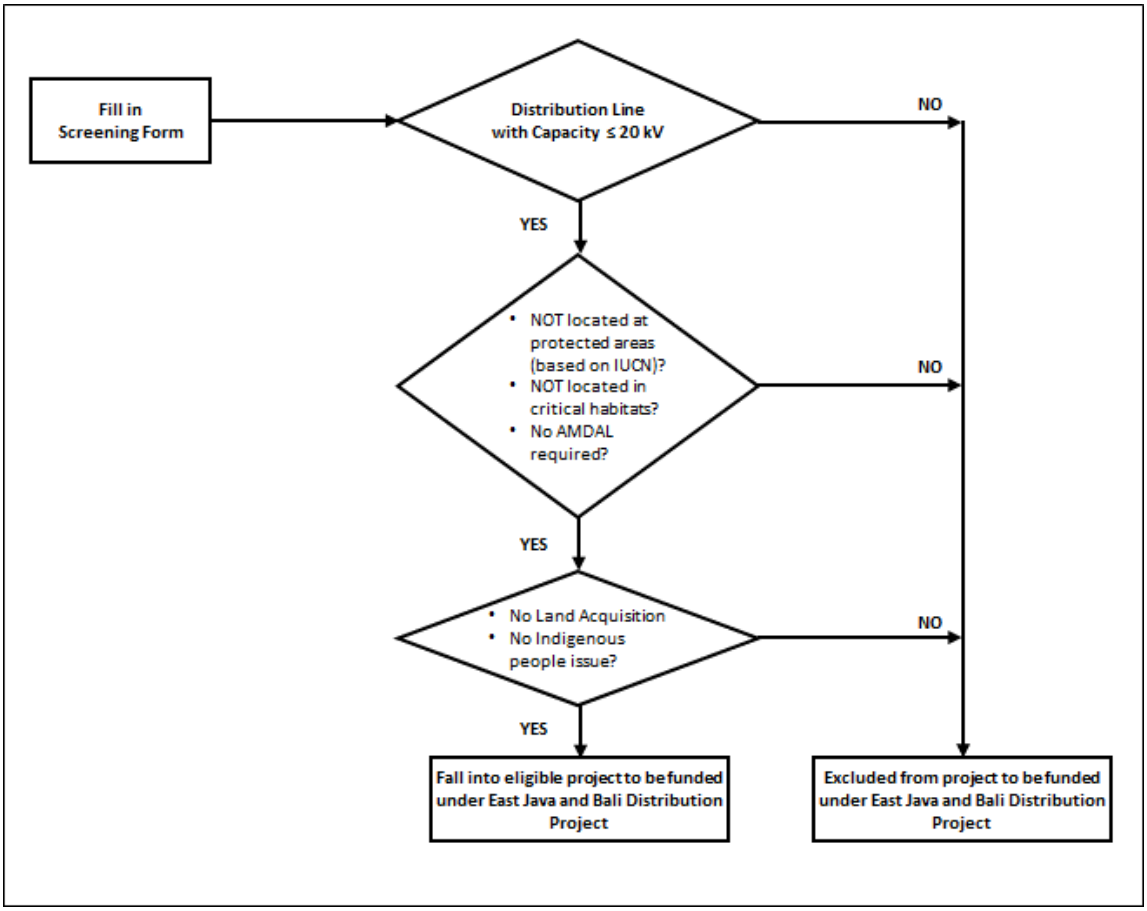


Figure 7 Flowchart for Environmental and Social Screening

5.1.4 Screening Criteria

Following the screening process, each eligible subproject would be assigned one of the following categories:

a. Category A – High Risk. Subprojects that trigger significant environmental and social impacts, in accordance with Category A of AIIB ESF on Categories[26]. The activities that would be classified Category A will not qualify for the project.

b. Category B – Medium Risk. Subprojects that trigger environmental or social impacts that are site specific, temporal and reversible in nature in accordance with Category B of AIIB ESF on Categories[27]. The initial review of the environmental and social implications of the Project and an environmental and social assessment or another similar instrument should be prepared. The assessment would examine the Project's potentially negative and positive environmental and social impacts and recommends any measures needed to avoid, minimize, mitigate, or compensate for adverse impacts and improve environmental performance of the Project.

   Any subprojects trigger involuntary resettlement and/or activities to affect the dignity, human rights, livelihood systems, or culture of Indigenous Peoples, or the territories or natural or cultural resources that Indigenous Peoples own, use, occupy, or claim as an ancestral domain or asset will not qualify for the project.

c. Category C – Low Risk. Subprojects that do not have a physical footprint in accordance with Category A of AIIB ESF on Categories[28]. These subprojects do not require an environmental and social assessment, but does require a review of the environmental and social implications of the Project.

The environmental and social screening for Category B project would involve: (i) desk study of the sub-project areas/routes and their surroundings (using appropriate tools and technology such as remote sensing data/maps); (ii) identification of the major sub-project activities; and (iii) preliminary assessment of the impacts of these activities on the ecological, physic-chemical and socio-economic environment of the sub-project surrounding areas.

A combined guidance note of Environmental and Social Screening for the proposed subprojects is presented in **Appendix 6**. The collated screening report as attached in **Appendix 7** would be shared with the Bank for review and clearance. Summary of procedure for Environmental and Social Screening is attached in **Appendix 9**.

5.1.5 Screening Guidance

The screening form is a tool to guide and standardize the reporting of the environmental and social screening process of PLN East Java and Bali distribution projects/project areas in the Distribution Component.

The "environmental and social screening" of sub-projects with a preliminary idea about the nature of the sub-project location and sub-project activities will be carried out. Following the Environmental and Social Screening Guidance for distribution line are presented in **Appendix 6** and recapitulated in **Appendix 7**. The forms are adopted from best practices in PLN (as implemented in RBL)[29].

[26] AIIB ESF 2016, para 13, A Project is categorized A if it is likely to have significant adverse environmental and social impacts that are irreversible, cumulative, diverse or unprecedented.
[27] Ibid, A Project is categorized B if it has a limited number of potentially adverse environmental and social impacts; the impacts are not unprecedented; few if any of them are irreversible or cumulative; they are limited to the Project area; and can be successfully managed using good practice in an operational setting.
[28] Ibid, A Project is categorized C when it is likely to have minimal or no adverse environmental and social impacts.
[29] RBL is ADB's Result Based Lending Program

5.2 Identification of Impacts and Risks

Social. The project would optimise the usage of public land along the corridor of existing Right of Way. Private land will be used if there is no existing Right of Way available, and/or necessary to connect to new customers. Written land use consent of landowners would be supported by written documentary evidence. The consent form is attached in **Appendix 10.**[30]

The duration of construction stage would vary in accordance with each sub-project depending on the activities. However, possible social influence from the construction workers to the community during the construction stage should be anticipated, especially because there is less likely any workers' camp built for the sub-project.

During the construction, some areas may have to be temporarily occupied by the contractors in charge of the distribution lines construction, for storage of materials. Owners and occupants might be compensated against the loss of crops if any and will receive rent from the contractors for temporary occupation.

During the operational phase, the restrictions on land use within the right of way apply in accordance with PLN regulation on the safe distance for distribution power. The consent of the restriction from the community is under the same consent signed for land use consent. The regulation for land use restriction is socialised regularly to the community for their awareness. For any objects, like building, tree and/or crops cross the safe distance in accordance to the distribution power PLN would send a letter to warn the owners about the possible damage made for any object too close to distribution network.

The land use requirement for the distribution network (lines and transformers) is considered minimal. Given no land acquisition and no involuntary resettlement impact occurs from project activities, the preparation of Resettlement Plan Framework (RPF) is not recommended. Appropriate measures to manage anticipated social risks and impacts are captured in ESMP in the document.

While ethnic groups are present in both Bali and East Java, electrification at village-level is 100% in Bali, and East Java will reach 100% by next year.[31] Some ethnic groups are potential customers of the electricity access program. Some lands owned by ethnic groups might be used for the installation of utility poles. One practise for PLN connection is based on demand means that village or individual must submit application as a requirement for connection. Members of ethnic groups who are connected or who have applied for connection will equally benefit from improved quality of connection. Connection at household level is voluntarily and is done by application to PLN. Improved availability of electricity (standardized voltage and amperage) will benefit all connected households regardless of ethnicity. Project activities unlikely to affect the dignity, human rights, livelihood systems, or culture of Indigenous Peoples, or the territories or natural or cultural resources that Indigenous Peoples own, use, occupy, or claim as an ancestral domain or asset.

Environment. Environmental impacts are principally induced by the establishment of the network across natural habitats and potential impact on fauna (in particular avifauna and terrestrial fauna susceptible to access the distribution lines or transformers such as apes), and the management of waste (e.g. end-of-life transformers, in particular the mineral oil they contain) or leakages during maintenance or due to integrity failure of transformers. Construction and maintenance activities present significant occupational health and safety risks to Project Workers (including Company employees, contractors and sub-contractors), as well as potentially resulting in nuisances to communities (temporary nuisances during construction and visual nuisance while installed), as well as presenting

[30] For transformer installation on private ownership land (SHM); in case of pole sitings, documentation will be provided via workplan and statement letter from concerned landowners as needed.
[31] As per PLN AIIB Mission fielded on Aug 26-29 in Bali and East Java

risks to communities in case of unplanned event (e.g. fall of pole during weather event or transformer fire). Overall, environment and social impacts of the Project are deemed limited, not unprecedented, localized and manageable.

A review of potential environmental risks and impacts, both positive and adverse, associated with the Project, carried out. This includes direct and indirect impacts, which potentially resulted from activities of each stage of the project implementation (i.e., pre-construction/planning, construction, and operation), as presented in **Appendix 12**.

Based on its phase, environmental impacts and risks related to power distribution project as follows:

Table 18 Environmental and Social Impact by Phase and Category

No	Phase	Category of Impacts	Description
1	**Pre-Construction/ Planning**	Ecological (Biodiversity)	- Impacts on physical resources, possible loss of biodiversity, interference with public utilities. - Impact on ecological resources through poaching of wildlife and using wood from trees as firewood causing ecological damage in the area
		Physical-Chemical	- Impacts of poles location and alignment on visual amenity (visually intrusive and undesirable to local residents) - Impacts of collection of soil samples on topography or pollution of water source during sample collection for soil investigation and others environmental baseline information
		Pollution	- Impacts of temporary worker camps (in case actually required) on water quality - Impacts of uploading material at site, storage and workshop on air quality/noise, water quality and terrestrial and aquatic ecology
		Social	- Impacts of poles location and alignment on houses, or any existing asset, or communally owned properties of IP community
		Climate Change	- Potential impacts of climate change and natural disaster such storms, heavy wind, landslide, flooding, etc will be considered in design
		Unplanned Event	- None
2	**Construction**	Ecological (Biodiversity)	- Alteration and disruption to terrestrial habitat, including impacts to avian species and an increased risk of forest fires
		Physical-Chemical	- Sediment and erosion from construction activities and storm water runoff may increase turbidity of surface watercourses - Dust, noise, and vibration from construction vehicle transit,

No	Phase	Category of Impacts	Description
			- Loss of agricultural land, and interference with other utilities and traffic may happen during erection process - Surface run-off of soil not compacted at the pole base. - Agricultural/barren land (small area of max. 1 sq. m.) affected - Excess concreting raw material left strewn in the area after work complete
		OHS (Occupation Health and Safety)	- Stringing the wire loosely may result in cable touching the buildings, trees and other obstructions that could cause damage and accidents during operations - Pole structures for mounting DTRs are normally not secured by protective fencing and can become a hazard if someone climbs over - Falling objects; work in confined spaces; work at height, work with lifting (skylift) - Exposure to hazardous materials; and - Exposure to electrical hazards during work on or near powerline . - Electrocution from direct contact with high-voltage electricity or from contact with tools, vehicles, ladders, or other devices
		CHS (Community Health and Safety)	- Exposure to physical hazards from use of heavy equipment and cranes; trip and fall hazards, and transportation of oversized material (poles)
		Traffic and Public Safety	- Management and storage of power cable, poles and transformers along ROW: traffic and access disruption - Traffic control and public safety: traffic issues during materials and equipment shipment and construction (e.g. pole erection, heavy equipment mobilization) can generate accidents, and safety problems
		Pollution	- Dripping of transformer oil may cause soil pollution
		Cultural Resources	- Physical cultural resources (PCR) can be affected
		Social	- Improper distance from houses, trees, and other building effected due to distribution line
		Climate Change	- Spilling of soils due to storm and landslide during the construction work

No	Phase	Category of Impacts	Description
		Unplanned Event	- poles transportation accident during construction, fall of pole during construction or operation, transformer fire
3	**Operation**	Ecological (Biodiversity)	- Mowing or pruning machinery that may disrupt wildlife and their habitats - Excessive vegetation maintenance may remove unnecessary amounts of vegetation resulting in the continual replacement of successional species and an increased likelihood of the establishment of invasive species - Cutting/trimming of vegetation/trees: occurring along the ROW for the power grid; but it can also affect private own trees. - Pose potentially fatal risk to birds and bats through collisions and electrocutions.[32]
		Physical-Chemical	- Slash from routine maintenance is left to accumulate within right-of-way boundaries, sufficient fuel can accumulate that may promote forest fires
		Pollution	- Used transformer oil are categorized as hazardous waste oil spills contaminating the soil and water bodies - Maintenance shops and other facilities, and activities may involve potential contact with PCB or PCB-contaminated machinery
		CHS (Community Health and Safety)	- Potential risks to occupational and community health and safety include electromagnetic field (EMF)
		OHS (Occupational Health and Safety)	- Occupational health and safety, including public safety
		Social	- Maintenance of the trimming trees along the ROW should be anticipated
		Climate Change	- Collapse of poles due to storm, flood and whirling wind

[32] Birds and bats may be electrocuted by power lines in one of three ways: i) Simultaneously touching an energized wire and a neutral wire; ii) Simultaneously touching two live wires; and iii) Simultaneously touching an energized wire and any other piece of equipment on a pole or tower that is bonded to the earth through a ground wire. Raptor Protection Video Group (2000)

No	Phase	Category of Impacts	Description
		Unplanned Event	- Accidental events of blackout

Expansion and reinforcement of distribution network (including installation of distribution transformers, poles, service connections and feeders, and customer meter boxes and circuit breakers) will take place in rural and urban in areas already electrified (with existing access roads available) and therefore the potential impact on environmentally sensitive areas is not likely.

All activities potential construction-related impacts include disturbance of traffic, access disturbance, vegetation, noise, dust, vibration and waste. Transportation of equipment and materials (i.e. poles, transformers) may generate some noise, dust and traffic. Potential impacts prior to construction stage include trimming of trees within the ROW of distribution lines (Distribution network), noise and traffic. Significant impacts which will be managed and monitored are provided in **Appendix 13.**

5.3 Analysis of Alternatives

The primary objective of the “analysis of alternatives” is to identify the location/technology for a particular sub-project that would generate the least adverse impact and maximize the positive impacts.

Evaluate in a comparative manner: (a) alternatives to the proposed Project that are relevant to the stage of the Project’s development; and (b) their potential environmental and social risks and impacts; and document the rationale for selecting the particular alternative proposed. Depending on the type of Project, alternatives examined may include: (a) investment alternatives to address the development objective; and (b) technical alternatives including Project location, design, technology and operation. As part of examining alternatives, consider and document the “without Project” alternative. Assess the alternatives’ feasibility of mitigating environmental and social risks and impacts, capital and recurrent costs, suitability under local conditions, and the institutional, training and monitoring requirements for alternatives. Examine Project alternatives to avoid or minimize physical and economic displacement associated with Involuntary Resettlement and impacts on Indigenous Peoples. For existing Projects, the scope of alternatives may be limited.

PLN assesses alternatives on the basis of both non-financial and financial criteria. A key non-financial consideration is a project’s environmental acceptability. In term of distribution line, alternative locations are particularly considered in the siting of new alignment of distribution lines to avoid impacts on environmentally and/or socially sensitive areas.

5.4 Environmental and Social Assessment

A system has been designed in this framework to define and assess the significance of risks and impacts screened in for specific sub-projects’ activities. If the assessment of a sub-project identifies any significant adverse environmental and social impacts that are irreversible, cumulative, diverse or unprecedented then it should be flagged for careful consideration and is unlikely to be supported by the Bank.

Using the screening guidance form set out in Appendix 6 to conduct a rapid environmental and social assessment (RESA) for the proposed Project in order to ensure that the activities to be carried out in the sub-project are relatively limited are well understood and capable of being mitigated to reduce any residual risk. The details of the assessment:

- The RESA needs to recognise its legal obligations under national law (including international agreements adopted by the member) applicable to the Project. However, the RESA also needs to ensure that GOI procedures are followed to the extent possible whilst recognising the need to satisfy the AIIB's environmental & social standards.
- The RESA would identify direct, indirect, cumulative and induced risks and impacts to physical, biological, socioeconomic and cultural resources in the Project's area of influence;
- If an impact is identified a mitigation measure to reduce risk will be prepared and included in the ESMP
- The preparation of an ESMP to propose mitigations for the identified impacts for preparation and the proposed management structure to be used by the Contractor responsible for construction and implementation of the ESMP

Given the nature of the activities it is considered unlikely that the use of more detailed assessments such as strategic, sectoral or regional environmental and social assessments and cumulative impact assessments will be necessary. The level of analysis should ensure that the scope and depth of the assessment is commensurate with, and proportional to, the nature and magnitude of the Project's potential risks and impacts and the categorization assigned by the Bank.

The analysis should apply a mitigation hierarchy by: (a) anticipating and avoiding risks and impacts; (b) where avoidance is not possible, minimizing or reducing risks and impacts to acceptable levels; (c) once risks and impacts have been minimized or reduced, mitigating; and (d) where residual risks or impacts remain, compensating for or offsetting them, where technically and financially feasible.

As commonly occurred in PLN projects, this project and sub-projects consist of a combination of components and associated facilities (often carried out in one bundle of contract). In cases such as these, the environmental assessment should be undertaken as if the project were one entity.

Environmental impacts assessment. Based on its category the impacts assessment covers the following main impacts:

a. **Construction Related Impacts**: Special attention to identification of potential impacts, management and monitoring measures for construction-related impacts.
b. **Biodiversity:** habitat loss, degradation and fragmentation, impact on avifauna and arboreal fauna, introduction of invasive species, overexploitation, hydrological changes, nutrient loading, pollution and incidental take. The assessment process specifically identifies the environmental risk and impacts of construction of distribution lines on biodiversity including forests, wetlands and other types of ecologically sensitive habitats.
c. **Pollution**. Assessment of direct and indirect impacts related to the use of engines, storage, usage and disposal of chemicals (fuel, lubricant, etc.) and the handling and disposal of industrial and hazardous waste, especially handling of PCB in aged

transformers replaced *(Note: PCB based transformers are only used for old transformers installed before 1996)*.

d. **Cultural Heritage**. Assessment of potential risk and impacts to cultural heritage and provide guidance for their management in activities supported by the Project. The cultural heritage includes archaeological sites, historical sites, temples and other sacred sites.

In addition to above issues, the ESMPF also addresses the following special issues:

a. **Climate Change**. The ESMPF provide guidance for design and implementation of the Project to minimize emissions from construction activities; and reduce vulnerability to climate change and natural hazards. The SOP on Construction (Book 3 and 4) provide some approaches to address climate change issues, such as risks and impacts of weather events, and should be referenced.

b. **Traffic and Road Safety**. The ESMPF will provide measures for the identification, evaluation and monitoring of traffic and road safety risks to Project workers and affected communities throughout the Project lifecycle. It will develop measures and plans to address these and incorporate technically and financially feasible road safety aspects into Project design, to prevent and mitigate potential road safety impacts on the affected communities. These measures will include identification of measure to avoid the occurrence of incidents and injuries to members of the public associated with the construction of distribution lines supported by the Project. As mitigation, there will be recommended an appropriate training to Project workers on driver and vehicle safety and ensure regular maintenance of all Project vehicles (owned or leased).

