

Environmental Assessment and Review Framework

Project Number: 56189-001
October 2022

Philippines: Tiger Digital Infrastructure for Rural Connectivity Project

Prepared by Tiger as a requirement of the Asian Development Bank.

CURRENCY EQUIVALENTS
(as of 19 October 2022)

Currency unit	–	Philippine Peso (PHP)
PHP1.00	=	\$ 0.017
\$1.00	=	PHP 58.84

NOTES

- (i) The fiscal year (FY) of Tiger Infrastructure Philippines Inc. ends on 31 December.
- (ii) In this report, "\$" refers to United States dollars.

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Environmental Assessment and Review Framework

Tiger Infrastructure Philippines Inc. Telecommunications Towers Project
October 2022



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Acronyms and abbreviations

ADB	Asian Development Bank
ADB SPS	ADB Safeguard Policy Statement
ARC	Agrarian Reform Community
BOSH	Basic Occupational Safety and Health
CADC	Certificate of Ancestral Domain Claim
CADT	Certificate of Ancestral Domain Title
CALC	Certificate of Ancestral Land Claim
CALT	Certificate of Ancestral Land Title
CAP	Corrective Action Plan
CNC	Certificate of Non-Coverage
COSH	Construction Occupational Safety and Health
CW	Critical Watershed
DA	Department of Agriculture
DAO	Department Administrative Order
DENR	Department of Environment and Natural Resources
EARF	Environmental Assessment and Review Framework
ECC	Environmental Compliance Certificate
ECA	Environmentally Critical Area
ECP	Environmentally Critical Project
EHS	Environment, Health, and Safety
EMB	Environmental Management Bureau
E-NIPAS	Expanded National Integrated Protected Areas System
EMP	Environment Management Plan
E&S	Environmental and Social
GBT	Ground Based Tower
GRM	Grievance Redress Mechanism
H&S	Health and Safety
IEE	Initial Environmental Examination
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
JMC	Joint Memorandum Circular
KBA	Key Biodiversity Area
MC	Memorandum Circular

MH	Managing Head
MLA	Master Lease Agreement
MNO	Mobile Network Operator
NIPAS	National Integrated Protected Areas System
NPCC	National Pollution Control Commission
PCO	Pollution Control Officer
PCSD	Palawan Council for Sustainable Development
PCSO	Pollution Control and Safety Officer
PD	Presidential Decree
PEISS	Philippine Environmental Impact Statement System
PMU	Project Management Unit
PW	Protected Watershed
RA	Republic Act
SAQ	Site Acquisition
TIPI	Tiger Infrastructure Philippines, Inc.
WB	World Bank

1. Introduction

1.1 The Project

Tiger Infrastructure Philippines, Inc. (TIPI or the Proponent) aims to develop, construct, operate, and maintain [INFORMATION REDACTED]¹ steel telecommunications towers within the Visayas and Mindanao in the Philippines (the Project). TIPI has signed a Built-to-Suit and Co-location Master Lease Agreement (MLA) with a Mobile Network Operator (MNO) and is seeking MLAs with other mobile network operators in the country to co-locate their towers. Currently, TIPI has confirmed [INFORMATION REDACTED] sites while the location of the rest of the towers is still to be determined.

TIPI is seeking project financing from the Asian Development Bank (ADB or the Lender). ADB has classified the Project in compliance with ADB's Safeguard Policy Statement (2009) (SPS) as category B for environment. The towers will be in different sites and majority are still to be identified after ADB Board approval. Hence, this Environmental Review and Assessment Framework (EARF) is developed for the Project to clarify the safeguards principles and requirements for the screening, categorization, environmental and social assessment, and development and implementation of management plans for the different project stages of the sites that will be identified after ADB Board approval.

The [INFORMATION REDACTED] steel communications towers planned for this Project are comparable with a generic ground-based tower (GBT). The key specifications of a GBT are provided in **Table 1**.

Table 1. Ground-Based Tower Key Specifications

Parameter	Ground Based Tower (GBT)
Description	<ul style="list-style-type: none">• Conventional• Designed with strong frame which can hold the wind pressure and geographic condition at the area where the tower will be built• Built on the ground
Height	42 m
Basic Design and Wind Speed	290 kph, 320 kph

Each of the tower site is comprised primarily of the antenna, tower structure, equipment, generator, and fencing. The key components and specifications are provided in **Table 2**.

