



Environmental and Social Management System

April 2026



#	Version	Revision Date	Implementation Date	Signing Authority
1	Version 1		April 30, 2026	Mr. Sonam Tobjey - CEO

Foreword

Bhutan Power Corporation Limited (BPC) bears a national responsibility that extends beyond delivering reliable electricity. As the country's sole power transmission and distribution utility, our operations directly influence communities, the environment and Bhutan's sustainable development. We are therefore committed to conducting our activities in a manner that safeguards natural resources, protects people and supports the nation's vision of Gross National Happiness.

BPC has established and maintained an Integrated Management System (IMS) certified to ISO 9001 (Quality Management), ISO 14001 (Environmental Management) and ISO 45001 (Occupational Health and Safety). This system has strengthened our internal processes, enhanced service quality, reduced environmental impacts and fostered a strong safety culture across the organization. Building on this foundation, we are now implementing an Environmental and Social Management System (ESMS) to address broader environmental and social risks and impacts associated with our projects and operations.

The ESMS provides a structured framework to identify, assess, mitigate, monitor and report environmental and social risks throughout the full lifecycle of our activities. It aligns national regulatory requirements with good international practices and development partner standards, enabling BPC to operate responsibly while meeting global expectations.

Together, the IMS and ESMS form a comprehensive management approach that integrates quality, environmental protection, occupational health and safety, and social responsibility into our decision-making and daily operations.

Successful implementation of the ESMS requires commitment at all levels. Every employee, manager, contractor and partner has a role in upholding these standards. BPC will provide the necessary leadership, resources, training and oversight to ensure effective implementation and continuous improvement.

We also recognize the importance of transparency and meaningful stakeholder engagement. By maintaining open communication with government agencies, customers, communities, development partners and other stakeholders, we aim to build trust and ensure that our projects deliver lasting benefits while minimizing adverse impacts.

As Bhutan moves toward a sustainable and climate-resilient future, BPC remains dedicated to delivering reliable energy services in a responsible and accountable manner. ESMS strengthens our ability to manage risks, improve performance, attract investment and contribute positively to the nation's social, economic and environmental well-being.

I call upon all employees and partners to support the implementation of this system with professionalism and commitment.



Sonam Tobjey
Chief Executive Officer

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Glossary of Terms

ADSS	All-Dielectric Self-Supporting
BICMA	Bhutan InfoComm and Media Authority
BPC	Bhutan Power Corporation Limited
CD	Construction Division
CEO	Chief Executive Officer
CF	Community Forest
CMP	Construction/Contractor Management Plan
CSD	Corporate Strategy Division
DCSD	Distribution and Customer Services Division
DGPC	Druk Green Power Corporation Limited
DHI	Druk Holding and Investments Limited
DoECC	Department of Environment and Climate Change
DP	Development Partner
DPR	Detailed Project Report
E&S	Environmental and Social
EAP	Emergency Action Plan
EC	Environmental Clearance
EG&SS	Environment, GIS and Survey Section
EHS	Environmental, Health, and Safety
EHS&S	Environmental, Health, Safety, and Social
EPRP	Emergency Preparedness and Response Plan
ERT	Emergency Response Team
ESDD	Environmental and Social Due Diligence



ESHS	Environmental, Social, and Health & Safety
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
FPIC	Free, Prior, and Informed Consent
GHG	Greenhouse Gas
GIIP	Good International Industry Practice
GIS	Geographic Information System
GNH	Gross National Happiness
GRM	Grievance Redress Mechanism
HIRA	Hazard Identification and Risk Assessment
HoD	Head of Departments
HS	Head of Services
HSE	Health, Safety, and Environment
ICP	Informed Consultation and Participation
IEE	Initial Environmental Examination
IESG	Integrated Environmental, Social, and Governance
IFC	International Finance Corporation
IMS	Integrated Management System
ISO	International Organization for Standardization
KPI	Key Performance Indicator
MR	Management Representative
MRM	Management Review Meeting
NTGMP	National Transmission Grid Master Plan

O&M	Operation & Maintenance
OCP	Operational Control Procedure
OHS	Occupational Health and Safety
OPGW	Optical Ground Wire
OSPH	Occupational Safety and Health Policy
PA	Protected Area
PD	Procurement Division
PDCA	Plan-Do-Check-Act
PET	Polyethylene Terephthalate
PM	Project Manager
PPE	Personal Protective Equipment
PS	Performance Standard
QAS	Quality Assurance & Safety
RECOP	Regulation on the Environmental Clearance of Projects
RFP	Request for Proposal
S&QD	Safety and Quality Division
SOP	Standards and Standard Operating Procedure
SRR	Service Rules and Regulations
SSD	Support Services Division
TAS	Team Appraisal Targets
ToR	Terms of Reference
VPMS	Vendor Performance Management System

Executive Summary

With a view to provide a framework to identify, assess, prevent or mitigate, evaluate, and communicate environmental and social (E&S) risks and impacts that may result from management and operational activities by Bhutan Power Corporation Limited (BPC), the Environmental and Social Management System (ESMS) has been prepared with support from International Finance Corporation (IFC). It was developed primarily based on a desk-based literature review and focus group discussions with officials of BPC. Representative members from each department, division, or sections of BPC were the key officials involved in providing constructive suggestions during the ESMS development stage.