   In particular, as refers to UID SMK3 (Occupational Health and Safety Management System), some procedures and work instruction have been prepared, among others:
   - SOP on Traffic Management and Signing (to manage traffic during the construction, including for the transport of heavy, oversized material (poles)
   - SOP on Hazardous Waste Management (on collection, handling, storage, and transport of hazardous chemicals (oils in transformers)

c. **Safe Working Conditions and Community Health and Safety**. The ESMPF addresses labor and working conditions of Project workers, as well as health and safety risks to local communities in the area of the Project, with the goal of avoiding, or where avoidance is not possible, including measures to minimize adverse risks and impacts of the Project on the health and safety of local communities. Measures will be identified to ensure Project workers have safe and healthy working conditions, along with measures to prevent accidents, injuries, and disease in relation to the Project. Relevant occupational health and safety provisions of internationally recognized standards, such as the Environment, Health and Safety Guidelines of the World Bank Group, and, as appropriate, industry-specific EHSGs, will also be considered.

Management of PLN conduct prevention and protection against accident to community by conducting technical control to unsafe condition at the installation, among others:

a. Conduct inspection of electricity installation and buildings/infrastructure periodically and follow up the results of inspection
b. Conduct operational feasibility certification (SLO) of electricity installation and buildings/infrastructure

c. Install hazard signs at the electricity installation with potential hazard to public community
d. Conduct maintenance of electricity installation with potential hazard to public community
e. Conduct maintenance of electricity installation and buildings/infrastructure periodically as procedure set forth
f. Provide equipment/protection system against fire for electricity installation and buildings/infrastructure as standard
g. Replace improper equipment of installation

d. **Labour Management System**. Under this project PLN refers to and comply with Indonesian regulation on labor and employment (especially Law No. 13/2003 on Labor), which provides basic rights of employees and labors.

Accordingly, in project implementation, Contractors are required to comply the regulation in terms of:

- Clear and understandable written terms of employment made available to Project workers in an accessible manner;
- Timely payment for Project work;
- Adequate periods of rest;
- Timely notice of termination of the working relationship;
- Employment on the basis of the principle of equal opportunity, fair treatment and non-discrimination;

5.5 Mitigation Measures

The PLN Decrees specifies that when considered necessary, normal measures to prevent, reduce and mitigate impacts during constructions of distribution lines. Example of the contract documents for distribution works shows strict provisions and measures aimed at encouraging safe construction work practice which are to be stipulated in the contract and include adequate budget allowances for satisfactory implementation.

Mitigation measures for each potential impacts and risks at each stage of the project are formulated in ESMP (see Section 5.6), which refer to best practices in PLN, specific technical guidelines (World Bank EHS Guideline) and IFC references[33].

Some of these measures are listed below.

- Follow the instruction of PLN Decree on construction of distribution lines (e.g. installation of poles including cable distribution transformers, switching substation) to reduce negative effect due to noise, dust, rock debris and traffic disruption
- Minimize cutting/trimming of vegetation along the existing ROW for the power cable grid; ensure the permit is granted by the authority, and if the tree is privately owned, ensure prior agreement with trees owner has been obtained.
- Adequate, timely, and culturally appropriate consultation, particularly in the villages where there are IPs and ethnic minorities are present.
- Implement good management and storage of power cable, poles and transformers along existing ROW to minimize impact on traffic and access disruption.
- Place staff to control road traffic and install traffic and prevention signs along the road of working area to prevent accidents, in particularly during materials and equipment shipment and construction (e.g. pole erection, heavy equipment

[33] https://www.ifc.org/wps/wcm/connect/7b65ce6b-129d-4634-99dc-12f85c0674b3/Final%2B-%2BElectric%2BTransmission%2Band%2BDistribution.pdf?MOD=AJPERES&CVID=jqeI4Rs&id=1323162154847

mobilization)
- Ensure occupational health and safety measures to ensure workers safety (e.g. personal protection equipment, see **Appendix 15**).
- Avoid construction works during peak traffic hours and if necessary, place road signalling and light
- Make appropriate waste management rules to handle domestic and hazardous wastes (e.g. transformer oil leakage).

5.6 Environmental and Social Management Plan

After predictive assessment of impacts, the project environmental and social management plan (ESMP) is prepared as one plan as attached in **Appendix 13**. The primary objective of the ESMP is to ensure implementation of the identified "mitigation measures" in order to reduce adverse impacts and enhance positive impacts. Besides, it would also address any unexpected or unforeseen environmental impacts that may arise during construction and operational phases of the sub-projects.

As required, for each aspect of the sub-project that induces activity – and presented in light of these predicted impacts, the ESMP include: (a) mitigation measures; (b) environmental and social monitoring and reporting requirements; (c) related institutional or organizational arrangements; (d) provisions for information disclosure and consultation; (e) capacity development and training measures; (f) implementation schedule; (g) cost estimates; and (h) performance indicators. Mitigation measures involve avoiding of impact altogether, minimizing the impact, rectifying the impact and gradual elimination of impact over time. The mitigations are not intended to be site specific covering all potential impacts. PLN UID respectively under coordination with HSSE Unit will prepare site specific ESMP once the project defined.

The environmental and social management plan will be carried out as an integrated part of the project planning and execution. It must not be seen merely as an activity limited to monitoring and regulating activities against a pre-determined checklist of required actions. Rather it must interact dynamically as a sub-project implementation proceeds, dealing flexibly with environmental and social impacts, both expected and unexpected. For all sub-projects to be implemented under this proposed project, the ESMP should be a part of the Contract Document(s) between PLN and its suppliers and contractors.
The level of detail and the complexity of the ESMP is proportional to the risks and impacts of the Sub-Project. The ESMP takes into account the experience and capacity of PLN and parties involved with the Project. The ESMP and its related plans contain a selected set of measurable outcomes and targets or performance indicators that can be monitored on a regular basis. PLN and Contractors are expected to prepare EHS and Social procedures in response to the requirements comprised in the ESMP to define the steps, responsibilities and monitoring indicators and frequency to be implemented for each item in the ESMP.

CHAPTER 6: PUBLIC CONSULTATION, GRIEVANCE REDRESS MECHANISM, AND INFORMATION DISCLOSURE

6.1 Public Consultation and Information Disclosure

This ESMPF has been consulted upon with PLN UID Bali as one of key stakeholders for the project on 19 August 2019 during its preparation. During site visit on 13 – 17 January 2020 more consultation with assistance by UID Bali and UID Jatim and interviews with communities in Bali and Jatim were done respectively. An upcoming ESMPF disclosure and consultation would be done in March 2020 after the disclosure of the draft ESMPF on the PLN and AIIB websites[34].

More holistic consultation involved broader stakeholders would be done after document completion. After consultations with the key stakeholders, the ESMPF document will be disclosed online as per the Bank requirements through posting on the PLN website. The final version will be publicly disclosed through the Bank's website in English and local language(s) for comment for no less than 30 days prior to approval of the AIIB's financing of the Project.

The consultation for project and subprojects covers project design, mitigation and monitoring measures, sharing of development benefits and opportunities on a project-specific basis, and implementation issues. The consultation has to be conducted throughout the project life cycle, as scheduled in the ESMP prepared for each subproject as per this ESMPF. PLN has no different approach for doing consultation and socialisation for any type of project. The approach would be in coordination with the head of the village and/or public figures. However consultation with ethnic groups and community living in remote areas that will be impacted by the project activities will be made using culturally appropriate communication methods they are familiar with. The consultation should be held in meaningful consultation with stakeholders, in a manner appropriate with the risks to, and impacts on, those affected by the Project. Every consultation should be recorded with the list of attendance of participants disaggregated by gender. The form as attached in Appendix 11 should be included in the environmental and social assessment documentation.

For distribution network PLN has regular socialization to community[35], including disclosures of information of any PLN projects done in the area, general information about electricity such as safety distance for distribution network, and dissemination of GRM. For this project the following aspects, issues and activities to be disclosed to relevant stakeholders and affected communities are:

- Project activities, timing, progress/milestones and employment opportunities (if any);
- Dissemination of Grievance Redress Mechanism to project affected communities;
- Project operation;
- Community Health and Safety;

[34] See footnote no. 1 (i.e. PLN: https://www.pln.co.id/dokumen-esmpf-aiib-project and AIIB: https://www.aiib.org/en/projects/proposed/2019/indonesia-pln-east-java.html)
[35] In UID Bali the activity is by public letter to the villages, radio, newspaper, while in UID Jatim the activity is by public letter to villages and regular meetings (4 times a year by each area of Community Service Unit – ULP, a unit under UP3) called Nangkring Bareng (Get Together).

- Environmental and social responsibility programs

6.2 Stakeholder Engagement

Stakeholder refers to individuals or groups who: (a) are affected or likely to be affected by the project (project-affected parties); and (b) may have an interest in the project (other interested parties). Each subproject should identify the stakeholders with particular attention to vulnerable groups affected by the project.

Stakeholder engagement and sufficient information to stakeholders is an inclusive process conducted throughout the project life cycle (pre-construction/planning, construction and operation and maintenance), and most effective when initiated at an early stage of the project development process. It is an integral part of early project decisions and the assessment, management and monitoring of the project's environmental and social risks and impacts.

For the ESMPF the key stakeholders are such as but not limited to:

- Government of Indonesia: Ministry of Energy and Resources, Ministry of Environmental and Forestry, PLN;
- East Java and Bali Province Governments: Governor Office, Environmental and Forestry Agency, Investment and Integrated One Stop Services Agency, House of Representatives;
- Representatives of possible affected communities in East Java and Bali Provinces with attention to vulnerable groups;
- Representatives of national and local community organisations; and
- National and local media.

For the subprojects the key stakeholders are respectively such as but not limited to:

- PLN: Head Office, UID Bali and UID Jatim
- East Java and Bali Province and Regency Governments: Governor and Regency Offices, Environmental and Forestry Agency, Investment and Integrated One Stop Services Agency, House of Representatives;
- Representatives of possible affected communities in East Java and Bali Provinces with attention to vulnerable groups;
- Representatives of local community organisations and figures; and
- Local media.

6.3 Project Level Grievance Redress Mechanism (GRM)

In establishing a grievance redress mechanism for this Project, the ESMPF takes into account existing policies and procedures, including best practices implemented by PLN with improvements to (i) record-keeping of complaints specific to environment and social impacts arising from construction and operation activities, and (ii) information

dissemination of the mechanism.

In accordance with the AIIB's ESP and applicable ESSs and the existing PLN grievance mechanism for distribution lines by general complaint management system, the GRM accessible through: (i) the Call Center 123, which can be accessed by anyone anywhere in Indonesia through the company website, email, telephone, or social media; (ii) a web-based online integrated complaint-solving application (www.pln.co.id); and (iii) the customer service desk at the regional PLN offices.[36]

For the project, the usage of current PLN's complain system must be adding: a) explicit attention to vulnerable groups and the participation of women, b) awareness among affected persons about a proposed project and its implications until construction commences, c) documentation of all grievances, d) the capacity of PLN's 123 hotline since it is traditionally used for customer care and not for safeguard-related concerns.

PLN may provide mediation as an option where complaint persons are not satisfied with the proposed resolution. The GRM flow chart and Template for GRM registration and monitoring are presented in **Appendix 14**.

[36] PLN UID Bali: Jl. Letda Tantular No.1, Dangin Puri Klod, Kec. Denpasar Tim., Kota Denpasar, Bali 80234, PLN UID Jatim: Jl. Embong Trengguli No.19-21, Embong Kaliasin, Kec. Genteng, Kota SBY, Jawa Timur 60271

CHAPTER 7: MONITORING AND REPORTING

7.1. Environmental and Social Monitoring Plan

The primary objective of the environmental monitoring is to record environmental impacts resulting from the sub-project activities and to ensure implementation of the “mitigation measures” identified earlier in order to reduce adverse impacts and enhance positive impacts from project activities.

During implementation of all sub-projects, the Contractor will be responsible to monitor and make sure that the environmental mitigation/enhancement measures (including health and safety measures) outlined in the ESMP for the particular sub-project are being implemented in accordance to the provisions of the Tender Document.

Apart from general monitoring of mitigation/enhancement measures and health and safety protocols (as outlined in the ESMP and Tender Document), important environmental parameters to be monitored during the construction phase of the sub-projects include significant impacts only (i.e., spill of soil, nuisance (to aesthetic and culture), work accident, traffic and public safety, construction debris, and spill of hazardous wastes) . However, the requirement and frequency of monitoring would depend on the type of sub-project and field situation. For certain sub-projects (e.g., rehabilitation of existing distribution line), monitoring of these parameters is not critical; while monitoring of some of these parameters (e.g., noise level) would be needed only if significant pollution is suspected.

In addition, the routine monitoring work will be done by contractor to ensure that:

- All personnel at work sites are provided with protective gears like helmets, goggles, boots, etc. so that injuries to personnel are avoided or minimized;
- Workforce likely to be exposed to noise levels beyond regulatory limits is provided with protective gears like hear plugs etc. and regularly rotated;
- Dust suppression measures like sprinkling of water are carried out in relevant operations areas;
- The construction camps have health care facilities and all construction personnel are subjected to routine vaccinations and other preventive/healthcare measures;
- The work sites have suitable facilities for handling any emergency situation like fire, explosion, electrocution, etc.;
- All areas intended for storage of hazardous materials are quarantined and provided with adequate facilities to combat emergency situations. All required permits for storage of inflammable/hazardous materials are to be obtained;
- The construction workers, supervisors and engineers are properly trained;
- The operational areas are access controlled and entry is allowed only under authorization;
- The construction camps have in-house community/common entertainment facilities.

Subsequently, during operational phase, monitoring of environmental parameters would be required for the sub-projects. Cultivating from previous World Bank and ADB funded projects, UID developed an Integrated Management System (combined ISO based management system of QMS, OHSAS, and EMS) which provides some specific procedures and work instruction on consultation, environmental monitoring, and handling on hazardous wastes management .

The Environmental Monitoring Plan (as in UKL-UPL) outlines briefly and clearly the monitoring plan in matrix or table for the resulting impact. This matrix or table contains monitoring of the resulting impacts.

The matrix or table is prepared by presenting the following elements:

- **Monitored Impacts** consisting of: impact types, impacted environmental components, and monitored indicators and parameters and sources of impact.
- **Environmental Monitoring method,** consisting of data collection and analysis methods, monitoring locations, time and frequency of monitoring.
- **Environmental Monitoring Institution**, consisting of monitoring implementers, monitoring supervisors and recipients of monitoring reports.

7.2. Environmental and Social Clauses in Tender Documents

Since most environmental and social impacts of subprojects result from activities directly under the control of contractors and will be mitigated directly by the same contractors, requirements for EHS and Social capacity, including having sufficient competent resources and a suitable E&S management system, and introduction of detailed EHS and Social clauses in contracts is required and covered in the ESMPF.

Apart from the provisions Contract under “General Specification” and “Particular Specification” for different sub-projects, a number of special environmental clauses (SECs) shall be included in the Tender Document under General/Particular Specification. These clauses are aimed at ensuring that the Contractor carries out his responsibility of implementing the ESMP and other environmental and safety measures. Sample clauses of the contract presented in **Appendix 15**.

7.3 ESMPF Monitoring

For mitigation, monitoring and capacity development, the Bank requires the Client to provide in the ESMP: (a) an implementation schedule of measures that are required to be carried out as part of the Project, showing phasing and coordination with overall implementation plans; and (b) the investment and recurrent cost estimates for implementing the ESMP. These figures are also integrated into the total budget of the Project. Costs of implementation of the ESMP, including environmental and social mitigation and monitoring, and measures for Indigenous Peoples are eligible for the Bank financing if these activities are included in the Project description.

This will include monitoring mechanisms of PLN over its contractors, as well as reporting mechanisms of contractors to PLN and PLN to AIIB.

UID conducts regular environmental monitoring during construction of distribution lines. UID submits to PLN HQ a quarterly report (K3L Activity Report) which includes the result of the monitoring of implementation of SMK3 and environmental and social issues, if any. The template for monitoring on ESMPF implementation together with monitoring of K3 (occupational health and safety) and monitoring of hazardous waste management presented in **Appendix 16.**

7.4 Monitoring of Contractors Performance

Selection of contractors and vendors also consider environmental requirements as will be stipulated in the clauses of CDA (Contract Discussion Agreement). PT PLN (Persero) in this case UID, outsources some of the projects implementation to other company. The

procurement of qualified companies requires them to meet occupational health and safety and other standard requirement.[37]

The contract clauses require contractor to meet minimum standard for Certification/Education & Training for their workers, as stipulated:

- Partner(s) shall conduct certification of competence for Supervisor, Implementer, and other technician as their duties
- Partner(s) shall assign certified K3 experts
- Partner(s) shall provide education and training for Supervisor, Implementer and other technician as their job.

On behalf of PLN the contractor(s) will implement contract clauses covering environmental and social and occupational health and safety and the sub-project specific ESMP, and report on performance as required. Performance of the contractors in meeting the requirements set forth in contracts as well as respective environmental and social document. In order to ensure quality and control of the work, PT PLN (Persero) assigns:

1. Manager of UP3 as **Direction** who will implement supervision and provide direction required for smooth implementation of the work
2. K3L Supervisor of UP3 as **Supervisor** whose tasks to assist Direction in implementing the duties
3. K3L Supervisor of UP3 as **K3L Supervisor** whose tasks to assist Direction in implementing inspection and supervision on implementation and compliance of K3L procedures.

[37] https://www.pln.co.id/statics/uploads/2017/05/Pedoman-Pengadaan-Barang-dan-Jasa-PT.-PLN-Persero.pdf

CHAPTER 8: INSTITUTIONAL ARRANGEMENT

8.1 PLN's Organization and Structure for Safeguard

Organization Structure of PT PLN (Persero) at corporate level (Head Office) as refer to Decree of PT PLN (Persero) Directors No. 0220.P/DIR/2019 on Second Revision of Decree of PT PLN (Persero) Directors No. 0051.P/DIR/2018 on Organization and Working System of PT PLN (Persero) is presented in Figure 8.

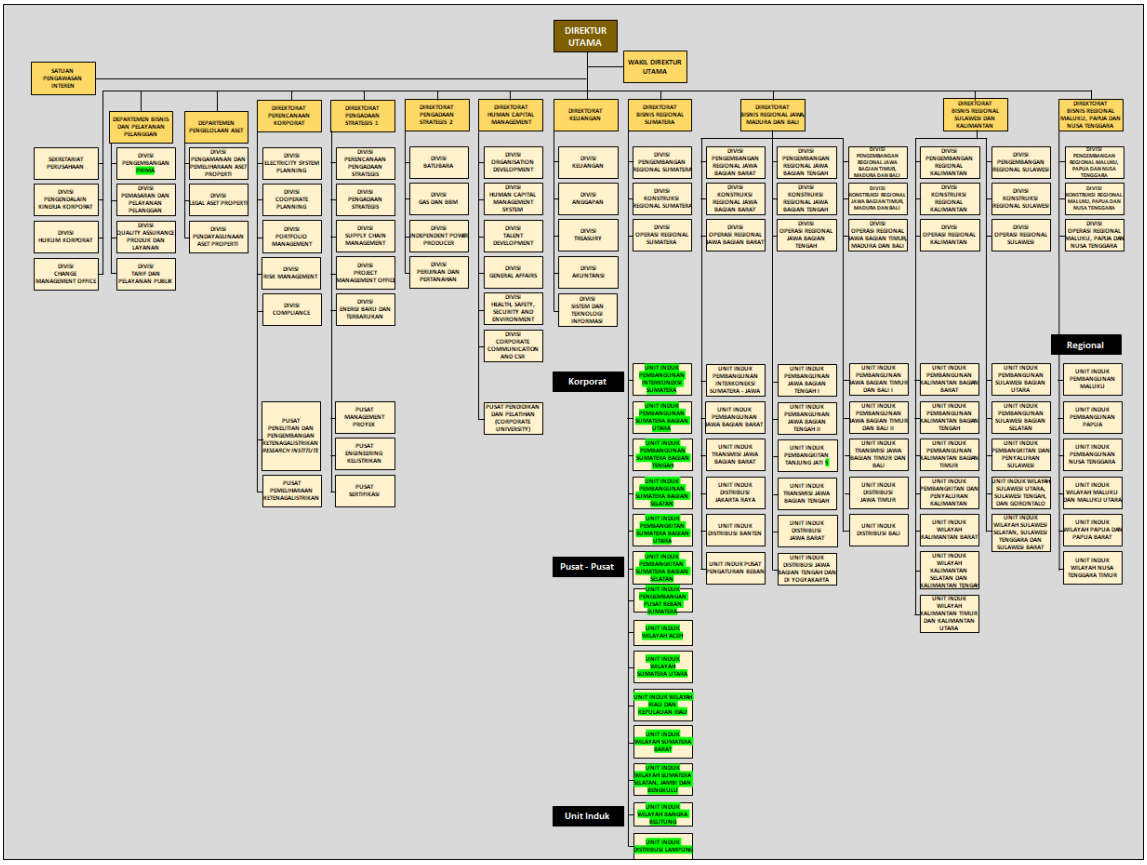


Figure 8 Organization Structure of PT PLN (Persero) – Overall Structure

PLN's institutional structure has a number of tiers of responsibility for environmental safeguards. DIVHSSE has responsibility for all safeguards. The DIVHSSE structure following the 2018 PLN reorganization is shown in Figure 9.