Table 2. Project Components and Key Specifications

Components	Key Specifications
Antenna	Typically, with diameter of 1.2 m and installed on the head frame of the tower
Tower	The tower structure has a height of approximately 42 m and base of 4.5 m by 4.5 m

¹ This information has been removed as it falls within the exceptions to disclosure as specified in paragraph 17(v) of ADB's Access to Information Policy.

Components	Key Specifications
	The tower also has a ladder for installation, inspection, and maintenance of the antenna.
Equipment	The equipment on telecommunication towers includes transceivers and other supporting technology. These are installed in the equipment pad. The installation and operation of the equipment is under the MNO's scope of work.
Test pit	Test pit is installed near the equipment pad
kWh meter	Measures the amount of electricity consumed by the operation of the telecommunication tower
Generator	The generator set is set on the generator set pad
Fence	The fence includes concrete fence, cyclone wire fence, perimeter light, service entrance and a gateway.

The operation of telecommunication is simple. Electromagnetic radio waves, called a radio frequency, that is emitted by cellphones when used are received by the antenna attached to the top of the telecommunication tower. The telecommunication tower can be unmanned. There is no constant human, mechanical or chemical activity required in the tower site. The only activities required for the operation of the telecommunication tower involves securing the tower components; maintenance and inspection; and activation of generator sets during brownouts.

A laydown area near the construction site will be established as a temporary area designated for storage of equipment, materials, stockpiles, vehicles and other construction materials.

1.2 Scope of the EARF

The EARF covers:

- Legal and Policy Framework and Institutional Capacity which lists down the relevant policies and how it relates to the Project
- Anticipated Environmental Impacts which summarizes the key impacts based on the initial environmental evaluation
- Environmental Assessment of the Project which outlines the methodologies
- Consultation, Information Disclosure and Grievance Mechanism which summarizes the stakeholder engagements
- Requirements for Environmental Management Plans which provide guidance on the EMP
- Institutional Arrangements and Responsibilities which discusses the roles needed for environmental management and social safeguards
- Monitoring and reporting which outline the environmental monitoring plan

2. Legal and Policy Framework

2.1 Philippine Environmental Requirements

As described in detail below, the project must comply with the Philippine environmental laws and regulations. The applicable Philippine environmental and social laws and policies are presented in **Table 3**.

Table 3. Applicable Philippine Environmental Laws and Policies

Philippine Laws and Policies	Description	Requirements
PD 705 Revised Forestry Code of the Philippines (1975)	Lays down the basic principles of forest management and conservation, makes provision for the administration of forestry, the survey and classification of lands for purposes of forestry, and the use of forest resources.	Permit for the cutting, removal, and relocation of naturally growing trees Permit to temporarily occupy, possess, and manage in consideration of specified return, any public forest lands for a specific use of purpose
PD 1586 Philippine Environmental Impact Statement (PEIS) System (1978)	These laws provide guidelines on the Philippine Environmental Impact Statement System (PEISS). The Revised Implementing Rules and Regulations of PD 1586 PD 1586 defines process and documents required to secure the ECC which is, in turn, a prerequisite for construction of facilities in the Philippines	Category D projects are not required to secure an ECC but may opt to secure a Certificate of Non-Coverage (CNC). Note: CNC is a document issued by DENR stating that the proposed project is not covered by the PEISS, and the proponent is not required to secure an ECC prior to commencement of operation.
DAO 30-2003 DENR Environmental Management Bureau (EMB) Memorandum Circular (MC) 2014-005	EMB MC defines the project category and its corresponding report requirements to secure the ECC	The issuance of this certificate shall not exempt the grantee from compliance with applicable environmental laws, rules and regulations including permitting requirements of other government agencies.
DAO 2017-015 Guidelines on Public Participation under the Philippine Environmental Impact Statement (PEIS) System	DAO 2017-015 defines levels of consultations and local social approvals relevant to the ECC	
RA 6969 Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990	An act to control toxic substances and hazardous and nuclear wastes, providing penalties for violations thereof, and for other purposes	Secure Hazardous Waste Generator's ID (for sites with back-up generators). Utilization of DENR-EMB accredited hauler and treater for Hazardous Waste Disposal.
DAO 1992-29	The Implementing Rules and Regulations of Republic Act 6969	
DAO-2014-02 Revised PCO Accreditation Guidelines	Accreditation of PCOs based on the categorization of establishments	Designation of Managing Head (MH)
EMB MC-2019-004 Advanced Training Modules for Pollution Control Officers	Sets additional trainings required for renewal of PCO accreditation	Designation and accreditation of Pollution Control Officer (PCO)
RA 7586 National Integrated Protected Areas System	An act providing for the establishment and management of national integrated protected areas system, defining its scope and coverage, and for other purposes.	Compliance with guidelines in the construction, operation, and maintenance of public utilities within the protected area (e.g., endorsement from the Protected Area Management Board or PAMB).

Philippine Laws and Policies	Description	Requirements
DAO 2019-05	The Implementing Rules and Regulations of Republic Act 7586	
RA 11038 Expanded National Integrated Network of Protected Areas System Act of 2018	An act providing a more extensive protection and effective preservation of the remaining protected areas in the country	
RA 8749 Clean Air Act and its Implementing Rules and Regulations	Defines the requirements for generators/back up power permitting post ECC and the thresholds for emissions monitoring	Compliance with ambient air quality standards.
DAO 2000-81	The Implementing Rules and Regulations of Republic Act 8749	
RA 9003 Ecological Solid Waste Management Act of 2000	Defines appropriate solid waste management practices for local projects.	Compliance with proper labelling and segregation of solid waste.
DAO 2001-34	The Implementing Rules and Regulations of Republic Act 9003	
RA 9147 Wildlife Resources Conservation and Protection Act (2001)	An Act providing for the conservation and protection of wildlife resources and their habitats, appropriating funds therefor and for other purposes.	Compliance with Section 27 (Illegal Acts) of the act.
Joint DENR-DA-PCSD Administrative Order No. 01	The Implementing Rules and Regulations of Republic Act 9147	
RA 9275 The Philippine Clean Water Act of 2004	Defines the requirements for water use and discharge permitting and thresholds for effluent water quality	Compliance with ambient water quality standards.
DAO 2005-10	The Implementing Rules and Regulations of Republic Act 9275	
NPCC MC 1980-02 Ambient Noise Standards	Defines the requirements and restrictions on noise level and control.	Compliance with ambient noise levels.
RA 11058 Occupational Safety and Health Standards	An act providing rules that each Filipino worker is protected against injury, sickness or death through safe and healthful working conditions and that employers must promote strict but dynamic, inclusive, and gender-sensitive measures in the formulation and implementation of policies and programs related to occupational safety and health.	Designation of Safety Officer Compliance with Section 4 (Duties of Employers, Workers and Other Persons) of the act.

2.2 ADB Environmental Requirements

The ADB's environmental requirements are stipulated in its Safeguard Policy Statement (2009) and various policies, notes and instructions with specific requirements described and integrated in this EARF. Definitions for environmental categories are:

- **Category A:** A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an

area larger than the sites or facilities subject to physical works. An environmental impact assessment (EIA), including an environmental management plan (EMP), is required;

- **Category B:** A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination (IEE), including an EMP, is required; and,
- **Category C:** A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. An EIA or IEE is not required, although environmental implications need to be reviewed.

The project is classified under ADB guidelines as Category B where it is seen to have some adverse environmental impacts considered to be site-specific and mostly occurring during the construction phase, but of lesser degree and/or significance, few, if any of them are irreversible if properly managed. An IEE is viewed as the final environmental assessment report since the project is classified as a Category B project.

The project does not involve any of the prohibited activities listed on ADB’s Prohibited Investment Activities List (PIAL). TIPI will not use prohibited materials (e.g., asbestos) during the project construction and operation.

2.3 Other Applicable International Environmental Standards

Other international environmental standards referred to in this report are presented in Table 4.