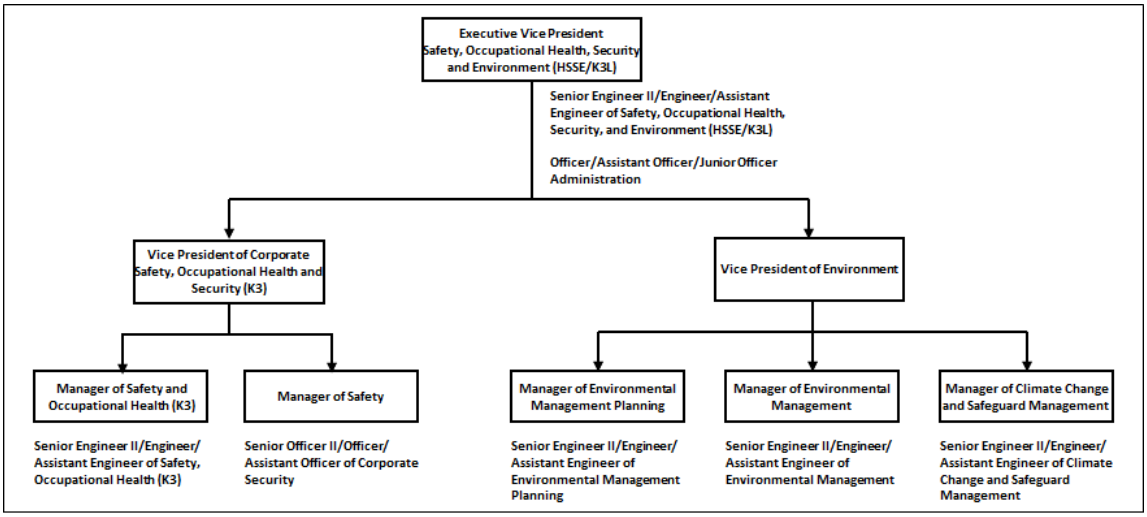


Figure 9 Organization Chart of HSSE

The DIVHSSE environment sub-division, which is situated at PLN headquarters, comprises five further sub-divisions: Security, Occupational Health and Safety, Environmental Operational Management, Environmental Management Planning, and Climate Mitigation and Safeguards. Environmental safeguard functions are assigned to the latter two subdivisions.

The Environmental Management Planning sub-division functions are: environmental performance monitoring and evaluation; advising on the suitability of environmental permits for project operations; advising on implementation of UKL and RKL; advising on Indonesia's Performance Rating Program in Environmental Management (PROPER), which is a national-level public environmental reporting initiative; andimplementation and evaluating implementation of natural resource and energy utilization programs.

The Climate Change and Safeguard Management subdivision functions are: developing a climate change mitigation work program; advising on management of a carbon credit scheme; advising on environmental feasibility studies for foreign funded projects; advising on preparation of bidding document for foreign funded projects; advising on environmental management provisions in loan agreements; preparing terms of reference for AMDAL; advising on consultant recruitment, handling permitting and spatial planning requirements; reviewing AMDAL; and evaluating ex-post evaluation reports for foreign funded projects.

Similarly, at the UID organization level (both in East Java and Bali), there is a unit which responsible for K3L (occupational health and safety and environment), called as "Biro Pengendali K3L" as shown in Figure 10. The unit (Biro K3L) is responsible to planning, monitoring of the implementation, and control of LB3 (hazardous wastes management) and environmental and occupational health and safety issues.

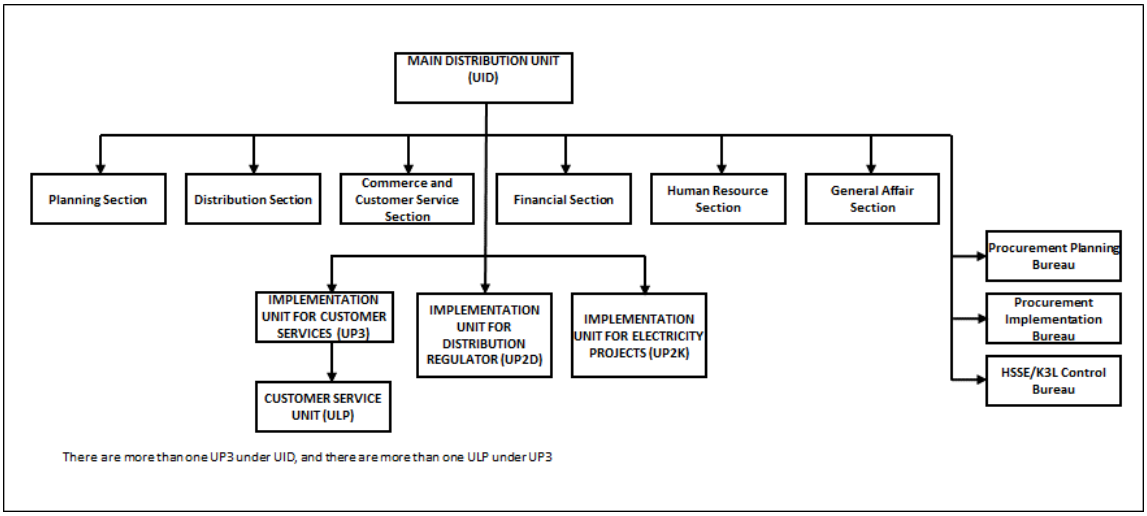


Figure 10 Organization Chart of UID (with dedicated unit for safeguard)

To support implementation at district level, the structure of UP3, UP2D and UP2K also assign staff responsible for K3L issues respectively, as shown in Figure 11.

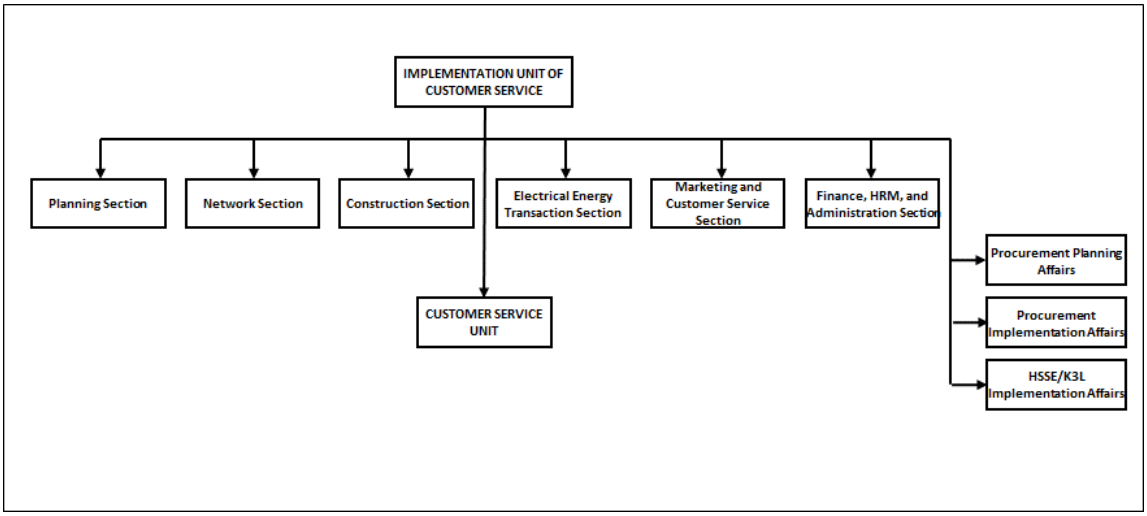


Figure 11 Organization Chart of UP3, UP2D and UP2K (with dedicated unit for safeguard)

8.2 Role and Capacity Building

PT PLN (Persero) has set up and provided human resources required to apply and maintain SMK3. In recruitment of human resources UID of PT PLN (Persero) refer to effective procedure:

1) Recruitment of human resources has to meet the requirement and competence as well as authority as proved by certificates, work permits and assignment of authorized party
2) Identification of work competence at each level and conduct training required (as shown in Table 18)

Table 19 Records of Training on Occupational Health, Safety and Environment (UID Bali)

No	Name of Safeguard Training	Number of Participants
1	Certificate of “Safety Culture Maturity Model”	67
2	First Aid Training	75
3	Reporting on Environmental Management and Monitoring	20
4	Preparation of UKL-UPL	17
5	Guidance and Certification of Fire Fighting	22
6	Workshop on Occupational Health and Environment	28
7	Hazardous Waste Management	19

In addition, PLN has a capacity development master plan, including for environmental safeguards training at basic, intermediate and advanced levels. Capacity building is conducted both at the PLN Corporate University and by external training providers.

The HSSE Academy in Semarang, provides environmental training on a variety of topics, including:

- Mentoring on environmental protection and management
- Environmental audit
- Corporate performance rating program in environmental management
- Environmental management and monitoring toward PROPER-based green company
- Preparation of environmental feasibility of electricity project’s environmental management system
- Basic electricity safety and environment
- Advanced electricity safety and environment

8.4 Implementation Arrangement

UID is responsible for the construction, operation and maintenance of distribution lines. Each UID has some units called UP3, which is in charge of construction of distribution lines. Each UP3 has some units called ULP, which is in charge of customer services including maintenance of distribution lines within sub-districts. The ESMPF describes PLN’s institutional capacity at all levels to manage environmental and social risks and impacts and likewise outlines organizational roles and responsibilities in implementing the ESMPF and recommend measures to strengthen the same if needed at both PLN and contractors levels.

Since most environmental and social impacts of subprojects result from activities directly under the control of contractors and will be mitigated directly by the same contractors, requirements for EHS and Social capacity, including having sufficient competent resources and a suitable E&S management system, and introduction of detailed EHS and Social clauses in contracts will be required and covered in the ESMPF. This shall include monitoring mechanisms of PLN over its contractors, as well as reporting mechanisms of contractors to PLN and PLN to AIIB.

8.5 Budget and Implementation Schedule

The implementation schedule may need to be updated from time to time based on detailed design and operational progress.

The estimated costs (including those responsible for funds) for environmental management for the UKL-UPL will be allocated in PLN's annual budget, indicate the proposed expenditures for the plan, and ensure that the items have been adequately budgeted.

APPENDICES

Appendix 1 AIIB Environmental and Social Exclusion List

The Bank will not knowingly finance Projects involving the following:

(i) Forced labor[i] or harmful or exploitative forms of child labor;[ii]

(ii) The production of, or trade in, any product or activity deemed illegal under national laws or regulations of the country in which the Project is located, or international conventions and agreements, or subject to international phase out or bans, such as:

- Production of, or trade in, products containing polychlorinated biphenyl (PCBs).[iii]
- Production of, or trade in, pharmaceuticals, pesticides/herbicides and other hazardous substances subject to international phase-outs or bans (Rotterdam Convention, Stockholm Convention).[iv]
- Production of, or trade in, ozone depleting substances subject to international phase out (Montreal Protocol).[v]
- Trade in wildlife or production of, or trade in, wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).[vi]

(iii) Trans-boundary movements of waste prohibited under international law (Basel Convention).[vii]

(iv) Production of, or trade in, weapons and munitions, including paramilitary materials.

(v) Production of, or trade in, alcoholic beverages, excluding beer and wine.[viii]

(vi) Production of, or trade in, tobacco. [ix]

(vii) Gambling, casinos and equivalent enterprises. [x]

(viii) Production of, trade in, or use of unbonded asbestos fibers. [xi]

(ix) Activities prohibited by legislation of the country in which the Project is located or by international conventions relating to the protection of biodiversity resources or cultural resources, such as, Bonn Convention, Ramsar Convention, World Heritage Convention and Convention on Biological Diversity. [xii]

(x) Commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests.

(xi) Production or trade in wood or other forestry products other than from sustainably managed forests.

(xii) Marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

i Forced labor means any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty (including any kind of forced or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements, or labor by trafficked persons).
ii For purposes of this List, harmful or exploitative forms of child labor means the employment of children under the age of 18 for work which by its nature or the circumstances in which it is carried out is likely to jeopardize their health, safety or morals; but if the laws or regulations of the country in which the Project is located provide, in conformity with the International Labour Organization's Minimum Age Convention, 1973, that children at least 16 years of age may be employed for such work on condition that their health, safety and morals are fully protected and that they have received adequate specific instruction or vocational training in the relevant branch of activity, then child labor means employment of children for work that does not comply with these laws and regulations.
iii PCBs: Polychlorinated biphenyls are a group of highly toxic chemicals. PCBs are likely to be found in oil-filled electrical transformers, capacitors and switchgear dating from 1950 to 1985.
iv United Nations Consolidated List of Products whose Consumption and/or Sale have been Banned, Withdrawn, Severely Restricted or not Approved by Governments; Convention on the Prior Informed Consent Procedures for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention); Stockholm Convention on Persistent Organic Pollutants; World Health Organization Recommended Classification of Pesticides by Hazard. A list of pharmaceutical products subject to phase outs or bans is available at http://www.who.int. A list of pesticides, herbicides and other hazardous substances subject to phase outs or bans is available at http://www.pic.int.
v Ozone Depleting Substances (ODSs): Chemical compounds which react with and deplete stratospheric ozone, resulting in the widely publicized "ozone holes." The Montreal Protocol on Substances that Deplete the Ozone Layer lists ODSs and their target reduction and phase out dates. A list of the chemical compounds regulated by the Montreal Protocol, which includes aerosols, refrigerants, foam blowing agents, solvents and fire protection agents, together with details of signatory countries and phase out target dates, is available from the United Nations Environment Programme, http://www.unep.org/ozone/montreal.shtml.
vi The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). A list of CITES listed species is available from the CITES secretariat, http://www.cites.org.
vii Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, see http://www.basel.int.
viii This does not apply to Clients who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to the entity's primary operations.
ix This does not apply to Clients who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to the entity's primary operations.
x This does not apply to Clients who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to the entity's primary operations.
xi This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20 percent.
xii Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) - http://www.cms.int/; Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention) - http://www.ramsar.org/; Convention Concerning the Protection of the World Cultural and Natural Heritage - http://whc.unesco.org/en/conventiontext/; Convention on Biological Diversity - https://www.cbd.int/.
xiii Non-compliance with International Maritime Organisation (IMO) requirements: tankers that do not have all required International Convention for the Prevention of Pollution from Ships (MARPOL), International Convention for the Safety of Life at Sea (SOLAS) certificates (including, without limitation, International Safety Management Code compliance), tankers banned by the Paris Memorandum of Understanding on Port State Control (Paris MOU), and tankers due for phase out under MARPOL regulation 13G. No single hull tanker over 25 years old should be used.
xiv Shipment of oil or other hazardous substances in tankers that do not comply with IMO requirements (IMO, MARPOL, SOLAS and Paris MOU).

Appendix 2 List of Indonesian Regulations on Environmental and Social

2.1. Environmental Regulations (By Hierarchy)

Law (UU):

- UU (Law) No. 5/1960 on Basic Stipulation of Agrarian Regulation
- Law 5/1990 on Conservation of Living Natural Resources and Ecosystems
- Law 12/1992 on Cultivation of Plants
- Law 7/994 on Ratification of Agreement Establishing the World Trade Organization
- UU No. 5/1994 on Ratification of UN Convention on Biodiversity (UN-CBD)
- UU No. 39/1999 on Human Right
- UU No. 41/1999 on Forestry
- Law 13/2003 on Labor
- UU No. 31/2004 jo. UU No. 45/2009 on Fishery
- Law 17/2004 on Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change
- Law 24/2007 on Disaster Management
- UU No. 26/2007 on Spatial Plan
- Law 30/2007 on Energy
- Law 14/2008 on Disclosure of Public Information
- Law 19/2009, Ratification of the Stockholm Convention on Persistent Organic Pollutants
- Law 32/2009 on Environmental Protection and Management
- Law 36 /2009 on Health
- Law 30 of 2009 on Electricity
- Law 11/2010 on Cultural Heritage
- Law 17/2013 on Civil Society Organizations
- Law 18/2013 on Prevention and Eradication of Forest Destruction
- Law 1/2014 (Amendment to Law of 27/2007 on the Management of Coastal Areas and Small Islands
- Law 12/2014 on Geothermal

Government Regulations (PP):

- Government Regulation 102/2000 on National Standardization
- Government Regulation Number 82 of 2001 on Management of Water Quality and the Control of Water Pollution
- Government Regulation (Minister of Agriculture) 1/2007 on Active Materials of Prohibited….and Restricted Pesticides
- Government Regulation (Minister of Agriculture) 42/2007 on Pesticide Monitoring
- Government Regulation 21/2008 on Disaster Management
- Government Regulation 30/2009 on Implementation Procedures for Reducing Emissions from Deforestation and Forest Degradation (REDD)
- Government Regulation 70/2009 on Energy Conservation
- Government Regulation 1/2010 on Water Pollution Control System
- Government Regulation 6/2010 on Norms, Standards, Procedures and Criteria for Forest Management in Protected Forest Management Units

- Government Regulation 12/2010 on Living Environment Management and Monitoring Efforts and Statement of Capability to Manage and Monitor the Living Environment
- Government Regulation 17/2012 on Guidelines for Community Involvement in the Process of Impact Assessment and Environmental Permitting
- Government Regulation 27/2012 on Environment License Holders' Responsibility.
- Government Regulation No. 24/2018 on OSS (Online Single Submission; Electronically Integrated Permitting Services)
- Government Regulation (Minister of Agriculture) 64/2013 on Organic Agriculture System
- Government Regulation 145/2013 on Measuring, Reporting and Verifying Climate Change Mitigation Actions
- Government Regulation Number 101/2014 on Hazardous and Toxic Waste Management.

Presidential Decrees and Regulations (Kepres/Perpres):

- Presidential Instruction 9/2000 Mainstreaming Gender in the Development Process
- Presidential Decree 32/1990 on Management of Protected Areas
- Presidential Decree 46/2001, Operation of the National Greenhouse Gas Inventory
- Presidential Regulation 23/1992 on Ratification of the Vienna Convention for Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer as Adjusted and Amended by the Second Meeting of the Parties London, 27-29 June 1990
- Presidential Decree 23/1992 on Ratification of the Montreal Protocol on Substances that Deplete the Ozone Layer
- Presidential Decree 46/2005 Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer
- Presidential Regulation Number 10 of 2011 on National Institution of Coordination of Agricultural, Fishery and Forestry Counseling.
- Presidential Regulation 61/2011, on National Action Plan for Greenhouse Gas Emission Reduction

Sector Regulations:

- Minister of Labor Decree 5/1996 on Work Safety and Health Management System
- Decree of the Head of Environmental Impact Management Agency 299/1996 on the Technical Direction of Social Assessment in EIA/AMDAL.
- Decree of the Head of Environmental Impact Management Agency 124/1997 on the Public Health Assessment in EIA/AMDAL
- Decree of Minister of Environmental Affairs 45/2005 on Guidelines for the Formulation of Reports on the Realization of Environmental Management Plans (RKL) and Environmental Monitoring Plans (RPL)
- Minister of Public Works Decree 9/2008 on Management System for of Worker Safety and Health in the Construction of Public Works
- Minister of Environment Decree 31/2009 on Direction and Control of implementation of Environmental Management, Ecolabelling, Clean Production, and Environmental Technology Use in Regions.