Table 4. Other Applicable international standards

International Standards	Description
World Bank Group Environmental (WBG), General Health and Safety (EHS) Guidelines (April 30, 2007)	The EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP) and are referred to in the World Bank’s Environmental and Social Framework and in IFC’s Performance Standards.
World Bank Group (WBG) General EHS Guidelines (2007), WBG EHS Guidelines for Telecommunications (2007)	The EHS Guidelines for Telecommunications are applicable to telecommunications infrastructure such as fixed line and wireless voice and data transmission infrastructure, including long distance terrestrial and submarine cables (e.g., fiber optic cables), as well as radio and television broadcasting, and associated telecommunications and broadcasting installations and equipment.
International Finance Corporate (IFC) Performance Standard (PS) (2012) specifically: <ul style="list-style-type: none"> ▪ PS1: Assessment and Management of Environmental and Social Risks and Impacts; ▪ PS2: Labour and Working Conditions; ▪ PS3: Resource Efficiency and Pollution Prevention; and, ▪ PS4: Community Health, Safety and Security. 	The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs.

3. Anticipated Environmental Impacts

3.1 Environmental Impacts

The detailed impact assessment will be done during the preparation of the environmental examination report based on the proposed sites' actual conditions. Below are the general descriptions of expected impacts from telecommunications towers' development, construction, operation, and maintenance phases.

- **Air quality and noise.** Earthworks and operation of mobile equipment (e.g., truck hauler, excavator, etc.) during construction will likely result in dust emission and noise generation exceeding applicable standards on ambient air quality and ambient noise levels. During power outages, operation of back-up generator will generate noise and emission.
- **Aquatic habitat.** Contamination of adjacent surface water, which could lead to deterioration of aquatic habitat, due to earthworks, accidental spills and leaks, improper disposal of wastes particularly during construction is likely to occur.
- **Biodiversity.** Direct loss of trees from tree cutting activities for some sites and introduction of invasive alien species (IAS) during construction. Possible decline in fruit-eating seed dispersers (e.g., birds and bats) insect pollinators (e.g., bees), and potential communication towers and avian collision particularly during operation phase.
- **Electromagnetic Field Radiation.** Potential cancer risk in humans as based on several studies, microwave radiation can induce various apoptotic (programmed cell death) pathways causing premature cell death.
- **Hazardous materials and wastes.** Minimal amounts of hazardous materials are used in telecommunication project. The project may generate electronic wastes, used oils, oil filters and used fan belts from backup generator set, particularly during operation and maintenance phase.
- **Health and safety.** Occupational health and safety risks include working at heights, working with energized equipment and live power lines, elevated and overhead work, excavation and heavy equipment, exposure to EMF and fiber optic, and exposure to biological hazards. Community health and safety risks relate to construction traffic, exposure to noise and dust, unauthorized access to the construction area or facility, structural failure, and issue with project workers.
- **Solid Wastes.** Generation of construction solid waste (e.g., concrete rubble, plastic, metal, glass, asphalt surfaces, wood, and general refuse) and domestic wastes (e.g., used packaging, plastic bags, bottles and food containers) mainly during construction and operation, especially on sites where security personnel will be posted.
- **Soil and groundwater contamination.** Contamination of soil and groundwater from accidental spillage of hydrocarbon from equipment operation during construction is likely to occur.
- **Surface water quality.** Surface water quality for some sites that are adjacent to waterways will be impacted from earthworks during construction. Additionally, contaminated water from mobile equipment (e.g., vehicle washing, cement mixer washing, etc.) may find its way to adjacent waterways.
- **Visual Impact.** The impact of tower and antennae on aesthetic value of the area, which is dependent on the community perception.

3.2 Applicable Environmental Guidelines

Applicable environmental guidelines related to the anticipated impacts are provided below.

- **Ambient air quality and noise.** Republic Act 8749 (Philippine Clean Air Act of 1999), DAO 2000-81 (IRR of RA 8749), National Ambient Air Quality Guideline Values, and the NPCC MC 1980-02 Ambient Noise Standards.
- **Water quality.** Republic Act 9275 (The Philippine Clean Water Act of 2004), DAO 2005-10 (IRR of RA 9275), and DAO 2016-08 (Water Quality Guidelines and General Effluent. Standards of 2016)
- **Hazardous waste.** RA 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990) and DAO 1992-29 (IRR of RA 6969)
- **Solid waste.** Republic Act 9003 (Ecological Solid Waste Management Act of 2000) and DAO 2001-34 (IRR of RA 9003)
- **Tree cutting.** PD 705 (Revised Forestry Code of the Philippines of 1975)

4. Environmental Assessment for the Project

4.1 Environmental Assessment Procedure

4.1.1 Site Screening

TIPI applies a flexible process in the selection of sites where they can choose properties up to 300-meter radius from within the search ring required by the telecommunication companies. TIPI will as much as possible avoid sites that are located in critical habitats as defined in ADB SPS. Otherwise, TIPI will be required to conduct additional environmental assessment and approval and comply with additional ADB safeguards requirements.²

To avoid these areas, all tower location will be screened using the environmental and social site screening and selection procedure that will be developed by TIPI. This procedure will include desktop level constraints analysis using ArcGIS to conduct location screening according to significant landforms located adjacent or within landforms or protected areas declared by the DENR through its online portal (www.geoportal.gov.ph). The proximity of each of the tower sites to the Agrarian Reform Communities (ARC), Certificate of Ancestral Domain Claim (CADC)/ Certificate of Ancestral Land Claim (CALC) and Certificate of Ancestral Domain Title (CADT)/ Certificate of Ancestral Land Title (CALT), Key Biodiversity Area (KBA), National Integrated Protected Areas System (NIPAS)/ Expanded National Integrated Protected Areas System (E-NIPAS), Critical Watersheds (CW), and Protected Watersheds (PW) will be calculated and analyzed. This will be done to consider the potential impacts of the Project to these significant landforms and/or protected areas.

4.1.2 Approach and Methodology

An Initial Environmental Examination (IEE) will be conducted to validate the present environmental conditions of the tower locations and predict the potential impacts of the proposed project to the existing environmental elements. The mitigation and abatement measures to address impacts during pre-construction, construction and operational phases shall also be identified. More specifically, the IEE intends to:

1. Examine and describe the existing status of the various ecological, physical and human-related components surrounding the proposed project area;
2. Predict the potential significant impacts of the project on the surrounding environment during the pre-construction, construction, construction, operations and maintenance stages and recommend appropriate mitigation and abatement measures; and,
3. Identify residual impacts of the project and recommend appropriate short-term and long-term management plans.

Scoping of issues to be addressed in the IEE will be conducted early in the assessment process to collect the appropriate baseline information so that the IEE study can be focused on the relevant issues (see **Appendix A** for the rapid environmental assessment checklist and **Appendix B** for the climate screening checklist). The objectives of the scoping will include the following:

1. To provide an early link among TIPI, prospective lessor, communities, and the IEE preparer;
2. To ensure that the IEE will address relevant issues and concerns;
3. To ensure complete coverage of potential environmental and social issues that is required under the ADB Safeguards Policy Statement.

² The Policy Principle 8 specifies: Do not implement project activities in areas of critical habitats, unless (i) there are no measurable adverse impacts on the critical habitat that could impair its ability to function, (ii) there is no reduction in the population of any recognized endangered or critically endangered species, and (iii) any lesser impacts are mitigated. If a project is located within a legally protected area, implement additional programs to promote and enhance the conservation aims of the protected area. In an area of natural habitats, there must be no significant conversion or degradation, unless (i) alternatives are not available, (ii) the overall benefits from the project substantially outweigh the environmental costs, and (iii) any conversion or degradation is appropriately mitigated. Use a precautionary approach to the use, development, and management of renewable natural resources.

The IEE will be guided by the template as shown in **Appendix C**.

TIPI will submit and endorse to ADB the draft IEE for the clustered sites for review, clearance and posting on ADB website before implementation of the Project. It is the responsibility of TIPI to ensure that the Project complies with the environment-related legal framework, whether at the national or local level.

4.2 EMB Environmental Assessment Procedures

Environmental assessment is regulated by the PD 1586 Philippine Environmental Impact Statement (PEIS) System (1978). Following the Revised Guidelines for Coverage Screening of the EMB (EMB MC 2014-005), telecommunication projects are under category D regardless of size. However, some of the towers for this Project fall under Category B by virtue of being located in Environmentally Critical Area (ECA).