- Minister of Environment Decree 9/2010 on Guidelines on Community Grievances and Handling of Grievances Caused by Pollution and/or Degradation
- Minister of Environment Decree 5/2012 on Types of Business Plans and/or Activities Subject to Environmental Impact Analysis
- Minister of Environment Decree Number 17 of 2012 on Public Participation in AMDAL and Environmental License
- Decree of Minister of Environment No. 17/ 2012 on Guidelines for Community Participation and Environment Disclosure in EIA and Environmental Permitting
- Minister of Environment Decree Number 15 of 2013 on Measurement, Notification, and Verification of Mitigation Actions for Climate Change
- Permen ESDM 35/2013 on Permitting Procedure of Electricity Business
- Decree 62/2013 on Managing Agency for the Reduction of Emissions from Deforestation and Degradation of Forests and Peat lands
- Minister of Agriculture Decree 11/2015 on Principles and Criteria for Indonesian Sustainable Palm Oil Certification
- Special assessment for traffic generation and its impacts for settlements and infrastructure projects (Decree of Ministry of Transport No. PM 75/2015)
- Regulation of Ministry of Industry No. 40/M-IND/PER/7/2016 on Technical Guideline for Industrial Estate Development
- Regulation of Ministry of Environment and Forestry No. P.31/MENLHK/SETJEN/SET.1/5/2017 on Guideline of Gender Mainstreaming in Environment and Forestry and Regulation of Ministry of Forestry No. P.65/Menhut-II/2011 on Guideline of Gender Responsive Planning and Budgeting in Forestry Sector
- Decree of Ministry of Environment and Forestry No. 2300/MenLHK-PKTL/IPSDH/PLA.1/5/2016) on PIBIB (Indicative Map for Moratorium of New Permit, Revision X)
- Decree of Minister of Environment and Forestry No. P.22/Menlhk/Setjen/Set.1/3/2017 on Procedure of Complaint on Pollution and/or Environmental Deterioration and/or Forest Destruction
- Decree of Minister of Environment and Forestry No. 26/2018 on Guideline for Preparation and Review of and Examination of Environmental Document under Implementation of Online Single Submission
- Decree of Minister of Environment and Forestry No. P.23/MENLHK/SETJEN/KUM.1/7/2018 on Criteria for Business and/or Activities Requiring Permit Amendment
- Decree of Minister of Environment and Forestry No. P.24/MENLHK/SETJEN/KUM.1/7/2018 on Exemption of Obligation for Preparing EIA for Business and/or Activities Located in Kabupaten/Kota Prepared Detail Spatial Plan
- Decree of Minister of Environment and Forestry No. P.25/MENLHK/SETJEN/KUM.1/7/2018 on Guidance for Determining of Business and/or Activities Requiring Environmental Management and Monitoring Measures and Statement Letter on Environmental Management and Monitoring
- Decree of Minister of Environment and Forestry No. 38/ 2019 on Types of Business Plans and/or Activities Subject to Environmental Impact Analysis

PLN also has issued several internal regulations regarding to environmental management and occupation health and safety, among others:

- Decree of PLN's Directors No. 134.K/DIR/2007 on Policy on Environment, Occupational Health and Safety
- Decree of PT PLN (Persero) No. 200.K/DIR/2009 on Revision of Decree No. 059.K/DIR/2009 on Evaluation System of Performance Level of PT PLN (Persero).
- Decree of PT PLN (Persero) No. 114.K/DIR/2010 on Power Transformer
- Decree of the PLN's Directors (PLN decree) No. 473/2010 on Construction Standard for Low Voltage Power Network
- PLN Decree No. 606/2010 on Construction Standard for Medium Voltage Power Network
- Decree of PLN's Directors No. 473/2010 on Construction Standard for Low Voltage Electric Networks (for distribution lines)
- Decree of PLN's Directors No. 606/2010 on Construction Standard for Medium Electric Voltage
- Decree of PLN's Directors No. No. 605/2010 on Construction Standard for Distribution Substations and Relay Substations.
- Board of Directors' Regulation No. 501/2012 on Public Information Disclosure (KIP)
- Decree of PLN's Directors No. 0520-2.K/DIR/2014 on Collection of Guidelines of Maintenance for Primary Substation Equipment
- Decree of the PLN's Directors (PLN decree) on Waste Management of FABA and gypsum
- Decree of the PLN's Directors (PLN decree) on Guideline for Solid and Liquid Waste Management in PLN
- Regulation of PLN's Director No. 0028.P/DIR/2015 on Organization Structure, Responsibilities and Main Duties at Directorate of Human Capital Management PT PLN (Persero)
- Decree of PLN's Directors No. 0250.P/DIR/2016 on Guidelines for Work Safety in PT PLN (Persero).
- Decree of PLN's Directors No. 0252.P/DIR/2016 on Guidelines for Public Safety within PT PLN (Persero)
- Regulation of PLN's Directors No. 0179.P/DIR/2016 on Organization Structure
- Regulation of PLN's Directors No. 0225.P/DIR/2016 dated 24 May 2016 and Decree of PT PLN (Persero) Number: 0490/SDM.01.03/DIVORG/2016 on Organization of UIP and Implementing Units

Local Regulations (Perda):

- Provincial Regulation of Bali No. 1/2017 on Environmental Protection and Management
- District Regulation of Jembrana No. 3/2018 on Types of Business and/or Activities Requiring UKL-UPL or SPPL
- Local Regulation of East Java No. 5/2012 on Regional Spatial Plan 2011 – 20131

2.2 Social Regulations

National Regulations

a. Law No. 5 of 1960 on Basic Regulations on Agrarian Principles

b. Law No. 7 of 1984 on Ratification of Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)

c. Law No 39 of 1999 on Human Rights

d. Law No. 11 of 2005 on Ratification of International Covenant on Economic, Social and Cultural Rights (ICESR)

e. Law No. 11 of 2009 on Social Welfare

f. Law No 30 of 2009 on Electricity

g. Law No 13 of 2011 on Handling of the Poor

h. Law No. 7 of 2012 on the Handling of Social Conflicts

i. Law No. 2 of 2012 on Acquisition of Land for Development in the Public Interest

j. Presidential Instruction No. 9 of 2000 on Gender Mainstreaming in National Development

k. Presidential Instruction No. 10 of 2011 on Suspension of Granting New Licenses and Improvement of Natural Primary Forest and Peatland Governance

l. Presidential Regulation (PP) No. 71 of 2012 on the Implementation of Acquisition of Land for Development in the Public Interest. The law is amended with the PP No. 148 of 2015 for the 4th amendment.

m. PP No. 3 of 2016 on Acceleration the Implementation of the National Strategic Projects. The law is amended by the Presidential Regulation No. 56 of 2018 regarding Second Amendment of Presidential Regulation No. 3 of 2016, which lists the National Strategic Projects.

n. Presidential Instruction No. 1 of 2016 on Acceleration the Implementation of the National Strategic

o. PP No. 4 of 2016 on Acceleration of the Electricity Infrastructure Development

p. PP No. 84 of 2017 on Settlement of Land Control in Forest Areas

q. PP No. 88 of 2017 on Settlement of Land Control in Forest Area

r. PP No. 62 of 2018 on the Mitigating Social Impact on Communities in Land Acquisition for National Development

s. Government Regulation No. 24 of 1997 on Land Registration

t. Government Regulation No. 14 of 2012 on Electricity Supply Business Activities

u. Government Regulation No. 2 of 2015 on Implementing Law No. 7/2012 on the Handling of Social Conflicts

v. Government Regulation No. 45 of 2017 on Community Participation in Local Government Management

Sector Regulations

a. Head of National Land Agency Regulation No. 5 of 2012 on the Technical Guidelines for Land Procurement

b. Minister of Villages and Development of Disadvantaged Regions Regulation No. 2 of 2015 on Guidelines for Village Decision-making

c. Minister of State-Owned Enterprises Regulation No. 9 of 2015 on Corporate Social Responsibility in State Owned Enterprises as amended by Regulation No. 3 of 2016

d. Minister of Home Affairs Regulation No. 1 of 2016 on Managing Village Assets

e. Minister of Agrarian Affairs and Spatial Planning/Head of National Land Agency Regulation No. 10 of 2016 on Procedures for Determining Communal Rights to Land of Indigenous People and Communities that Reside in Certain Areas

f. Ministry of Energy and Mineral Resources Regulation No. 33 of 2016 on Technical Solution for Land, Building, and/or Trees Owned by Peoples within Forest Areas for the Acceleration of Electricity Infrastructure Development

g. Minister of Finance Regulation No. 56 of 2017 on Amendment to Minister of Finance Regulation No. 101/PMK01/2014 on Public Appraiser

h. Ministry of Energy and Mineral Resources Regulation No. 27 of 2018 on Compensation for Land, Building, and/or Plants under the Free Space of Electrical Transmission Lines

i. Minister of Agrarian Affairs and Spatial Planning/Head of National Land Agency Regulation No. 14 of 2018 on Location Permit

j. Ministry of Energy and Mineral Resources Regulation No. 2 of 2019 on amending Decree of Minister of Energy and Mineral Resource No. 18 of 2015 on Free Clearance and Minimum Free Clearance at High Voltage Air Transmission, Extra High Voltage Air Transmission, and Direct Current High Voltage Air Transmission for Power Distribution

k. Indonesia Valuation Standard 204 (SPI 204), 2018 on Valuation for Acquisition of Land for Development in the Public Interest

l. Ministry of Environment and Forestry Regulation No. 21 of 2019 on Indigenous Forests and Private Rights

Institutional Regulations (PLN)

The PLN decrees related to social, land acquisition and compensation are as below:

a. The PLN Board of Directors Decree No. 605 of 2010 on Construction Standard for Power Distribution Substation and Switching Substation

b. The PLN Board of Directors Decree No. 4606 of 2010 on Construction Standard for Medium Voltage Power Network

c. The PLN Board of Directors Decree No. 473 of 2010 on Construction Standard for Low Voltage Power Network

d. The PLN Board of Directors Decree no. 366 of 2007 on Company Social

Responsibility

e. The PLN Board of Directors Decree No. 344 of 2016 on Land Acquisition Procedures in PLN

f. The PLN Board of Directors Decree No. 289 of 2013 on Land Acquisition for the Purpose of Providing Electricity, Operational Costs of Land Acquisition, and Operational Cost of Compensation

Appendix 3 Comparison of ESS (AIIB) and Indonesia Country Safeguard and PLN System for Jatim – Bali Distribution Network Project

The following assessment were developed with reference of studies done by other development agencies[38] that also reflects the alignment with AIIB ESS.

3.1 Assessment on Regulatory System and Implementation Practices

ESS AIIB Related to the Project	Triggered Yes/No	Current system (policy & legal frameworks)/ practices and the gap
ESS 1 Environmental and Social Assessment and Management		
a. Assessment and Management Process		
Environmental and Social Assessment. Conduct an environmental and social assessment for the proposed Project to identify direct, indirect, cumulative and induced risks and impacts to physical, biological, socioeconomic and cultural resources in the Project's area of influence; include impacts on air and water quality, including environmental health; natural resources, including land, water and ecosystems; livelihoods; vulnerable groups; gender; worker and community health and safety; and cultural resources	Yes	**System** **Environmental** MOEF No. 38/2019 Regarding Type of Activities Requiring AMDAL is a prescriptive screening process used to determine whether projects are required to conduct an AMDAL and secure an environmental clearance from the environmental agency. Under MOEF No. 38/2019, AMDAL is required for business/activities listed in its Appendix I, which does not include distribution line. Law No. 32/2009 Regarding Environmental Protection and Management requires UKL-UPL for business/activities that do not have significant environmental impact. DLHD specifies the type of business/ activities require UKL-UPL. Under Law No. 32/2009, business/ activities that do not require AMDAL or UKL-UPL shall prepare SPPL. The determination of the type of business/activities which require SPPL shall be based on the following criteria; (i) not included in the category of significant environmental impact; and (ii) activities of micro and small enterprises. The templates of UKL-UPL and SPPL are at Appendix IV and V of Permen LH No.16/2012 Regarding Guidelines for Preparation of Environmental Documents respectively. It is also provided in Decree of Minister of Environment and Forestry No. 26/2018 on Guideline for Preparation and Review of and Examination of Environmental Document under Implementation of Online Single Submission. **Social and Indigenous People** MOEF No. 38/2019 requires AMDAL in case distribution lines are located in or directly adjacent to protected areas. Under a Government Regulation No. 27/2012 Regarding Environmental

[38] http://documents.worldbank.org/curated/en/673201468253521138/pdf/104284-REVISED-EA-P154805-ESSA-Box394881B-PUBLIC-Disclosed-3-29-2016.pdf, and ADB Additional Information to Program Safeguard Systems Assessment, INO: Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program

ESS AIIB Related to the Project	Triggered Yes/No	Current system (policy & legal frameworks)/ practices and the gap
		Permit, AMDAL requires the assessment of environmental and social impact that may include the impact on indigenous peoples or customary communities. However the subproject require AMDAL would not be covered in the project so the regulation is not applicable to the project **Practices** **Environmental** Law No. 32/2009 may require SPPL for distribution lines and MOEF No. 38/2019 requires AMDAL in case they are located in or directly adjacent to protected areas. PLN generally does not prepare environmental document for distribution lines so PLN is not complying with legislative requirements. DLHD s in these areas do not regulate distribution lines and prioritize power plants, transmission lines and major industries. UID Bali and UID East Java have information on the location of the protected areas and KBAs, which could be used for screening. **Social and Indigenous People** The main purpose of distribution line projects' assessment is to identify the potential customers based on the community's access to electricity, demand for electricity, and economic condition. The poor customers are connected to electricity free of charge. However, in general, Indigenous Peoples have limited access to electricity because most of them live in remote areas and not invited to the consultation on the development plan including electricity access projects. During identification of site locations, sacred physical cultural resources (mosques, temples, burial sites, historical sites, etc.) are avoided. The religious leaders, village heads, and temple/mosque committee are consulted about locating poles near temples, mosques, sacred trees, and other important sacred physical cultural resources. The potential IR impact of the program activities is limited to (i) use of no more than 0.2 m2 of land for installation of utility poles; (ii) possible removal of non-land assets (primarily trees) located within 2.5 m of the conductors (within the 7m wide ROW in the case of trees) during their stringing; and (iii) use of about 4.5 m^2 of land for installation of pole-mounted transformers. (. **Gap** Screening and environmental assessment is not conducted for distribution lines. While the activities in or directly adjacent to protected areas will be excluded from the scope of the program PLN does not have information for the screening. Screening

ESS AIIB Related to the Project	Triggered Yes/No	Current system (policy & legal frameworks)/ practices and the gap
		and social assessment is not conducted for distribution lines. Assessment of potential project impacts on community and particularly Indigenous Peoples is not conducted, though PLN respects and takes into consideration the options the affected Indigenous Peoples prefer in relation to the provision of project benefits and the design of mitigation measures.
Examination of Alternatives. Examine, all in a comparative manner: (a) alternatives to the proposed Project that are relevant to the stage of the Project's development; and (b) their potential environmental and social risks and impacts; and document the rationale for selecting the particular alternative proposed.	Yes	**System** There is no system (policy and legal frameworks), which requires alternatives' examination for distribution lines. **Practice** Regardless of the absence of legal requirement, alternatives on location, route, equipment, capacity, technical specifications and other design considerations are examined during selection and planning of subprojects by PLN. Pole locations are adjusted based on results of site surveys and request of affected household, which, as a result, mitigates negative environmental and social impacts. The process is documented in the respective SOPs for both new and addition for existing distribution lines, by a plan map. These SOPs are applied for all distribution power project in PLN. PLN UID Bali and UID Jatim have developed an annual working plan respectively based on the PLN Working Plan (RUPTL) 2019 – 2028 (http://bit.ly/RUPTL20192028) The screening process of PLN (UID) for proposed distribution system gives priority to: (i) areas located in a central district; (ii) communities in proximity to an area where an existing distribution line is operating; (iii) areas with sufficient generation capacity available; and (iv) areas with communities' request for electrification. **Gap** N/A
Address Impacts. Address environmental and social impacts in accordance with the mitigation hierarchy, with emphasis on avoiding impacts, or where avoidance is not possible, on minimizing them; and, where possible, enhance positive impacts by means of environmental planning and management.	Yes	
ESMPF. If: (a) the Project consists of a program or series of activities whose details are not yet identified at the time the Project is approved by the Bank; or if in exceptional circumstances, duly justified by the Client, the Bank determines that the environmental and social assessment of identified Project activities may be conducted using a phased approached, prepared an ESMPF. The purpose of the ESMPF is to ensure that the activities covered will be assessed and implemented in conformity with the ESP and applicable ESSs.	Yes	
Information Disclosure. Make environmental and social information on the Project available, in an accessible manner, and in a form and language(s) understandable to affected people and other stakeholders, during preparation and implementation of the Project so as to provide an opportunity to broadly identify and address environmental and social risks and impacts, those involving Involuntary Resettlement and Indigenous Peoples, and including community health and safety issues.	Yes	**System** Under Law No. 14/2008 Regarding Public Information, Chapter 1, Article 4, everyone has the right to obtain public information, attend public meetings to obtain public information, obtain copies of public information through an application, and/or disseminate public information. However there is no system requires the preparation of RP or IPP for distribution projects. **Practice** The environmental assessment is not disclosed

ESS AIIB Related to the Project	Triggered Yes/No	Current system (policy & legal frameworks)/ practices and the gap
		because the documents are not prepared. As for social information there is no particular information being disclosed. For RP and IPP, because PLN has been ensuring that there would be no involuntary resettlement and that Indigenous Peoples would receive culturally appropriate benefits and implementing culturally appropriate grievance procedures, no IRP and/or IPP is prepared for distribution projects. **Gap** There is a gap on how the information disclosed in PLN for both environmental and social aspects.
Meaningful Consultation and Grievance Mechanism. Carry out meaningful consultation with affected people and facilitate their informed participation. Ensure women's participation in consultation. Involve stakeholders, including affected people and concerned non- government organizations, early in the project preparation process and ensure that their views and concerns are made known to and understood by decision makers and taken into account. Continue consultations with stakeholders throughout project implementation as necessary to address issues related to environmental and social assessment. Establish a grievance redress mechanism to receive and facilitate resolution of the affected people's concerns and grievances regarding the project's performance.	Yes	**System** There is no system (policy and legal frameworks) that requires meaningful consultation and grievance redress mechanism for distribution lines. **Practice** Regardless of legal requirement, prior to civil works, consultation (socialization) and coordination are conducted by PLN and contractors with the village heads but not with all affected households. The agenda of the consultation includes project plan and safety. GRM has been developed by PLN through; (a) *Call Centre 123*; (b) online by using APKT; and (c) front line i.e. customer services which will also be used for the program. The complaints to the *Call Center 123* would be recorded and divided in three subjects: 1) Technical, 2) Customer services (commercial), and 3) Other (including environmental and social safeguards matters). The Call Center 123 and online using the APKT are the fastest means to raise a grievance to PLN. Upon receipt of complaints, they are immediately referred within a few minutes to the concerned technical unit/department which immediately dispatches unit to act on the complaints about distribution networks including those against construction impacts, environment, community health and safety, and resettlement issues. Normal response and resolution of a complaint is within one day. **Gap** Not all the affected households are involved in the consultation. Affected households are sometimes not informed about the pole location and would become aware of the distribution line project only when the contractor arrives to install the pole. Affected Indigenous Peoples may not be fully involved in the decision-making, especially if they