For telecommunication projects under Category B (Non-Environmentally Critical Project in an Environmentally Critical Area) or D (Projects deemed unlikely to cause significant adverse impact on the environment), if no additional structures are constructed aside from those listed on footnote 1 of Annex A of EMB MC 2014-005, a certificate of non-coverage (CNC) may be secured. TIPI may simply secure a certificate of non-coverage from EMB because IEE is not required for telecommunication projects of any category. But as part of due diligence, an IEE following the IEE checklist and SPS guidelines is recommended. The IEE checklist commonly includes the following details:

- Project Description detailing:
 - key components or list of facilities
 - utilities consumption
 - activities to undertake and manpower needed for both construction, and day-to-day operation
- Environmental impacts and management plan which includes:
 - Potential impacts to land, water, air/noise and people
 - Decommissioning policies (including project life or service)
 - Institutional management plan for environmental management implementation

5. Consultation, Information Disclosure, and Grievance Redress Mechanism

5.1 Public Consultation

ADB requires public consultation in the environmental assessment process. For category B projects, the borrower must consult with groups affected by the proposed project. The consultation should be carried out as early as possible in the project cycle so that views of affected groups are considered in the design of the project and its environment mitigation measures. Such consultation will also take place during project implementation to identify and help address environmental issues that arise. Considering the importance of public consultation, TIPI shall develop a documented Social Engagement Plan (SEP) that will provide framework and guidelines for local SAQ's to implement. Implementation of the SEP should be well-documented and should be monitored by the SAQ coordinator. Additionally, TIPI should also conduct community engagement and consultation with the stakeholders that may be affected during construction and temporary passage restriction.

5.2 Information Disclosure

Environmental assessment reports for ADB projects are accessible to interested parties and the general public. As such, TIPI will endorse the following documents to ADB for disclosure on its website:

- Final IEE
- Environmental Management Plan

ADB's access to information policy (AIP) which reflects ADB's ongoing commitment to transparency, accountability, and participation by stakeholders may be accessed in <https://www.adb.org/documents/access-information-policy>.

5.3 Grievance Redress Mechanism

A Grievance is defined as a complaint or concern that is raised by either individuals or groups from affected communities of the Project (IFC, 2009). Grievances can either be perceived or observed wrongs or other causes of complaint/protest by either the company (TIPI) or their contractors during the Project life. The purpose of the Grievance Redress Mechanism is to ensure that the affected communities concerns and expectations on the Project execution are acknowledged, addressed, and if possible, resolved. The current Grievance and Redress Mechanism (GRM) is to solve problems within SAQ member's or SAQ coordinator's jurisdiction. The problems that cannot be solved by the SAQ's are to be resolved by the legal officer.

A formal Grievance Redress Mechanism will be established by TIPI to receive and facilitate resolution of the affected individual/groups complaints or concerns regarding the project's environmental performance. A hotline will be established for concerns outside of the local SAQ's jurisdiction, a record keeping of the complaints and resolution, and a regular reporting and analysis performed regularly. This process will be proportional to the nature and scale of the project impacts, will be culturally appropriate, fair, accessible, transparent, and well-documented. A flowchart of this process will also be created for clarity and transparency. An internal Community Relations Officer is also recommended to be engaged that will have the documentation of the GRM process, including reporting and monitoring, for both internal and external stakeholders as part of their responsibilities.

Once the GRM has been established, a sample grievance registration form shall be published in the local language and/or the IP dialect to TIPI's website, and a comment/complaints box at the participating Barangay and Municipalities Halls, with the process of addressing the concern/complaint well documented. The process of addressing the grievances shall be done well-documented, proportional to the grievance, culturally sensitive and appropriate, reasonable, accessible, transparent, and resolved in a timely manner. All contractors will be required to implement the procedure and report grievances to TIPI.

Every grievance shall be considered private and will be registered. Grievances can be submitted either in writing or verbally. A Grievance Database will be created to record and track all submitted grievances, as well as the

process for addressing and resolving the registered grievances. Responsible parties will also be identified and registered. A dispute resolution mechanism and a monitoring and evaluation framework for continuous community feedback and improvement of the GRM. TIPI shall respond to the grievance and verify that the situation has been satisfactorily resolved with all individuals/groups involved prior to closing out the grievance in the Grievance Database.

6. Institutional Arrangements and Responsibilities

6.1 Environmental Assessment, Review and Clearance

TIPI. TIPI will have overall responsibility for project coordination, implementation, and liaison with ADB and relevant government agencies.