ESS AIIB Related to the Project	Triggered Yes/No	Current system (policy & legal frameworks)/ practices and the gap
		live in remote areas. The 123 is more focused on the technical complains, than safeguards matters.
Implementation and Monitoring. Implement the ESMP and ESMPF (as applicable) and monitor their effectiveness. Document monitoring results, including the development and implementation of corrective actions, and disclose monitoring reports in accordance with the Information Disclosure.	Yes	**System** There is no system (policy and legal frameworks) that requires environmental and social including IP monitoring of distribution lines. **Practices** PLN UID Bali and Jatim, being in charge of the construction and operation of distribution line, have one to two staff handling matters related to health and safety whose scope of work includes the monitoring of the compliance of the PLN Decrees. The result of the monitoring is summarized in occupational health and safety performance report and environmental performance report submitted to PLN headquarters quarterly. The environmental documents including monitoring reports are disclosed when requested by stakeholders including communities. For land and IP issues, coordination and consultation for use of land and affected trees/crops are handled by contractors during the construction stage. Contractors will collaborate with PLN on this matter only when they cannot settle cases with affected persons. All landowners and persons whose land and non-land affected by the projects would be signing consent form prepared by PLN. PLN monitors the project progress and number of customers, but not the project impacts on affected Indigenous Peoples. **Gap** PLN conducts monitoring focused on the implementation of occupational and community health and safety procedures but limited monitoring on the environmental management. Although PLN regional offices submit to PLN headquarters occupational health and safety performance report and environmental performance report quarterly, the environmental performance report focuses on environmental impacts of power plants, substations and transmission lines, and does not cover distribution lines which have relatively small impact. There is no documentation on ROW and project impacts on affected people.
Exclusion List. Ensure that the Project does not involve any activity or item listed in the Environmental and Social Exclusion List.	Yes	
b. Environmental Coverage		
Environmental Risks and Impacts. Undertake a broad assessment of potential environmental risks and impacts, both positive and adverse, associated with the Project. This includes direct and indirect	Yes	**System** The system may require SPPL for distribution lines and MOEF No. 38/2019 requires AMDAL in case they are located in or directly adjacent to protected

ESS AIIB Related to the Project	Triggered Yes/No	Current system (policy & legal frameworks)/ practices and the gap
impacts on the physical and biological environment, recognizing they are closely linked with social and economic conditions.		areas (see the <Practice> of Principles 1 and 2 above). AMDAL, UKL-UPL and SPPL are supposed to present measures to avoid, minimize, and/or offset adverse environmental impacts. MOER No. 33/2009 Regarding Recovery Procedure of Land Contaminated by Hazardous and Toxic Waste outlines the procedure for the restoration of contaminated land while Government Regulation No. 101/2014 Regarding Management of Toxic and Hazardous Waste Substances regulates the management and disposal procedures for toxic and hazardous waste substances. Other related environmental laws applicable to the program are Government Regulation No. 83/2001 Regarding Management of Water Quality and Water Pollution Control, Government Regulation No. 41/1999 Regarding Air Pollution Control, and MOER No. 48/1996 on Noise Standards. Decree of the Board of Directors of PLN (PLN Decree) No. 473/2010 Regarding Construction Standard for Low Voltage Power Network and PLN Decree No.606/2010 Regarding Construction Standard for Medium Voltage Power Network include the mitigation measures to be taken against environmental impacts caused by distribution line during construction and operation stages. The mitigation measures include proper handling of excavated soil, appropriate selection of vehicle for transportation of poles, recovery of excavation site, adequate distance from other objects (1-6 m depending on the kind of the objects), etc. PLN also restricts the use of herbicides during tree trimming and clearing. **Practices** The contract of the civil works specifies the compliance of PLN Decrees No. 473/2010 and No. 606/2010 **Gap** There is no EMP prepared for distribution lines and environmental management is not fully implemented.
Biodiversity Consideration. Consider direct and indirect Project-related impacts on biodiversity, for example habitat loss, degradation and fragmentation, invasive species, overexploitation, hydrological changes, nutrient loading, pollution and incidental take, as well as projected climate change impacts.	Yes	
Biodiversity Impacts. Avoid adverse Project impacts on biodiversity. When avoidance of adverse impacts is not possible, implement measures to minimize adverse impacts and restore biodiversity, including, as a last resort, biodiversity offsets.	Yes	
Critical Habitats. Project activities in areas of critical habitats are prohibited, unless: (a) there are no predicted measurable adverse impacts on the critical habitat that could impair its ability to function; (b) there is no predicted reduction in the population of any recognized endangered or critically endangered species; and (c) any impacts are mitigated.	Yes	
Natural Habitats. If the Project has to be implemented in an area of natural habitats, ensure there will be no significant conversion or degradation; and if feasible alternatives are not available, ensure that: (a) the Project's overall benefits substantially outweigh the environmental costs; and (b) any conversion or degradation is appropriately mitigated through measures acceptable to the Bank.	Yes	
Protected Areas. Where the Project occurs within or has the potential to adversely affect an area that is legally protected or internationally recognized or designated for protection, identify and assess these potentially adverse impacts and apply the mitigation hierarchy so as to avoid, or when avoidance is not possible, to mitigate those adverse impacts that would compromise the integrity, conservation objectives or biodiversity importance of the area.	Yes	
Sustainability of Land and Water Use. Assess the sustainability of land and water use in the area of the Project and in immediately adjacent areas.	Yes	
Precautionary Approach. Use a precautionary approach to anticipate,	Yes	

ESS AIIB Related to the Project	Triggered Yes/No	Current system (policy & legal frameworks)/ practices and the gap
prevent or minimize negative Project impacts on the environment, including the development and management of renewable natural resources.		
Pollution Prevention. Apply pollution prevention and control technologies and practices under the Project consistent with international good practice as reflected in internationally recognized standards, such as the World Bank Group's Environmental, Health and Safety Guidelines (EHSGs).	Yes	**System** Government Regulation No. 101/2014 regulates the proper management of hazardous waste covering; (i) method of identifying, reducing, storing, collecting, transporting, utilizing, processing, and hoarding hazardous wastes; (ii) risk mitigation and emergency responses to address environmental pollution caused by hazardous waste. The regulation considers the wastes discharged from distribution line projects including transformers and their oil as hazardous wastes, which require DLHD's permit for the storage. Under MOER No. 33/2009, restoration of contaminated land consists of four activities; (i) planning, (ii) implementation (land survey following Appendix I, determination of sampling points following Appendix II, and land restoration following Appendix III); (iii) evaluation; and (iv) monitoring. The entity responsible for the land restoration prepares a plan and submits it to MOEF for approval. The MOEF, Governor or mayor depending on the location monitors the implementation. The result of the implementation needs to be reported to MOEF that evaluates the implementation, confirms the compliance with MOER No. 33/2009, and issues a letter of "Contaminated Land Settlement Status". Once the letter is issued, monitoring of the contaminated land needs to be conducted at least semi-annually for one year, and the result needs to be submitted to the MOEF. **Practices** UID Jatim and Bali are complied with the MOER regulation on Pollution Prevention, Resource Efficiency and Climate Change and Greenhouse Gases. PLN specifies during procurement that transformers should be non-PCB. Based on interview during the site visits, there are no indications on PCB-containing transformers manufactured before the 1970s. PLN requires the power circuit breakers containing SF6 to meet the American National Standards Institute (ANSI) standards or International Electro-technical Commission (IEC) standards. **Gap** PLN UID Jatim and Bali to ensure the implementation of environmental mitigation
Resource Efficiency. Implement technically and financially feasible measures under the Project for improving efficiency in consumption of energy and water, as well as other resources and material inputs.	Yes	
Climate Change and Greenhouse Gases. Design and implement the Project so as to minimize emissions in accordance with the aims of the Paris Agreement of December 2015. Develop mitigation or adaptation measures to reduce risk of climate change, as relevant. Assess alternatives under the Project, and implement technically and financially feasible and cost-effective options that support meeting nationally determined contributions.	Yes	

ESS AIIB Related to the Project	Triggered Yes/No	Current system (policy & legal frameworks)/ practices and the gap
		measures to manage industrial wastes including hazardous wastes.
c. Social Coverage		
Social Risks and Impacts. Undertake a broad assessment of potential social and economic risks and impacts, both positive and adverse, associated with the Project, not limited to Involuntary Resettlement or impacts on Indigenous Peoples.	Yes	**Practice** The main purpose of distribution line projects' assessment is to identify the potential customers based on the community's access to electricity, demand for electricity, and economic condition. The poor customers are connected to electricity free of charge. However, in general, Indigenous Peoples have limited access to electricity because most of them live in remote areas and not invited to the consultation on the development plan including electricity access projects. During identification of site locations, sacred physical cultural resources (mosques, temples, burial sites, historical sites, etc.) are avoided. The religious leaders, village heads, and temple/mosque committee are consulted about locating poles near temples, mosques, sacred trees, and other important sacred physical cultural resources. The potential IR impact of the program activities is limited to (i) use of no more than 0.2 m^2 of land for installation of utility poles; (ii) possible removal of non-land assets (primarily trees) located within 2.5 m of the conductors (within the 7 m wide ROW in the case of trees) during their stringing; (iii) use of about 4.5 m^2 of land for installation of pole-mounted transformers and (iii) use of about 48 m^2 of land for installation of switching substation. **Gap** Screening and social assessment is not conducted for distribution lines. Assessment of potential project impacts on Indigenous Peoples is not conducted, though PLN respects and takes into consideration the options the affected Indigenous Peoples prefer in relation to the provision of project benefits and the design of mitigation measures.
Scope of Social Coverage. Provide in the assessment an overview of the full range of social risks and impacts, and identify measures for their avoidance or mitigation.	Yes	
Vulnerable Groups, Gender and Discrimination. Assess social risks and impacts that affect vulnerable groups or individuals, and any discrimination toward groups or individuals in providing access to development resources and Project benefits, particularly towards vulnerable groups. As necessary, incorporate measures to ensure that any discrimination is mitigated to the extent possible. Identify any potentially adverse gender-specific impacts of the Project, and develop mitigation measures to reduce these.	Yes	
Land and Natural Resource Access. Assess economic and social impacts relating to the involuntary taking of land or restriction on access to natural resources under the Project; risks or impacts associated with land and natural resource tenure and use, including (as relevant) potential Project impacts on local land use patterns and tenure arrangements, land access and availability, food security and land values, and any corresponding risks related to conflict or contestation over land and natural resources.	Yes	
Loss of Access to Assets or Resources or Restrictions on Land Use. If adverse environmental, social or economic impacts from Project activities involving loss of access to assets or resources or restrictions on land use that do not fall within the definition of Involuntary Resettlement under ESS 2 are identified, such impacts are avoided, or when avoidance is not feasible, they are at least minimized, mitigated, or compensated for, through the environmental and social assessment.	Yes	
Cultural Resources. Conserve cultural resources and avoid destroying or damaging	Yes	**System**

ESS AIIB Related to the Project	Triggered Yes/No	Current system (policy & legal frameworks)/ practices and the gap
them under the Project by using field-based surveys that employ suitably qualified and experienced experts for the assessment.		MOEF No. 38/2019, Article 3 requires AMDAL for activities in or directly adjacent to protected areas, which are listed in MOEF No. 38/2019, Appendix III, which includes areas of cultural heritage. The definition, criteria, procedures and mechanism for cultural heritage preservation is regulated in Law No. 11/2010 Regarding Physical Cultural Resources. **Practices** Distribution lines are primarily along roads and community areas, which have been disturbed by previous and existing developments. In addition, the depth of the excavation will only be 1-1.5 meters. Therefore chance finds are remote. However, in case they find physical cultural resources (mosques, temples, burial sites, historical sites, etc.), they are avoided as much as possible during identification of site locations. The village heads, religious leaders, and temple/mosque committee are consulted about locating poles near temples, mosques, sacred trees, and other important physical cultural resources. The process is documented in the SOP for both new and addition for existing distribution lines, by a plan map. This SOP is applied for all distribution power project in PLN. **Gap** N/A
d. Working Conditions and Community Health and Safety		
Safe Working Conditions and Community Health and Safety. Assess labor and working conditions of Project workers, as well as health and safety risks to local communities in the area of the Project.	Yes	**System** Law No. 13/2003 Regarding Manpower states that every company has the obligation to practice health and safety management and to integrate them into the company management system. Implementation of health and safety system had been issued by Government Regulation No. 50/2012 Regarding Practice of Health and Safety Management System. **Practices** To address the potential risks on workers' and communities' health and safety, health and safety guideline exclusively for distribution line is in place. However, during the trip some of the interviewed persons mentioned the deficiencies during construction by contractors such as lack of cover on construction material like sand on the roadside, while waiting for the pole to be installed, thus, causing potential hazards to community. Some of the distribution poles are also located very close to houses and trees, not complying with the safety clearance requirement. **Gap**
Child Labor and Forced Labor. In order to protect children from jeopardy to their health, safety or morals, ensure that children under the age of 18 are not employed for work under the Project.	Yes	
Traffic and Road Safety. Identify, evaluate and monitor traffic14 and road safety risks to Project workers and affected communities throughout the Project life-cycle, develop measures and plans to address them, and incorporate technically and financially feasible road safety components into Project design, where applicable, to prevent and mitigate potential road safety impacts on the affected communities.	Yes	

ESS AIIB Related to the Project	Triggered Yes/No	Current system (policy & legal frameworks)/ practices and the gap
		There is gap in terms of contractor's obligation and PLN's observance of safety clearance to ensure workers and community safety.

3.2 Action Plans to Fill the Gaps

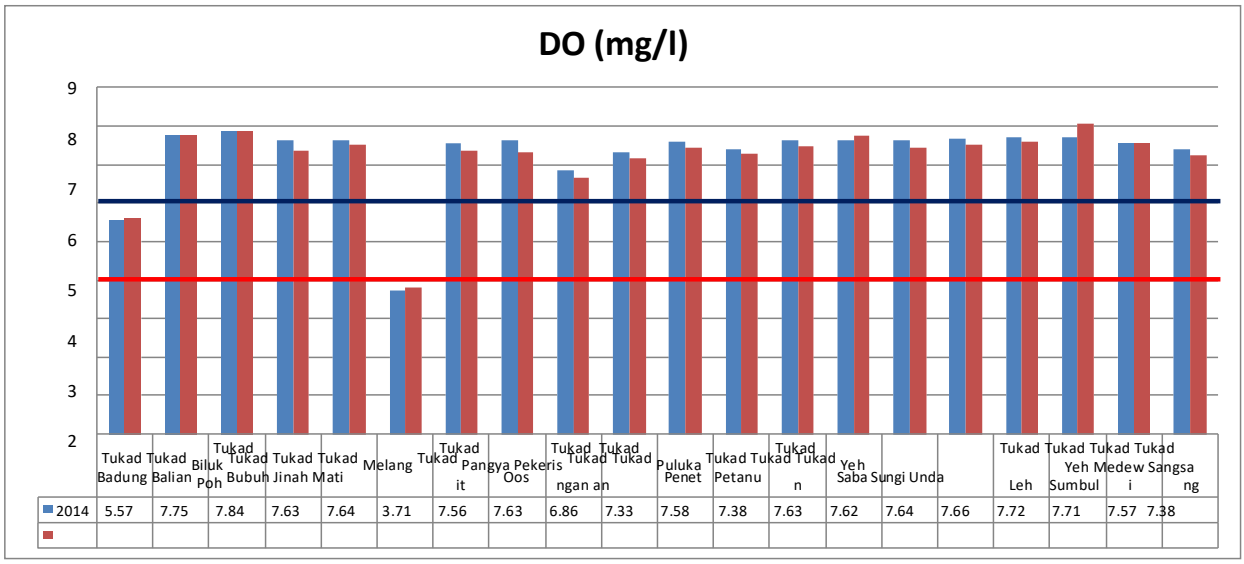
Based on the gaps identified the following action plans (measures) are proposed to improve the performance of the environmental and social management system of the Project.

No	Proposed Action	Indicator/Target	Responsible Agency
General			
1	Issue a guidance on safeguards screening on the implementation of the project	The guidance on environmental and social safeguards for screening and assessment for: 1. Eligibility screening: exclude all activities that would be classified as any Category A Project, or Project requires Amdal, land acquisition and involuntary resettlement, or triggers adverse Impact IPs and listed on the negative list of activities 2. Safeguards Screening: if the project is deemed eligible, the project is screened using the Environmental and Social Safeguards Guidance Form (Appendix 6) to determine potential safeguards risks, and categorization, and make a Rapid Environment and Social Assessment 3. Preparation of Environmental Document; ESMP and UKL/UPL or SPPL.	PLN HSSE Div UID Bali UID Jatim UID Bali UID Jatim
2	Strengthen meaningful consultation and disclosure of information with affected peoples and stakeholders	Process and result of the meaningful consultations and disclosure information with affected peoples, particularly IPs, and stakeholders documented and reflected in relevant work plan map of subprojects.	UID Bali UID Jatim
3	Establishment of a project effective GRM	To optimize the usage of current PLN's complain system by adding: a) explicit attention to vulnerable groups and the participation of women, b) awareness among affected persons about a proposed project and its implications until construction commences, c) documentation of all grievances	PLN HSSE Div with coordination with PLN 123 hotline
4	Issue a guidance on Sub-project Rapid E & S Assessment and ESMP	The guidance on Rapid E & S Assesssment for each sub-project aimed for ensuring: 1. Identification and rapid assessment of environmental risks and impacts in accordance with this ESMPF 2. Compliance with general safety and occupational health (K3) requirement 3. Compliance with electrical safety of the installation and workplace (K2) requirement 4. Compliance with public safety and health requirement 5. Preparation of a comprehensive sub-project specific ESMP.	PLN HSSE Div

Environmental Safeguards			
5	Ensure the application of environmental assessment and management to the construction of distribution lines	(i) Environmental document in compliance with this ESMPF (including UKL-UPL or SPPL and enhancement driven by this ESMPF) prepared for the construction of distribution lines and submitted to (and in case of UKL-UPL, approved by) DLHD before commencement of any construction work	UID Bali UID Jatim
		(ii) Environmental mitigation measures in the form of the sub-project ESMP (see Annex 13) specified in the environmental & social documention included in the contract document before the award of contract	UID Bali UID Jatim
		(iii) Implementation of the mitigation measures monitored	UID Bali UID Jatim
		(iv) In case non-compliance of the proposed mitigation measures are identified, corrective actions shall be proposed and implemented	UID Bali UID Jatim
6	Improve the management of waste and asset at warehouse site	(i) Inventory of used equipment for disposal prepared	UID & UP3 Bali UID & UP3 Jatim
		(ii) Existing oil spills cleaned up in accordance with relevant regulations (including MOER No.33/2009 and Government Regulation No. 101/2014 and Permen LHK No. 101/2018) with excavated hazardous waste material disposal at appropriately licensed hazardous waste disposal facilities with records of all transfer notes retained	UID & UP3 Bali UID & UP3 Jatim
		(iii) Warehouse sites (with hazardous wastes) equipped with oil containment/protection measures	UID & UP3 Bali UID & UP3 Jatim
7	Enhance management of community health and safety risks along distribution lines (including transformers) under operation	(i) Awareness building (for prevention of tall vegetation along the distribution lines and prevention of public contact with potentially dangerous electrical equipment) conducted for communities	UID Bali UID Jatim (Public Relation Division)
		(ii) Performance of tree trimming by the distribution line maintenance contractors monitored	UID Bali UID Jatim
		(iii) Safety notice posted on newly and extension installed distribution transformers	UID Bali UID Jatim (through contractors)
Social Safeguards (Land Use)			
8.1	Ensure the application of environmental assessment and management to the construction of distribution lines	Conduct socio-economic survey, identify stakeholders, prepare social assessment and stakeholder engagement plan, conduct stakeholder consultation	UID Bali UID Jatim
8.2	Obtain written agreement from the land owners for the use of land for distribution transformers	Written agreement obtained and documented, including restriction on activities undertaken within the right-of-way.	UID Bali UID Jatim
Monitoring			
9	Monitor and ensure the implementation of Environental and Social Management Plan	(i) Implementation of the program action 4 (i.e. preparation of Rapid E&S Assessment and ESMP for each sub-project) monitored, documented and reported to PLN UID regularly (at least semi-annually), with records (transfer notes) of hazardous waste's disposal at appropriately licensed facilities	UP3 Bali UP3 Jatim (focal persons)

		(ii) Implementation of the program actions; 2, 3, 4, 5, 6, 7 and 8 monitored, documented and reported to Div PPT (Permit and Land Division), and Div HSSE regularly (at least quarterly)	UID Bali UID Jatim (focal persons)
		(iii) The list of distribution line projects (with the village names and the length of distribution lines) with the result of safeguards screening, key findings of the rapid E&S Assessment and implementation of the ESMP documented and submitted to Div HSSE semi-annually	UID Bali UID Jatim

Appendix 4 Sample Information on Water Quality (Dissolved Oxygen in Rivers, Bali)



Appendix 5 Sample Information on Biodiversity (West Bali National Park)

No	Name	Distribution
Mammal		
1	Trenggiling (*Manis javanicus*)	Sepenanjung Prapat Agung, Teluk Trima, Tegal Bunder, Cekik sampai Palasari
2	Jelarang (*Ratufa bicolor*)	Gn. Penginuman, Gn. Kelatakan, Gn. Ulu Teluk Trima, Gn. Nyangkrut, Kelatakan sampai Palarasi, Prapat Agung
3	Landak (*Hystrix brandiywa*)	Cekik sampai Sumbersari, Kelatakan, Sumber Klampok sampai Banyuwedang, Sepenanjung Prapat Agung, dan Tegal Bunder.
4	Kucing hutan (*Felis bengalensis*)	Sepenanjung Prapat Agung, Sumber Klampok dan sepanjang sungai Ulu Teluk Trima, Kelatakan. Sumbersari
5	Luwak (*Felis marmorata*)	Sepenanjung Prapat Agung, Tegal Bunder sampai Teluk Trima, Kelatakan sampai Palasari
6	Rusa (*Cervus timorrensis*)	Hampir di seluruh kawasan, terutama pada hutan dataran rendah
7	Kijang (*Maatiaats muntjak*)	Hampir di seluruh kawasan, terutama daerah padang rumput dan sepanjang aliran sungai
8	Banteng (*Bosjavanicus*)	Sumberejo, Teluk Trima, Kampyak sampai aliran sungai Ulu Teluk Trima, Lebak Buah sampai Palasari
9	Kancil (*Tiagulus javanicus*)	Sepenanjung Prapat Agung, daerah hulu sungai Ulu Teluk Trima. Gn. Penginuman, Gn, Kelatakan.
Aves		

10	Gangsa Batu (*Sula leucogastef*)	Sepanjang garis pantai Sepenanjung Prapat Agung, Teluk Gilimanuk, Teluk Banyuwedang dan Pulau Menjangan sebelah barat
11	Kuntul karang (*Egreta sacra*)	Teluk Gilimanuk, sepanjang garis pantai Sepenanjung Prapat Agung, P. Menjangan, Tl. Trima, Banyuwedang serta Palasari & sekitarnya
12	Ibis Putih (*Theskonis melanochepalus*)	Tl. Glimanuk & sekitarnya, Palasari
13	Elang tikus (*Elarnis caeruleus*)	Tegal Bunder, Sepenanjung Prapat Agung, P, Menjangan. Palasari & sekitarnya
14	Elang hitam (*Spizaetus cirrbatus*)	Sepenanjung Prapat Agung, Tegal Bunder. Tl, Trima, Banyuwedang, Kelatakan, Sumbersari, Ambyarsari sampai Palasari
15	Elang Belalang (*Nicwhierax fiingillarius*)	
16	Gagajahan Besar (*Numenius arquata*)	Tl. Gilimanuk, Sepenanjung Prapat Agung sampai Banyuwedang dan P, Menjangan sebelah barat
17	Gagajahan Kecil (*Numenius minutus*)	Tl. Gilimanuk dan P. Menjangan sebelah barat
18	Camar Karudi Putih (*Ancus minutus*)	Sepenanjung Prapat Agung, P. Menjangan dan Tl. Gilimanuk
19	Raja Udang Bini Kecil (*Alcedo caerulescens*)	
20	Raja Udang Merah (*Ceyx erithacus*)	Tepi pantai di Cekik, Penginuman sampai Kelatakan, Tl, Trima dan Banyuwedang
21	Raja Udang Kalung Putih (*Halcyon chloris*)	Tepi pantai Kelatakan sampai Cekik, Sepenanjung Prapat Agung, Tl. Gilimanuk, Tl. Trima dan Banyuwedang
22	Raja Udang (*Halcyon sancta*)	Cekik & sekitarnya, Tl. Gilimanuk, Tl. Trima, P.Menjangan S Sepenanjung Prapat Agung
23	Burung Paok Ekor Biru (*Pitta guajand*)	Sumberejo, Tl, Trima, Gn, Kelatakan, Cekik sampai Sumbersari & sekitar Palasari
24	Burung Kipas (*Rhipidura javanica*)	Di seluruh kawasan terutama Sepenanjung Prapat Agung, dan Gn. Kelatakan & sekitarnya
25	Jalak Bali Putih (*Leucopsar rothschildi*)	Endemik & terbatas di Sepenanjimg Prapat Agimg
26	Jalak Putih (*Sturnus melanopterus*)	Prapat Agung, Tegal Bunder, Tl. Trima sampai Banyuwedang, Sumbersari sampai Palasari
27	Bluwak (*Mycteria cinarea*)	Tl. Gilimanuk, Sepenanjimg Prapat Agung fdaerah pasang surut Prapat Agung sampai Kota
27	Bluwok (*Mycteria cinarea*)	Tl. Gilimanuk. Sepenanjung Prapat Agung daerah pasang surut Prapat Agung sampai Kota

28	Pecuk Ular (*Anhinga mekmog aster*)	Tl. Gilimanuk dan Palasari
29	Bangan Tongtong(*Leptopttios javaniais*)	Tepi laut Sepenanjung Prapat Agung, Tl. Gilimanuk, Tl. Trim a, Banyuwedang dan Palasari
30	Elang Laut Perut Putih (*Haliaetus leocogaster*)	Sepenajnjung Prapat Agung sampai Banyuwedang, Tl. Gilimanuk. Tegal Bunder sampai Palasari
31	Dara Laut Jambul Besar (*Sterna bergif*)	Sepenanjung Prapat Agung dan P. Menjangan
32	Elang Ular (*Spilornis cheela*)	Sumber Klampok, Tegal Bunder, Sepenanjung Prapat Agung, P. Menjangan, Banyuwedang, Sumbersari & Palasari
33	Burung Madu Kuning (*Necta riniajugu laris*)	Tl. Gilimanuk, Cekik sampai Palasari, Tl. Trima, Tl. Banyuwedang dan Sepenanjung Prapat Agung
34	Wili-wili (*Esacus magnirostris*)	Tl. Gilimanuk, sepanjang garis pantai Sepenanjung Prapat Agung, P. Menjangan dan Labuhan Lalang
35	Dara Laut (*Sterna dougaUii*)	P. Menjangan dan Sepenanjung Prapat Agung
36	Dara Laut Hirunda (*Sterna hirundo*)	Sepanjang pantai Sepenanjung Prapat Agung, Tl. Gilimanuk & P. Menjangan
37	Dara Laut Kecil (*Sterna albiforns*)	Tepi bar at P. Menjangan & Tl. Gilimanuk
Reptile		
38	Penyu Rider (*Lepidochelys olivaceae*)	Teluk Kelor, Teluk Gilimanuk dan atau seluruh Sepenanjung Prapat Agung

Source: TNBB (2015)

Appendix 6 Environmental and Social Screening and Rapid Assessment Guidance for Distribution Line

The following guide questions shall be used as reference in filling up Appendix 7 and preparing the Rapid E&S Assessment for the sub-project.

6.1 Screening Guidance

Province: Subproject Name: Subproject Location:

Environmental and Social Screening Criteria	Project Requirement
Environmental Impact Assessment Requirement AMDAL is an assessment report on the significant impacts of business or activities on the environment that is necessary for the process of the decision-making regarding the implementation of the business/activities. For activities with less significant impact, only require UKL-UPL or SPPL.	
1. Does the subproject trigger for requirement for preparing environmental impact assessment (AMDAL) as referred to Permen LHK No. 38/20019?[39]	If "Yes", the subproject is not qualified to be included in AIIB power distribution project, If "No" it should be covered in an UKL-UPL or SPPL
2. Does the subproject involves replacement of old transformers before 1996?	If "Yes", the subproject is not qualified to be included in AIIB power distribution project. If there is replacement of old transformer (installed after 1996) it shall be indicated age/model/typed of the transformer[40]
3. Does the distribution line and its supporting facilities meet the safety distance/clearance as per applicable regulation	If "No", the subproject is not qualified to be included in AIIB power distribution project
Natural Habitat Defined as the type of natural environment in which a particular species of organism lives. It is characterized by both physical and biological features and that human activity is not essentially change the main ecological functions of the area	
4. Is the subproject located in a legally protected area based on Forestry Map?	If "Yes", the subproject is not qualified to be included

[39] If not trigger AMDAL, it shall prepare UKL-UPL or SPPL

[40] n the respective sEMP, there shall be prepared a hazardous wastes management as prevailing laws and regulagtions

5. Is the subproject located in a KBA?	If "Yes", the subproject is not qualified to be included
6. Will the subproject significantly make impact of degradation or change of the natural habitat and/or forest in the protected area, proposed protected area or area considered with special ecology?	If "Yes", the subproject is not qualified to be included

Indigenous Peoples (IPs)

Identification of the existence IPs is aimed to guarantee that IPs would be treated as well as other community members and given opportunity to participate and get access to the benefit of the project with ways that would not threat their exclusive culture and welfare. The project has to give correct and detail information of the objective and plan (design, schedule etc) of the subproject with consultation with the IPs before any construction activity in the area started.

The term IPs is used generally for a ethnic individual or group that: (i) are considered by national or local laws or policies as well as anthropological researches/studies as belonging to ethnic minorities or Indigenous Peoples; (ii) identify as being part of a distinct social and cultural group; (iii) self-identify as being part of a distinct social and cultural group; (iv) maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories; (iv) maintain cultural, economic, social, and political institutions distinct from the dominant society and culture; (v) speak a distinct language or dialect; (vi) have been historically, socially, and economically marginalized, disempowered, excluded, and/or discriminated against; (vii) represented as "Indigenous Peoples" or as "ethnic minorities" in any formal decision-making bodies at the national or local levels.

Reference for IPs is the IPs List from Social Ministry, 2010 and Aman Publication (https://brwa.or.id/)

7. Is the subproject area affected community: (i) Are considered by national or local laws or policies as well as anthropological researches/studies as belonging to ethnic minorities or Indigenous Peoples? (ii) Identify as being part of a distinct social and cultural group? (iii) Self-identify as being part of a distinct social and cultural group? (iv) Maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories (v) Maintain cultural, economic, social, and political institutions distinct from the dominant society and culture? (vi) Speak a distinct language or dialect? (vii) Have been historically, socially, and economically marginalized, disempowered, excluded, and/or discriminated against?	If "Yes" in any of the question no 7, do the steps explained above. There should be (i) application letter from the community/village head; (ii) proof of dissemination of the notice for consultation; (iii) notes on when is the consultation being held, who attend the consultation, what is the result, and documentation of every consultation, with list of attendance segregated by gender. The form of attendance list and notes of meeting is attached in Appendix 11

(viii) Represented as “Indigenous Peoples” or as “ethnic minorities” in any formal decision-making bodies at the national or local levels?	
8. Is there any adverse impact on any groups identified (by answering “Yes”) on the point 5?	If “Yes”, the subproject is not qualified to be included
Cultural Resources Cultural resources includes tangible culture (such as buildings, monuments, landscapes, books, works of art, and artifacts), intangible culture (such as folklore, traditions, language, and knowledge), and natural heritage (including culturally significant landscapes, and biodiversity)	
9. Is the subproject temporary or permanently causing relocation or any other negative impacts to cultural heritage that has important significance for local, regional or national based on provincial or national list, proposed provincial or national list, and/or just has been identified when the public consultation with project affected people was held?	If “Yes”, the subproject is not qualified to be included
10. Is there any cultural heritage especially with important value for local community (eg. ancestral tomb) being negatively affected by the subproject?	If “Yes”, the subproject is not qualified to be included
Land Use The development of or erection of distribution poles will require use of land. The land requirement would be optimized by using government owned land. For Right of Way, private land might be affected if there is no existing Right of Way available, and/or necessary to connect to private customers. Consent of landowners for use of their land and people whose non-land assets impacted by the project would be secured using written documentary evidences as in Appendix 11. During the construction phase, there would be land to be used temporary for construction activities. The contractor on behalf of PLN would maximise the usage of public land like roadside, and will rent private land with budget taken from the construction contract if public land is not available.	
11. Is there any land owned by individual or organisation to be affected because of the subproject?	If “Yes”, the (i) letter request from private land owner for electricity connection, (ii) consent form has to be filled and collected Keep all written letter request and filled consent documentation in hard copies
12. Is there any subproject activity that would restrict or close access to the community usual activities, facilities and services, productive assets and natural resources permanently or temporarily?	If “Yes”, explain briefly why there would be restriction and/or closure and what would be the arrangement with the landowners and land users. Explanation: Keep all written filled consent documentation in hard copies

13. Is there any crops and/or trees or fixed assets, loss of business or enterprises owned by individual or organisation to be affected because of the subproject?	If “Yes”, explain briefly what would be the impacts of the trees and crops, loss of business or enterprises and the arrangement with the landowners, business owners and land users. Keep all written filled consent documentation in hard copies include reference/basis for compensation.
14. Is there any adverse impact on social and economic activities arising from change in land use	If “Yes”, explain briefly what would be the adverse impacts on social and economic activities arising from change in land use
15. Is there restrictions on land and resources owned communally or by the Government	If “Yes”, explain briefly what would be the impacts of the restrictions on land and resources owned communally or by the Government
16. Is there any private land to be used temporary during the construction phase for any construction activities?	If “Yes”, explain briefly: - location(s) of private land to be used - evidence(s) that the land would be rented under contractor’s contract
Safety Distance According to Kepdir 473.K/Dir/2010 of PLN Board of Construction Standard of Low Voltage Electricity Network, safety distance related to distribution lines defined as the distance where the distribution lines is not reachable by human hands and vehicles moving below, regardless the function of the object.	
17. Is the subproject has distance less than: a. 6 meters from main road surface, or b. 5 meters from community road surface or, c. 4 meters from empty land or, d. 1.5 meters from balcony or, e. 2.5 meters from tower or billboard or, f. 1 meter from rooftop or, g. 2 meters above the highest post of boat from the river surface during high tide h. Railway (to avoid at all)	If “Yes”, for any of the question, the subproject has to redirect the distribution lines plan to follow the safety distance Note: Keep all plan documented in print-out, any change has to be noted in the resource documents

6.2 Supporting Form

1	Name of the Activity (*as in the RKAP*)		
2	Type of Activity (*choose in accordance with the activity*)	❑ Extension of 20 kV or lower distribution lines ❑ Installation of distribution transformers: Cantol and/or Portal ❑ Expansion of distribution lines on existing right of way ❑Else:	
3	Project Description (*describe briefly about the project activities from preparation to operation*)		
4	Project Location (*describe the location of the project in detail, name of sub-village, village district, regency/city and province*)		
	Alternatives Considered and Hierarchy of Mitigation Measures applied (for private land and/or land belonging to IPs)		
5	Work Capacity (*describe the capacity of the work*)		
6	Protected Area (*checking whether the project location is in protected location below)*		
	a. Protected Area as defined in the Attachment III Permen LHK 38 of 2019*	❑ Protected forest ❑ Wetland ❑ Catchment area ❑ Coastal corridor ❑ River corridor ❑ Area around lake or reservoir ❑ Wildlife and Marine Sanctuary ❑ Natural and Marine Sanctuary	❑ Wilderness Forest Park ❑ Natural Tourism Forest and Marine Park ❑ Cultural Sanctuary and Indigenous People ❑ Natural Geological Sanctuary ❑ Groundwater Recharge Area ❑ Spring corridor ❑ Genetic protection area ❑ Wildlife refugee area

		❑ Mangrove Forest ❑ National Park and Marine Park	❑ Coral Reef ❑ Corridor of Protected Marine Fauna and Biotic
	b. List of protected area based on PIPPIB	(Check with the steps) 1. Go to the link hhtp://appgis.dephut.go.id/aagis/petamoratorium_rev6.html 2. Choose the box on the map based on the project location 3. Identify if the activities are included in a protected area (marked as pink and green color)	
	c. List of protected area based on the International Union for Conservation of Nature (IUCN) List		
7	Land Use – provide explanation for items 12-16 if applicable		
8	IPs Area (*checking whether the project location is in IP location or there are presence of IP groups or ethnic minorities in the community)*		

* might cross (X) more than one options

Note: In the BRWA site, there may be possible communities belonging to Indigenous groups or ethnic minorities in Bali and in East Java.

Appendix 7 Recapitulation of Screening Sheets

No.	Activity	Capacity (kV)	Line Length (km)	Village	District	Regency	Province	Implemented Year	Protected Area	Indigenous Peoples (IPs)	Key Biodiversity Area	Cultural Heritage	Private Land Use
[1]	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**	**[7]**	**[8]**	**[9]**	**[10]**	**[11]**	**[12]**	**[13]**	**[14]**
1													
2													
3													
4													
5													
..													

[1] Number

[2] The name of activity/Project as in RKAP

[3] Distribution substation voltage capacity

[4] Length of distribution line

[5] Name of the village of activity/project location

[6] Name of the district of activity/project location

[7] Name of the regency of activity/project location

[8] Name of the province of activity/project location

[9] Implemented year of the activity/project

[10] If any of PLN activity is in a protected area, write "yes"; if not in a protected area, write "no"
Location of protected area refers to regulation of Protected Area, Peraturan KLHK P38/2019 (juncto Permen LH No. 5/2012)
(reference: http://webgis.menlhk.go.id:8080/kemenhut/index.php/id/peta-interaktif)

[11] Location of IPs area refers to the List of IPs Area. If the name of village is in the list, confirm immediately whether the distribution line is crossing the IPs area

[12] If any of PLN activity is in a key biodiversity area, write "yes"; if not in a key biodiversity are, write "no"
Location of Key Biodiversity Area refers to the List of Key Biodiversity Area).

If the name of village is in the list, confirm immediately whether the distribution line is crossing a KBA
Verify the work activity (overlay) with the Biodiversity Area Map by IUCN (reference: www.ibat.org dan/atau www.ibat-alliance.org/visual-data-map)

[13] Criteria of cultural heritage refers to Indonesia Law UU No.11 of 2010

[14] Private land used for distribution poles and/or distribution substations. If any location use private land write "yes", else "no"

All private land used has to be documented using the Consent Form (Appendix 11) in hard copies, signed with
legal stamp

Appendix 8 Template for Preparing UKL-UPL[41] and SPPL

8.1 UKL-UPL Template

A. Proponent Identity

1.	Name of Proponent *)	
2.	Office Address, Zip Code, Telephone Number and Fax. e-mail.	

*) The proponent identity must be clearly written, including the institution and the person responsible for the proposed activity. If there is no name of business entity / government agency, write only the name of the proponent (for individuals)

B. Business and/or Activity Plan

1.	Name of Business and/or Activity Plan	
2.	Location of the business and/or activity plan and attach a map in accordance with cartographic rules and / or site illustrations with an adequate scale.	
3.	Scale/ Size of the business and/or activity plan	

4. Outline of the components of the business and / or activity plan

In this section proponent explains:

a. Suitability of location of activity plan with spatial planning.

This section describes the suitability/ conformity of the business and / or activity plan location with spatial planning in accordance with the provisions of the law. The suitability information of the proposed business and/or activity location with the spatial plan as mentioned above can be presented in the form of overlay map between the boundary map of the project site of proposed business and / or activity plan with the applicable and predefined Regional Spatial Plan map (the Spatial Plan draft map cannot be used).