TIPI will ensure that the following tasks for the Project will be undertaken by a qualified and experienced expert: (a) conduct the environmental and social site screening and selection, (b) conduct initial environmental examination and corresponding report according to ADB SPS requirements, (c) comply with the Government environmental requirements and obtain corresponding clearance such as ECC or CNC.

TIPI will submit the IEEs to ADB for review, clearance and disclosure.

TIPI will also ensure that the Project complies with the applicable Government's environmental requirements and ADB SPS.

TIPI will ensure the proper implementation and overall monitoring and reporting of the environmental safeguards and practices as identified in the IEE.

EPC Contractors. EPC Contractors will be responsible for the day-to-day implementation of the environmental safeguards and practices as identified in the IEE; and for reporting the any environmental compliance and non-compliance, particularly during the construction phase.

ADB. The ADB will have the following responsibilities to ensure compliance with the ADB SPS: (a) review and clear IEE prepared based on ADB SPS and (b) publicly disclose final IEEs, draft and final EIAs on ADB's website.

6.2 Capacity Development

A designated E&S Staff is recommended for TIPI. The designated E&S Staff needs to undergo the necessary training such as Basic Occupational Safety and Health (BOSH) and Construction Occupational Safety and Health (COSH).

6.3 Staffing Requirement and Budget

TIPI staff will use qualified and experienced expert to prepare the IEE. The costs for the preparation of the IEE should be included in the Project's budget. During construction phase, the cost of implanting the mitigation measures will be incorporated into the contractor's costs since the environmental management plan will be part of the tender documents.

There is currently no staff designated for HSE. An additional staff with required HSE skills is recommended. Otherwise, training for a designated E&S Staff will be required. This includes the basic HSE training and capacity building on environmental safeguards.

7. Monitoring and Reporting

TIPI should develop and implement an E&S monitoring program for construction and operational phases, taking into consideration the commitments in the IEE.

The designated E&S Staff is responsible for ensuring that the monitoring is conducted according to the monitoring plan. E&S Staff is also responsible in reporting to ADB the compliance and non-compliance in relation to the implementation of IEE and management measures.

An environmental management plan (EMP) will be part of the overall project monitoring and supervision and will be implemented by EPC contractor on a day-to-day activity with oversight from TIPI. Monitoring will relate to compliance with EMP measures, state and health of adjacent environmental resources (e.g., river), and the effectiveness of mitigating measures and complaints received. A monthly progress reporting will include a summary of the environmental monitoring report submitted to TIPI by EPC contractor on a monthly basis and to ADB semi-annually. **Table 5** provides the key tasks for environmental monitoring that will be incorporated into the EMP.

Table 5. Key tasks for environmental monitoring

Environmental Monitoring Task	Implementation Responsibility	Implementation Schedule
Design Phase		
Consultation about the project with Local Government Units (LGUs), determination of permit requirements and monitoring of permitting (as required)	TIPI	Prior to construction
Disclosure of IEE	TIPI, ADB	
Construction Phase		
Training and briefing of contractor, including IEE and EMP requirements	TIPI, EPC contractor	Continuous throughout construction period
Monitor the performance of EHS trainings, briefings, awareness, toolbox meetings, and refresher course of EPC contractor's staff (including local hires) by TIPI	TIPI, EPC contractor, all workers	Continuous throughout construction period
Monthly monitoring and quarterly reporting of EPC contractor's compliance with ESMP and all statutory environmental requirements	TIPI, EPC contractor	Continuous throughout construction period
Monthly monitoring and quarterly reporting of complaints and responses or environmental mitigation measures.	TIPI, EPC contractor	Continuous throughout construction period
Monitor adjustments to the ESP for unexpected impacts and the thorough implementation of the detailed ESP.	TIPI, EPC contractor	Continuous throughout construction period
Operation and maintenance phase		

Environmental Monitoring Task	Implementation Responsibility	Implementation Schedule
Observations during routine maintenance inspections of facilities. Inspections will include monitoring implementation of operational mitigation measures versus environmental criteria specified in EMP for operational impacts	TIPI	As per agreed inspection schedules
Post construction monitoring of sites where complaints about air/noise/water quality from works in construction phase	TIPI	Monthly up to 3 months after completion of construction