Based on the results of the spatial analysis, the proponent further describes briefly and concludes the suitability of the project location/area with the spatial plan, whether the entire project area is in accordance with the spatial plan, or there are some that are not suitable, or entirely suitable. In the event that there are still obstacles or doubts regarding information in conformity with the Regional Spatial Plan, the proponent may request formal proof / fatwa from the agency responsible for spatial planning such as National Spatial Planning Coordinating Board or the Regional Spatial Planning Coordinating Board. Evidence supporting the suitability of spatial must be attached.

[41] Decree of Minister of Environment No. 16/2012 and of Minister of Environment and Forestry No. 26/2018 on Guideline for Preparation and Review of and Examination of Environmental Document under Implementation of Online Single Submission

If the location of the proposed business / activity is not in accordance with the spatial plan, the UKL-UPL form cannot be further processed in accordance with the provisions of Article 14 paragraph (3) of Government Regulation no. 27 of 2012.

In addition, for certain types of business plans and / or activities, the proponent shall conduct a spatial analysis of the suitability of the location of the business plan and / or activity with the Indicative Moratorium Map listed in Presidential Decree No. 10/ 2011, or the revised regulation or the issuance of the new provisions regulating this matter.

Based on the spatial analysis results, the proponent may conclude whether the location of the business and / or activity plan is located within or outside the primary natural forest and peatlands listed in the Indicative Moratorium Map. If the location of the plan / activity is in Indicative Moratorium Map, except for certain excluded activities as stated in Presidential Decree No. 10/2011, the UKL-UPL form can not be further processed. Compliance with the location of the proposed business and or activity based on the Indicative Moratorium Map stated in Presidential Decree No.10/ 2011 shall be valid for 2 (two) years since the issuance of this Presidential Instruction.

b. Description of the principle approval of the activity plan.
This section describes the existence of principal approval declared by the competent authority that the type of business of the activity may in principle be conducted. Formal evidence of approval of the principle approval shall be attached.

c. Description of the action plan components that could impact the environment.
In this section, the proponent writes the components of a business plan and / or activity believed to have an impact on the environment. The description can be presented for each stage of project implementation, ie pre-construction, construction, operation and closure / post operation stage. The project stages are adapted to the type of the business and/or activity plan.

C. Environmental impacts caused and Environmental Management Plan and Environmental Monitoring Plan.

This section basically contains one table / matrix, which summarizes:

1. The Environmental Impact column consists of four sub-columns containing information:
   a. Sources of impacts, which are filled with information on the types of impact-producing sub-activities for each activity stage (pre-construction, construction, operation and post-operation);
   b. Type of impact, which is filled with information about all the environmental impacts that may arise from activities at each stage of the activity; and
   c. Magnitude of the impact, which is filled with information on: for quantitative parameters, the magnitude of the impact should be stated quantitatively.

2. Environmental Management Plan.
   The Column of the Environmental Management Plan consists of three sub-columns containing the information:
   a. Forms of Environmental Management Plan, filled with information on the form / type of environmental management planned to manage any environmental impacts caused;
   b. Environmental Management Location, filled with information about the location where the environmental management is conducted (may be accompanied by a

narrative explaining that the location is described more clearly in the environmental management map in the UKL-UPL annex); and

c. Environmental management period, filled with information on the time / period of the planned environmental management.

3. Environmental Monitoring Plan

The Environmental Monitoring Plan column consists of three sub-columns containing the information:

a. Forms of Environmental Monitoring Plan, filled with information on the way, methods, and/or techniques for monitoring environmental quality as an indicator of the environmental management success (may include: environmental quality data collection and analyzing method, etc);

b. Environmental Monitoring Location, filled with information on the location where the environmental monitoring is conducted (may be accompanied by a narrative explaining that the location is presented more clearly in the environmental monitoring map of the UKL-UPL attachment); and

c. Environmental monitoring period, filled with information on the time / period in which the planned environmental monitoring is undertaken.

4. Environmental management and monitoring Institution

Column on Management and Environmental Monitoring Institution, which is filled with information about various institutions related to environmental management and environmental monitoring, which will:

a. Conduct environmental management and environmental monitoring;

b. Supervise the implementation of environmental management and environmental monitoring; and

c. Receives periodic reports of the results of the implementation of environmental management and monitoring commitment, in accordance with the task scope of the relevant agencies, and the prevailing laws and regulations

In this section, the proponent may include maps, sketches or drawings on an adequate scale with respect to environmental management and monitoring programs. The maps included must meet cartographic rules.

8.2 SPPL Template

We, the undersigned:
Name: ....
Position: ....
Address: ....
Phone Number. : ....

As responsible for environmental management of:
Company / Business Name: ....

Company / business address: ....
Phone number. Company: ....
Business type / nature of business:.....
Production Capacity:……

with the following environmental impacts caused:
1.
2.
3.
4.
5.
etc.

plan to carry out environmental management and monitoring through:
1.
2.
3.
4.
5.
Etc.

In principle, is willing to seriously implement all environmental management and monitoring as mentioned above,and is willing to be supervised by the authorized institution.

Date month Year
Parties stating,

Stamp and signature

(.....Name…….....)

Number of proof of receipt by environmental agency	
Date:	
Received by:	

Appendix 9 Summary of Environmental and Social Screening Procedure

Procedure	Description	Explanation
What	Screening to determine sub projects eligibility	Meeting non-Category A of AIIB ESP and Government Regulation
	Preparation of environmental and social document (e.g, UKL-UPL or SPPL)	Government Regulation
Who	PLN Wilayah (UID)	For example, UID East Java or UID Bali
Whom	Result will be discussed with PLN HQ (HSSE) before consulted with local DLH for final categorization	Provincial DLH or district DLH as the coverage of project area
Where	Project in one district or more district (inter-districts)	Authority for DLH's approval as the coverage of project area
When	As early as possible during planning phase	Except for project already implemented, the screening conducted retroactively (to support claim for disbursement)
How	1. The screening form is filled by using standard form 2. The project is screening using environmental and social criteria (reference to appendix 6): - Compliance with Spatial Plan - Not included in Negative List - No AMDAL Requirement - Natural Habitat - Indigenous Peoples (IPs) - Cultural Resources - Land Acquisition (LA) 3. If there are unfulfilled criteria, then the project plan is disregarded. 4. Result of the screening of individual sub-projects are recapitulated into table (reference to Appendix 7).	Using list, maps, or tools, among others: − Map of RTRW (Regional Spatial Plan) − List of protected and conservation areas (in coordination with BKSDA (Natural Resources Conservation Center) − PIPPIB (Indicative Moratorium Map for New Permit) issued by KLHK − Map and List protected flora and fauna (Permen LHK No. 38/2019) − List of protected animals (IUCN) − Cultural Heritage Map, and − Map of Indigenous Peoples

Appendix 10 Form on Consent of Private Land Owner(s)

PLN

Statement Letter

The person signing below,

Name : ……..

ID Number : ……..

Address : ……..

Phone Number : ……..

PLN Idpel Customer : ……..

In relation with the request for electricity distribution instalment from PLN following the PLN Distribution Network Plan Drawing attached:

Power : ……..

Location : ……..

Geo-tagging (coordinates): ……..

Like to inform that we give permission for the electricity installation to the above location from all parties that whose land and non-land assets (like plants and crops) could be affected by the development for installing the poles, transformer and right of way. The parties on the list below agree for the usage of the land and any necessary clearance needed (e.g. trimming of branches, cutting of trees).

List of Name

No	Name	Address	Signature
1			
2			
3			
4			

……, ……., ……..,202..

Witnesses	Applicant
Head of Village or …….. (other authority)	(Legal stamp) (Name and signature)
(Name and signature)	

Attachment:

Map of PLN Distribution Network Plan Drawing

For any complaints or request for information, PLN can be contacted via 123.

Appendix 11 Notes and List of Attendance of Community Consultations

Notes of Community Consultations

Date, time :

Name of Village :

Name of the District :

Name of the Regency :

Name of the Province :

Activity :

Note of the Community Consultation:

1.

2.

3.

Name of the notes taker: :		Signature:
Agreed by : Position	1.	Signature:
Position :	2.	Signature:

List of Attendance of Community Consultations

Date, time :
Name of Village :
Name of the District :
Name of the Regency :
Name of the Province :
Activity :

No	Name	Gender		Address or Mobile Phone	Signature
		Male (M)	Female (F)		
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Appendix 12 Identification of Potential Environmental and Social Impacts and Risks

No	Phase	Activities	Potential negative impacts
A	**Pre-Construction/Planning**		
1	Surveys: Several surveys are carried out prior to design of distribution system	Enumeration of trees for cutting, identification of- locations for digging of soil for pole base, stacking area for construction material, enumeration of structures and other receptors for calculation of safety distance/clearance, etc.	There is no potential negative impact
		Poles located in agricultural fields, forest areas, portions of houses/buildings falling in close proximity to poles foundations.	Potential poles locations deviated by at least 5-10 m sideways to avoid distribution line directly over the houses, or any existing asset which would negatively impact the land owner.
			Dissatisfaction in regard to land acquisition for Right of Way including poles and transformers locations
		Preparation of ROW, accounting for sensitive receptors and safety distance/clearance	Dissatisfaction in regard to land use for Right of Way including poles and transformers locations
		Consultation with the community, particularly with members of IPs/ethnic minorities	Unclear information about the project
2	Identification of trees and vegetation	Marking of trees/vegetation for cutting at the pole base and for trimming inside the right of way, access roads etc.	There is no negative potential impact
3	Unloading of material at site, storage and workshop (MDK)	Levelling of soil for creation of storage place. Transportation of equipment to sites using heavy cranes to unload/load equipment Toilet waste, scrap, unusable/non recyclable waste, oils, sewage, slurry from machines, dripping oils from trucks etc. Welding, cutting and fabrication of raw material etc.	Levelling of soil, vehicular emissions impacts air quality/noise levels in the area. Cutting of trees, soil erosion will impact terrestrial ecology of the area. Workshop wastes impacts ecological resources due to unplanned solid waste, unsafe wastewater, other liquid waste disposal flowing into water bodies, drainage etc. affecting the ground water, aquatic ecology of water bodies in the area.
B	**Construction**		
1	Digging Pits of poles, Erection of Poles/lattice structures and	The start up of the project	Unclear information about the project
			Health and social negative impacts from the construction workers to the community vise versa

No	Phase	Activities	Potential negative impacts
	concrete pouring in pole foundations	Digging of pole foundations using manual auguring tool along the roads and agricultural/barren land. Using concrete to erect the pole.	Surface soil run-off of soil not compacted at the pole base. Agricultural/barren land (small area of max. 1 sq. m.) affected. Excess concreting raw material left strewn in the area after work complete.
			Disturbance by noise, dust, traffic and vibration in surrounding communities
			Temporary land take for construction purposes, vegetation clearance, compacting, soil erosion
2	Mounting pin insulators, Stringing with jointing, sagging and tensioning of conductors	Stringing of cable onto the erected poles, accessories manually or using equipment.	Improper distance from houses, trees, and other building affected due to distribution line. Stringing the wire loosely may result in cable touching the buildings, trees and other obstructions that could cause damage and accidents during operations.
			Temporary restrictions on access to property and damage to personal properties
3	Fixing of Distribution Transformers (DTRs)/ accessories	DTRs on poles and ground are installed close to consumer end i.e. close to industrial, commercial, residential buildings as well as agricultural fields. The poles will be erected along the roads or along agricultural and/or barren lands.	Pole structures for mounting DTRs are normally not secured by protective fencing and can become a hazard if someone climbs over. Physical cultural resources (PCR) can be affected. Dripping of transformer oil may cause soil pollution Loss of agricultural land, and interference with other utilities and traffic may happen during erection process.
			Temporary disruption of business during dredging for underground lines
4	Sectionalizing & protection of line using automatic circuit reclosers, Testing and Commissioning	Connecting DTR's and newly strung distribution lines using reclosers, switches/other accessories.	Improper sag and distance from nearby structures causing breakage of lines and falling on people etc.
C	**Operation**		
1	Operation and maintenance	Waste handling, storage and disposal	Contaminated soil and water bodies. Flammable material (tree/vegetation cuttings,) stockpiling.
		The operational stage of the project	Unclear information about the project

No	Phase	Activities	Potential negative impacts
2	Operation	Natural Hazards & climate change resilience	System failure and accident, electrocution, and other hazards
3	Operation and maintenance	Commissioning, operation and maintenance of distribution line and transformers	Occupational health and safety, including public safety
			Damage to crops and trees because of cutting and trimming
			Disturbance by noise, dust, traffic and vibration in surrounding communities
D	Decommissioning		
1	Decommissioning	The decommissioning phase of the project	Unclear information about the project
			Disturbance by noise, dust, traffic and vibration in surrounding communities

Appendix 13 ESMP (Environmental and Social Management Plan)
(To be submitted to AIIB per reimbursement)

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
A	**Pre-Construction/ Planning**								
1	Surveys: Several surveys are carried out prior to design of distribution system	Enumeration of trees for cutting, identification of-locations for digging of soil for pole base, development of quarrying sites, stacking area for construction material etc.	There is no potential negative impact	Preliminary engagement with potential Project-Affected People.	Not Applicable	Not Applicable	Not Applicable	Planning stage	Included in project cost
		Poles located in agricultural fields, forest areas, portions of houses/	Potential pole locations deviated by at least 5-10 m sideways to avoid distribution line directly over the houses, or any existing asset, which would negatively impact the land owner.	Potential impact on physical resources, topography.	Not Applicable	Not Applicable	Routing which consider environmental and social aspects, optimize the use of public land with avoidance to cultivated land	Planning stage	Included in project cost
		buildings falling in pole foundations.		Possible loss of biodiversity, soil erosion, land slips/landslides in the area.					
		Preparation of ROW	Dissatisfaction in regard to land use for Right of Way including poles and transformers locations	Screening for use of private land, and ethnic groups area by PLN	in each project location, along the RoW	One time	1. Avoidance of structures along RoW 2. Avoidance of cultivated land 3. Written consent of acknowledgement of restrictions in RoW 4. Record of consultation with the affected community explaining restrictions in RoW	Early at the Planning stage	Included in project cost
				Consultation to the land owners and community by PLN (and Contractor)	in each project location along the RoW				

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
				Land use consent of land owners collected by PLN	in each project location along the RoW	As needed until all land owners consents are collected	Record of land use consent	After meetings and consultation with community	Included in project cost
			Damage to crops and trees because of cutting and trimming	Appropriate consultation to the owners and community by PLN (and Contractor)	in each project location along the RoW	1 time (can be aligned with the other consultation above)	Record of consultation with the affected community explaining about project and restrictions in RoW	Early at the Planning stage	Included in project cost
				Consent from owners for loss of crops and trees		As needed until all consents are collected	Record of loss of crops and trees consent		
		Consultation with the community	Unclear information about the project	Socialisation about the activity in planning stage	in each project location along the RoW	1 time (can be aligned with the other consultation above)	Record of consultation with the affected community explaining about project and restrictions in RoW	Planning stage	Included in project cost
				Socialisation about Grievance Redress Mehanism (GRM)					
2	Identification of trees and vegetation	Marking of trees/vegetation for cutting at the pole base and for trimming inside the right of way, access roads etc.	There is no negative potential impact		Not Applicable	Not Applicable	Not Applicable	Planning stage	Included in project cost
3	Unloading of material at site, storage and workshop	Levelling of soil for creation of storage place.	Levelling of soil, vehicular emissions impacts air quality/noise levels in the area. Cutting of trees, soil erosion will impact terrestrial ecology of the area.	Select locations for material storage yards and Workshops established away from any environmental sensitive areas. The vehicles used at the site	Workshops, stores, machine shops	Occasionally	No accident/fatality due to material unloading and storage Good housekeeping and proper HS practices (no nuisance to public safety on the road	Temporary	Included in contractor's cost

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
		Transportation of equipment to sites using cranes to unload/load equipment (Storage areas, Pole Bases)	Workshop wastes impacts ecological resources due to unplanned solid waste, unsafe wastewater, other liquid waste disposal flowing into water bodies, drainage etc. affecting the ground water, aquatic ecology of water bodies in the area.	must be compliant with pollution standards of the country. Protective equipment (PPE) for handling of material and in the workshop is required.			and aesthetically/visually free nuisance		
		Toilet waste, scrap, unusable/non recyclable waste, oils, sewage, slurry from machines, dripping oils from trucks etc.							
		Welding, cutting and fabrication of raw material etc.							
B	**Construction**								
1	Digging Pits of poles, Erection of Poles/ lattice structures and concrete pouring in pole foundations	The start up of the project	Unclear information about the project	Community meeting for socialisation about the activity in construction	In each project location along the RoW	Following the regular PLN socialization schedule	Record of consultation with the community explaining about project	Early at the Construction stage	Included in project cost
				Socialisation about Grievance Redress Mehanism (GRM) by PLN and contractor					
			Health and social negative impacts from the construction workers to the community vise versa	Respect and tolerate other people's cultures and religious alienations	In each project location along the RoW	One time billboards with information Minimal one time public awareness session and inspection	1. Billboards contained information of safety hygiene and manner developed 2. Records of public awareness session and inspection by contractor	Construction stage	Included in project cost
				Dissemination information through billboard on site					
				Public awareness on social and					

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
				public health issues identified					
				Contractor to apply ethics as required throughout the construction period					
		Digging of pole foundations using manual auguring tool along the roads and agricultural/barren land.	Surface soil run-off of soil not compacted at the pole base. Agricultural/barren land (small area of max. 1 sq. m.) affected.	Restore the excess soil through ramming and ensuring the loose soil is removed and construction material from pole base so that it does not interfere with drainage of the area.	Pole base locations	Daily Monitoring	No visual distraction of soil dumping and spill over during rain) Protected/barrier and adequate warns/lighting on safety hazards of digging holes	Permanent	Included in contractor's cost
		Using concrete to erect the pole.	Excess concreting raw material left strewn in the area after work complete.	Ensure lines do not cross the agricultural fields in manner that adversely affects the famers.					
			Disturbance by noise, dust, traffic and vibration in surrounding communities	Maintain all work equipment at optimal operating condition	As needed along the construction activities		No accident related to traffic and lifting/erecting of the poles	All the time during the construction activities	Included in the contractor cost
				Monitor noise, dust and traffic levels at sensitive receptors (residential areas, schools, hospitals)					

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
				Sensitize workers to reduce noise, dust and traffic during working hours in sensitive areas	Around site location	Daily monitoring (of traffic and public safety/pedestrian)			
				Work through community liaison officers to agree on working hours and to respond promptly to complaints using GRM					
				Inform the community about the schedule of the activities that might disturb the community	Where the activities might disturb the community	During the work was held in the area	No significant complaint/ protest on the work on progress		
			Temporary land take for construction purposes, vegetation clearance, compacting, soil erosion	Consultation to the owners by PLN and Contractor	When no public land can be used for placing the equipment along the RoW	1 time for each location	Record of consultation with the affected people	Construction	Included in the contractor cost
				Rental payment for construction equipment location			Rehabilitated grounds		
				Demarcate such areas and clear only necessary vegetation, do landscaping, rehabilitate the area with suitable tree & grass species					

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
2	Mounting pin insulators, stringing with jointing, sagging and tensioning of conductors	Stringing of cable onto the erected poles, accessories manually or using equipment.	Improper distance from houses, trees, and other building effected due to distribution line. Stringing the wire loosely may result in cable touching the buildings, trees and other obstructions that could cause damage and accidents during operations.	Distances from public receptors maintained as per the mandatory requirements of the country. Proper sag and tension maintained between conductors installed to keep it clear of the buildings, trees and other obstructions that could cause accidents/short circuits during operation	Pole line	During the work implementation	Use of traffic signals, traffic cones, flags, and safety measures and protective devices (PDE) No damage to surrounding buildings and public facilities	Temporary	Included in contractor's cost
			Temporary restrictions on access to property and damage to personal properties	Consultation to the owners and community	Where the restriction happened	One time banners During the work was held in the area	1. Development of information banner of the restriction 2. GRM in regard to restriction is zero	Construction	Included in the contractor cost
				Establish alternative access			Alternative access built		
				In kind compensation for damage of the personal properties			Records of in kind compensation		

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
3	Fixing of Distribution Transformers (DTRs)/ accessories	DTRs on poles and ground are installed close to consumer end i.e. close to industrial, commercial, residential buildings as well as agricultural fields.	Pole structures for mounting DTRs are normally not secured by protective fencing and can become a hazard if someone climbs over.	Ensure DTR is installed at safe distance from human reach, does not spill oil, and has secure connections to the 33/22/11 kV line.	Cultural resources found at poles and along Right of Way	During the work implementation	No spill of used oil at soil, roads and/or water body around the site (visual observation)	Temporary	Included in contractor's cost
		The poles will be erected along the roads or along agricultural and/or barren lands.	Physical cultural resources (PCR) can be affected. Dripping of transformer oil may cause soil pollution	Line through agricultural lands must be carefully routed to ensure no loss of land, or disruption of water utilities occur during construction.					
			Loss of agricultural land, and interference with other utilities and traffic may happen during erection process.	Care to ensure Physical Cultural Resources are not affected by the DTR placement					
			Temporary disruption of business during dredging for underground lines	Consultation to the business owners by PLN and Contractor	Where the restriction happened	One time consultation during the work was held in the area	Record consultation with the affected people	Construction	Included in contractor's cost
				Establish alternative business when needed			Alternative business made		
4	Sectionalizing & protection of line using automatic circuit reclosers, Testing and Commissioning	Connecting DTR's and newly strung distribution lines using reclosers, switches/other accessories.	Improper sag and distance from nearby structures causing breakage of lines and falling on people etc.	Use of shielded Ariel bunched conductor (ABC) to avoid short circuits and shocks to nearby residents	Pole line		No accident or damage to public properties and/or facilities during the work	Temporary	Included in contractor's cost
C	**Operation**								

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
1	Operation and maintenance	Waste handling, storage and disposal	Contaminated soil and water bodies, and poisoning	collects all end-of-life transformers and stores on a dedicated waste storage facility on sealed ground. Drain and store used transformer oil in drums, temporarily stored in a hazardous material facility with proper design and equipment. Implement good house keeping at waste storage facility	Storage/ warehouse	Monthly	no spill and/or leakage (contamination) of used oils to soil and surrounding Used transformers and other hazardous materials transported and stored at temporary hazardous waste storage	Routine	PLN operation cost
		The operational stage of the project	Unclear information about the project	Community meeting for socialisation about the project activities Socialisation about Grievance Redress Mechanism (GRM)	In each project location along the RoW	Following the regular PLN socialization schedule	Record of consultation with the community explaining about project	Operational stage	Included in project cost
2	Operation	Natural Hazards & climate change resilience	System failure and accident, electrocution, and other hazards	Prepare emergency plan for any system failure, including natural disasters and related climate change effects	Field	Occasionally	Emergency Response Plan prepared and operational (with dedicated personnel assigned, and implementation documented and reported)	Accidental	PLN operation cost

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
3	Operation and maintenance	Commissioning, operation and maintenance of distribution line and transformers	Occupational health and safety, including public safety	Provide SOPs in place, covering signage, PPE, special works (drilling, metal cutting, work at height, hot tapping, etc.)	Field	Functional distribution line and transformer	SMK3 (occupational health and safety management system) implemented, documented, and reported)	Periodic	PLN operation cost
				Provide Safe Working Conditions					
				Prepare and implement Emergency Response Plan					
			Damage to objects like crops and trees because of cutting and trimming	Socialization about safety distance to the owners and community	In each project location along the RoW	Following the regular PLN socialization schedule	Record of consultation and consent for damage to objects as crops and tree with the affected people	Routine during the Operational stage	Included in project cost
				In kind compensation for damage of the properties		Only when damage happens	Records of in kind compensation	When damage happens	
			Disturbance by noise, dust, traffic and vibration in surrounding communities	Maintain all work equipment at optimal operating condition	In each project location along the RoW	Minimal one time public awareness session and inspection	1. Records of public awareness session and inspection by contractor 2. GRM in regard to noise, dust and traffic is zero	Operational	Included in the contractor cost
				Monitor noise, dust and traffic levels at sensitive receptors (residential areas, schools, hospitals)					

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
				Sensitize workers to reduce noise, dust and traffic during working hours in sensitive areas					
				Work through community liaison officers to agree on working hours and to respond promptly to complaints using GRM					
				Inform the community about the schedule of the activities that might disturb the community					
D	Decommissioning								
1	Decommissioning	The decommissioning phase of the project	Unclear information about the project	Socialisation about the decommissioning activity	In each project location along the RoW	Following the regular PLN socialization schedule	1. Record of consultation with the community explaining about project 2. Record of GRM and solution related to the project	Decommissioning stage	Included in project cost
				Socialisation about Grievance Redress Mechanism (GRM)					
			Disturbance by noise, dust, traffic and vibration in surrounding communities	Maintain all work equipment at optimal operating condition	In each project location along the RoW	Minimal one time public awareness session and inspection	1. Records of public awareness session and inspection by contractor 2. GRM in regard to noise, dust and traffic is zero	Decomm stage	Included in the contractor cost
				Monitor noise, dust and traffic levels at sensitive receptors (residential areas, schools, hospitals)					

No	Phase	Activity	Potential negative impacts	Mitigation Measures	Monitoring			Timing	Cost Estimates
					Location	Frequency	Performance Indicators		
				Sensitize workers to reduce noise, dust and traffic during working hours in sensitive areas					
				Work through community liaison officers to agree on working hours and to respond promptly to complaints using GRM					
				Inform the community about the schedule of the closure activities that might disturb the community					

Appendix 14 Template for GRM Recording and Monitoring

(For submission to AIIB for each reimbursement request)

14.1 Form of GRM Registration and Monitoring

Name of PLN Unit :
Monitoring Period :
Name of Implementing Units :

This template is applicable for community complaints related to the project in terms of social and environmental issues.

No	Complaint Registration			Response and Follow up			Status of Complaint Handling
	When	Who	Description of the Complaint	When	Who	Handling of Complaint	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

14.2 Form of Minutes of Complaints Handling and Resolution

Berita Acara Penyelesaian Keluhan

Sehubungan dengan adanya proyek pengerjaan jaringan distribusi baru oleh PLN, muncul dampak dan keluhan di wilayah tempat tinggal kami. Maka dengan surat ini:

Nama :

No.KTP :

Alamat :

Nomor Telp :

Status Lahan : Pemilik*/Pengguna/Penyewa

Bukti Kepemilikian : SHM/Girik/Surat Penguasaan Fisik/ D11. (sebutkan)

Bentuk Keluhan *(deskripsikan keluhan berdasarkan analisis dampak: fisik, ekonomi, budaya, sosial)*	
Cara Penyelesaian Keluhan *(deskripsikan penyelesaian keluhan berupa: kegiatan pemindahan, sosialisasi, mediasi, dll.)*	

Dengan ini menyatakan bahwa:

1. Telah dilakukan proses konsultasi publik antara PLN dengan kami sebagai upaya penyelesaian keluhan secara partisiptif
2. Telah dilakukan penyelesaian oleh PLN terhadap keluhan kami
3. Telah disepakati bahwa keluhan tersebut telah diselesaikan dengan baik oleh PLN

Demikian Berita Acara Penyelesaian Keluhan ini dibuat dengan sebenar-benarnya untuk dapat digunakan sebagaimana mestinya.

Pemohon **Pihak PLN**

Materai 6.000

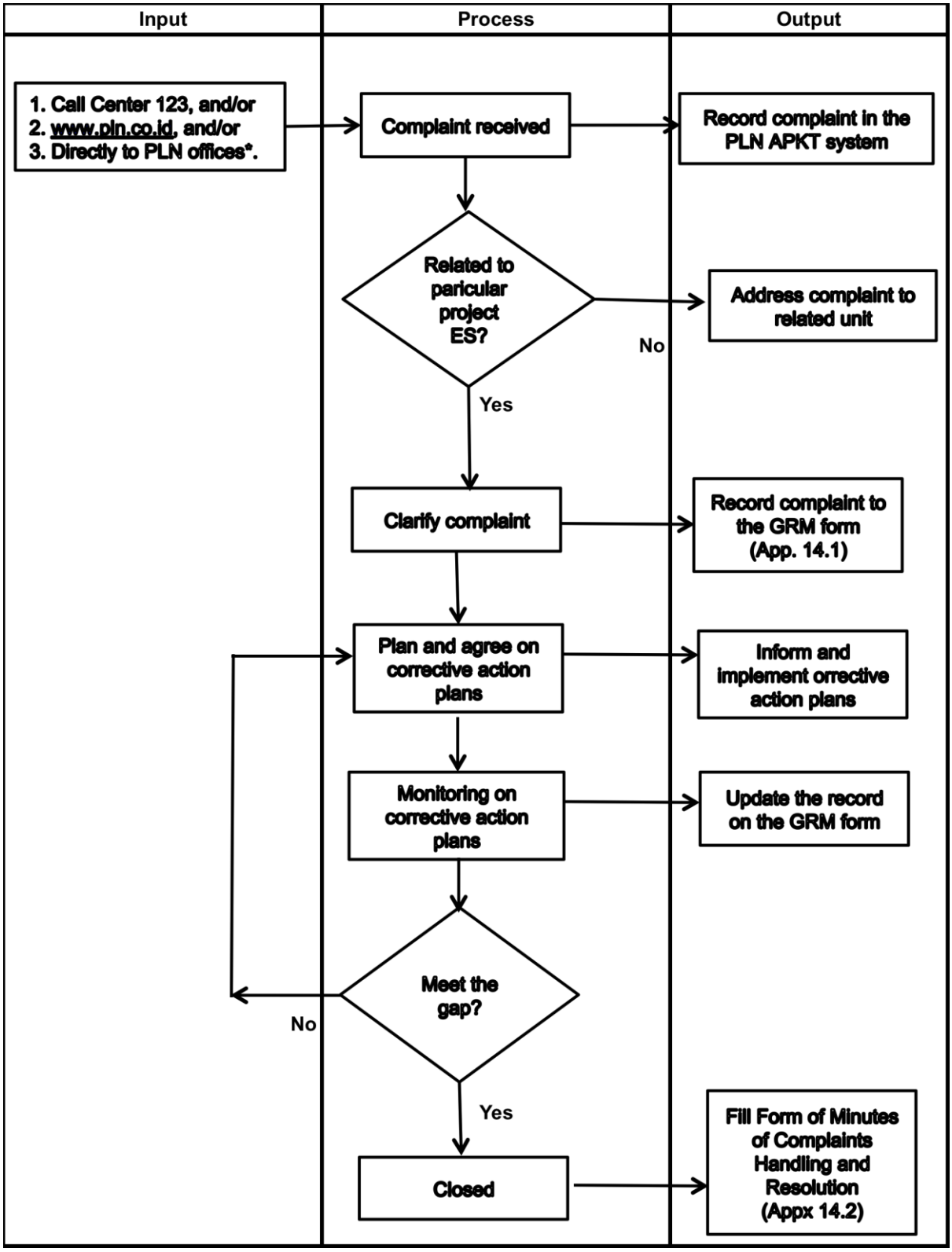
.....

.....

Saksi

.....

14.3. Flowchart of GRM (Grievance Redress Mechanism)[42]



* PLN UID Bali: Jl. Letda Tantular No.1, Dangin Puri Klod, Kec. Denpasar Tim., Kota Denpasar, Bali 80234, PLN UID Jatim: Jl. Embong Trengguli No.19-21, Embong Kaliasin, Kec. Genteng, Kota SBY, Jawa Timur 60271

[42] Prepared based on best practices in PLN

Appendix 15. Sample Contract Clauses for Environmental and Social Management and Occupational Health and Safety.

Referring to Indonesian standard bidding, Draft Contract already in Bidding Document (RKS; Work Plan and Requirement) which also stipulates special clause for environmental protection and management. One of the special clauses read:

"Penyedia Jasa berkewajiban untuk mengambil langkah-langkah yang memadai untuk melindungi lingkungan baik di dalam maupun di luar tempat kerja dan membatasi gangguan lingkungan terhadap pihak ketiga dan harta bendanya sehubungan dengan pelaksanaan Kontrak ini, sesuai dengan ketentuan peraturan perundang-undangan yang mengatur mengenai pengelolaan lingkungan hidup."

(Service provider/Contractor is required to take appropriate measures to protect environment, both within and outside of the work site and limit any environmental disturbance to third parties and their assets related to the implementation of this Contract, as required in prevailing environmental laws and regulations**)**

PT PLN (Persero) requires K2/K3 clauses in Contract of Goods and Services, as follows (main clauses):

1. Prevention of Occupational Accident
   1.1 Prevention of unsafe condition

   Partner(s) shall conduct technical control on unsafe condition at work site, among others:

   - Partner(s) shall comply with prevailing regulation of safety and occupational health in PT PLN (Persero)
   - Partner(s) shall have and apply Standard Operational Procedure (SOP) for each work
   - Partner(s) shall provide tools and PDE as standard (SNI, ANSI, CSA, etc) for workers in the implementation of work with potential hazards
   - Partner(s) shall conduct hazards identification, risk assessment and risk control at the workplace with potential hazards
   - Partner(s) shall prepare Job Safety Analysis (JSA) and Working Permit at each implementation of work with potential hazards
   - Partner(s) shall conduct medical checkup for their workers who working at site with potential hazards

   1.2 Prevention of Unsafe Action

   Partner(s) shall conduct personnel control on unsafe act at work site, among others:

   - Partner(s) shall assign and set up competent Supervisor/K3 Supervisor
   - Partner(s) shall install LOTO (lock out tag out) during implementation of work with potential hazards
   - Partner(s) shall use tools and PDE as standard (SNI, ANSI, CSA, etc) in the implementation of work with potential hazards
   - Partner(s) shall conduct supervision on the behavior of workers who harms himself or others, which may cause accident

- Partner(s) shall provide direction and safety briefing to Implementer and Supervisor before implementing the work with potential hazards

2. Certification/Education & Training

- Partner(s) shall conduct certification of competence for Supervisor, Implementer, and other technician as their job
- Partner(s) shall assign certified K3 experts
- Partner(s) shall provide education and training for Supervisor, Implementer and other technician as their job.

3. Sanctions

a. In case of accident due to negligence of partners in implementing Occupational Health and Safety, Partner is fully responsible for solving the problem related to the accident
b. In case of accident due to negligence of partners, implementer is fully responsible over the consequence of the accident
c. In case of accident that cause serious injury leading to disable or fatality:
   - the supervisor and implementer of the work will be banned from working or suspended for two months technical working at field
   - Partner will be fined for maximum 10% (ten percent) of the invoice at the current month

-

d. If the accident occurs at transition period of working contract, sanction at point c still prevails.
e. In case of accident due to negligence of partners in implementing Occupational Health and Safety, PT PLN (Persero) has right to evaluate, terminate the ongoing contract and include the partner in Black List

Appendix 16. Monitoring Templates of ESMPF Implementation, Occupational Health and Safety, and Hazardous Wastes

16.1 Monitoring Template for ESMPF Implementation

MONITORING FORM FOR ESMPF IMPLEMENTATION

Name of PLN Unit: PT PLN (PERSERO) UID …… *(fill in with name of respective UID)*

Monitoring Period: TW ……. /20…….. *(fill in with respective quarter and year)*

Implementing Unit: PT PLN (Persero) UP3 … *(fill in with name of respective UP3)*

No	Name of Activities (Project)	MONITORING ITEMS OF ESMPF IMPEMENTATION										
		Public Consultation to Affected People and Indigenous People		Application of Environmental & Social Requirement comprised in the ESMPF during Construction Activities				Written Consent on Land Use for Distribution Transformer				
								Number of Transformers Installed				
		No/ Yes	Evidence / Documentation	Type of Environmental & Social Document	Clauses on Environmental & Social Management	Implementation of Environmental & Social Management	Evident / Document	Public Land	Private land (SHM, SKT, Girik, etc)	No / Yes	Number of Agreement	Evident / Document
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[a]	[b]	[9]	[c]	[10]

Note: (a), (b) and (c) under Column (9) are only filled with data, if any

(1) Number

(2) Name of activities as described in RKAP

(3) Fill with **Ada,** if there is public consultation to affected people and indigenous people (if any) prior to construction works; Fill with **Tidak,** if there is no public consultation to affected people and indigenous people prior to construction works

(4) Type of evident/documentation of the activities in Column [3]. The evident/documentation may be in form of photographs, attendance list, and minutes of consultation.

(5) Type of environmental document required for the activities in Column [2]: Rapid E&S Assessment, UKL-UPL (including Environmental Permit) or SPPL as prevailing laws and regulations, ESMP

(6) Clauses/articles referred on the obligation of PLN and/or contractors in environmental management and monitoring as stipulated in UKL-UPL (and environmental permit) or SPPL as prevailing laws and regulations. The clauses are described in procurement document and contract (*agreement*). Fill with **Ada** if there is clause/article in the procurement document and contract. The contract shall be attached as supporting document. Fill with **Tidak** if there is no such clause/article in the procurement document and contract.

(7) During construction phase of the project, responsible PLN Unit ensures/reports on environmental management and monitoring, both ones carried by PLN and/or Contractors, which supported with evident and documentation. Fill with **Ada** if environmental management has been implemented and supported with evident and relevant documentation. Fill with **Tidak ada** if environmental management has not been implemented or has not been implemented completely and no evident or relevant documentation

(8) Fill with type of evident/documentation provided to support information in Column [7]. Evident/documentation may be in form of photographs, progress report from the contractors, inspection forms, and environmental monitoring report which attached as supporting data.

(9) Written consent on land use for new installation of distribution transformer between PLN and land owners. Fill with **Ada** if there is written consent between PLN and land owners. Fill with **Tidak** if there is no written consent between PLN and land owners.

(10) Fill with evident/documentation to support activities in Column [9]. The evident is reported as supporting data.

16.2 Monitoring Template for K3 (Occupational Health and Safety) Implementation

MONITORING FORM FOR K3/K2 (OCCUPATIONAL HEALTH AND SAFETY) IMPLEMENTATION

Name of PLN Unit: PT PLN (PERSERO) UID …… *(fill in with name of respective UID)*

Monitoring Period: TW ……../20…….. *(fill in with respective quarter and year)*

Implementing Unit: PT PLN (Persero) UP3 … *(fill in with name of respective UP3)*

No	Activities	Location (Village/Sub-District/District)	K3/K2 Implementation	Documentation
(1)	(2)	(3)	(4)	(5)

(1) Number
(2) Name of activities as described in RKAP
(3) Location of activities (village/sub-district/district)
(4) Measures and implementation of occupational health and safety (including public health and safety to public/pedestrian)
(5) Documentation as evident of occupational health and safety implementation

16.3 Monitoring Template for Hazardous Waste Management

MONITORING FORM OF HAZARDOUS WASTE MANAGEMENT

Name of PLN Unit: PT PLN (PERSERO) UID …… *(fill in with name of respective UID)*

Monitoring Period: TW ……../20…….. *(fill in with respective quarter and year)*

Implementing Unit: PT PLN (Persero) UP3 … *(fill in with name of respective UP3)*

No	Temporary Storage of Hazardous Wastes			Activities of Hazardous Wastes Management	Completion Target (Time)	Status/ Progress	Follow up Actions
	Implementing Unit	Location	Types of Hazardous Waste				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

(1) Number
(2) Name of implementing unit (UP3) for temporary storage (TPS) of hazardous wastes
(3) Location of temporary storage (TPS) of hazardous wastes
(4) Types of hazardous waste managed (used oil, used containment, contaminated rags, used filter, etc)
(5) Hazardous management related to project covers rehabilitation of storage by installing oil trap around the material containing oils (such as old transformer), segregation of hazardous wastes and non-toxic waste, or other relevant activities
(6) Specified time as target for completion of the activities
(7) Status and progress of the hazardous waste management
(8) Follow up and/or remedial action required, if any