Appendix A. Rapid Environmental Assessment Form

Project Title: _____ **Date:** _____
Site ID: _____ **Time started:** _____
Location: _____ **Time ended:** _____

Boundary Points of the Site	Longitude	Latitude

Checklist:

Descriptors	Remarks
Land use classification of the proposed site: <input type="checkbox"/> Residential <input type="checkbox"/> Agricultural/Prime Agricultural <input type="checkbox"/> Industrial <input type="checkbox"/> Recreational <input type="checkbox"/> Commercial <input type="checkbox"/> Protected Areas/ KBAs / CARP <input type="checkbox"/> CADC/CADT	
Previous land use of the proposed site	
Current land use within 1km radius (as per the ZO): <input type="checkbox"/> Residential <input type="checkbox"/> Agricultural/Prime Agricultural <input type="checkbox"/> Industrial <input type="checkbox"/> Recreational <input type="checkbox"/> Commercial <input type="checkbox"/> Protected Areas/ KBAs/ CARP <input type="checkbox"/> CADC/CADT	
Existing soil type in the area: <input type="checkbox"/> sandy <input type="checkbox"/> clay <input type="checkbox"/> sandy loam <input type="checkbox"/> Others, specify _____	
Proximity and allocation of buffer zone	
Data from the MPDO and DRRMO:	

Descriptors	Remarks
<input type="checkbox"/> Comprehensive Land Use Plan (CLUP) (e-copy, shapefiles) <input type="checkbox"/> Zoning Maps <input type="checkbox"/> Socio-economic Physical and Political Profile <input type="checkbox"/> Hazard Maps <input type="checkbox"/> Spot Maps per Barangay	
Presence of visually significant landforms/landscape/structures/protected areas	
Existing Biodiversity (Fauna) <input type="checkbox"/> Mammals <input type="checkbox"/> Reptiles <input type="checkbox"/> Birds <input type="checkbox"/> Amphibians	
Existing flora/vegetation in the area (forestland, marshland, grassland, etc.)	
Nearest watershed (coordinates, photos)	
Presence of Water Body	

PHOTO DOCUMENTATION



Appendix B. Checklist for Preliminary Climate Change Screening

Screening Questions		Score	Remarks ³
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?		
	Would the project design (e.g., the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc.)?		
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g., prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters) likely affect the selection of project inputs over the life of project outputs (e.g., construction material)?		
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g., annual power production) of project output(s) (e.g., hydro-power generation facilities) throughout their		

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high-risk project.

Result of Initial Screening (Low, Medium, High): _____

Other Comments:

Prepared by: _____

³ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Appendix C. IEE Template

This outline is part of the **Safeguard Requirements 1**. An environmental assessment report is required for all environment category A and B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks. A typical EIA report contains the following major elements, and an IEE may have a narrower scope depending on the nature of the project. The substantive aspects of this outline will guide the preparation of environmental impact assessment reports, although not necessarily in the order shown.

A. Executive Summary

This section describes concisely the critical facts, significant findings, and recommended actions.

B. Policy, Legal, and Administrative Framework

This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

C. Description of the Project

This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

E. Anticipated Environmental Impacts and Mitigation Measures

This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

F. Analysis of Alternatives

This section examines alternatives to the proposed project site, technology, design, and operation - including the no project alternative - in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. It also states the basis for selecting the particular project design proposed and, justifies recommended emission levels and approaches to pollution prevention and abatement.

G. Information Disclosure, Consultation, and Participation

This section:

- (i) describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;
- (ii) summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor,

and Indigenous Peoples; and

(iii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

H. Grievance Redress Mechanism

This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

I. Environmental Management Plan

This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the project's impacts and risks):

(i) Mitigation:

- (a) identifies and summarizes anticipated significant adverse environmental impacts and risks;
- (b) describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and
- (c) provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.

(ii) Monitoring:

- (a) describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and
- (b) describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.

(iii) Implementation arrangements:

- (a) specifies the implementation schedule showing phasing and coordination with overall project implementation;
- (b) describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and
- (c) estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.

(iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

J. Conclusion and Recommendation

This section provides the conclusions drawn from the assessment and provides recommendations.