The ESMS:

- Provides BPC with high-level guidance to manage E&S risk and impact by providing BPC's corporate policy on E&S risk and impact management, risk and impact identification, management protocols, institutional capacity and competency, stakeholder engagement and grievance redress mechanisms.
- Clarifies the roles and management for E&S management.
- Helps BPC to improve its overall performance and enhance its reputation to attract investors through integrating environmental and social considerations into its operations.
- Facilitates better engagement with stakeholders, including employees, affected communities, and other interested parties, fostering trust and building strong relationships.
- Assist to comply with the requirements of Development Partners.
- Facilitates environment-friendly infrastructure with BPC's operations.

BPC staff will use the processes and procedures in this ESMS to identify, screen, assess, and mitigate E&S risks and impact of the project or activity for which they are responsible for, allocate necessary budgetary and human resources, monitor, and document performance, and engage with stakeholders including addressing their grievances.

1. Introduction

1.1 Business Overview

Bhutan Power Corporation Limited (Hereinafter referred as “BPC” or “Company”) was formed on 1st July 2022 and subsequently incorporated under the Companies Act of the Kingdom of Bhutan on 8th August 2002. It is the sole power transmission and distribution Company in the Country, wholly owned by the Royal Government of Bhutan (RGoB) under the umbrella ownership of the Druk Holding and Investments Limited (DHI). The broad mandates of BPC are to transmit, distribute and supply electricity within the country and wheel electricity for export.

BPC operates and maintains Optical Ground Wire (OPGW) networks on transmission lines and All-Dielectric Self-Supporting (ADSS) cables on the distribution lines covering 201 Gewogs as per the license issued by Bhutan InfoComm and Media Authority (BICMA) on 1st July, 2007. . Additionally, BPC was granted the license to operate as the Bhutan Power System Operator on 1st July 2014 until its full independence on 1st July 2022.

In line with the requirements of Integrated Environmental, Social, and Governance (IESG) Assessment and Improvement Plan, recommended by IFC, BPC, has established this Environmental and Social Management System (ESMS) to be implemented at corporate level to bolster efficacy, transparency, and sustainability. The ESMS will ensure that the E&S risks and impacts are managed in accordance with good international industry practice (GIIP) and are aligned with the requirements of development partners (DPs).

The ESMS formulation process adopted a participatory, consultative, and transparent approach. It was developed primarily based on a desk-based literature review and discussions with officials of BPC. It further embodies a series of supporting Management Plans, ISO Standards and Standard Operating Procedures (SOPs). These documents will be implemented as part of overall Environmental and Social (E&S) management at BPC and will be periodically updated as and when necessary to ensure the management system remains responsive to varying environmental, human health and safety management requirements.

The ESMS aims to provide BPC employees with high-level guidance to manage E&S risks and impact by providing BPC’s corporate policy on E&S risk and impact management, risk and impact identification, management protocols, organizational capacity and

competency, and stakeholder engagement and grievance redress mechanisms. BPC employees will use the processes and procedures in this ESMS to identify, screen, assess, and mitigate E&S risk and impact of the project or activity for which they are responsible, allocate necessary budgetary and human resources, monitor, and document performance, and engage with stakeholders including their grievances.

Where projects or activities are funded partially or fully by International Financial Institutions (IFIs), their E&S policies will also be applied so the activities comply with both the ESMS and the E&S policies of the IFIs. Additional E&S measures may be provided in the project as deemed necessary. For all projects and activities that apply this ESMS, the project specific E&S assessment will need to be conducted based on the guidance provided in this ESMS and national legislative provisions in order to address the specific E&S risk and impact of individual project activities.

1.2 Applicability of Environment and Social Management System (ESMS) and Its Implementation

This ESMS will apply over the entire company operations, project life cycle and associated activities, which is generally defined as three sequential phases:

- A. Construction and development of project
- B. Project operations and maintenance
- C. Decommissioning, site restoration and closure

The scope is extended beyond construction and operation to include Asset Retirement and Decommissioning. This phase covers the dismantling of infrastructure, removal of electrical equipment, handling of hazardous and electronic waste, and the ecological restoration of the site to its original or an agreed-upon state.

This ESMS applies to all BPC offices. Its development was based on detailed risk and process mapping from each department, ensuring operational realities are reflected in line with IFC's standard. Implementation of this system will be driven by the ESMS or E&S Committee as detailed in **Section 6** of this manual.

1.3 Overview of ESMS

The ESMS follows the Plan-Do-Check-Act (PDCA) method, for overall Environmental, Health, Safety and social (EHS&S) management.

A management system is a set of processes and practices to consistently implement a company’s policies to meet the business objectives. The goal is to make sure that appropriate policies and procedures are in place and that the responsible team consistently follows them. The management system shall help to assess and control the E&S risks associated with the operations. There shall be an ongoing process of reviewing, correcting and improving the system. The PDCA is described below:

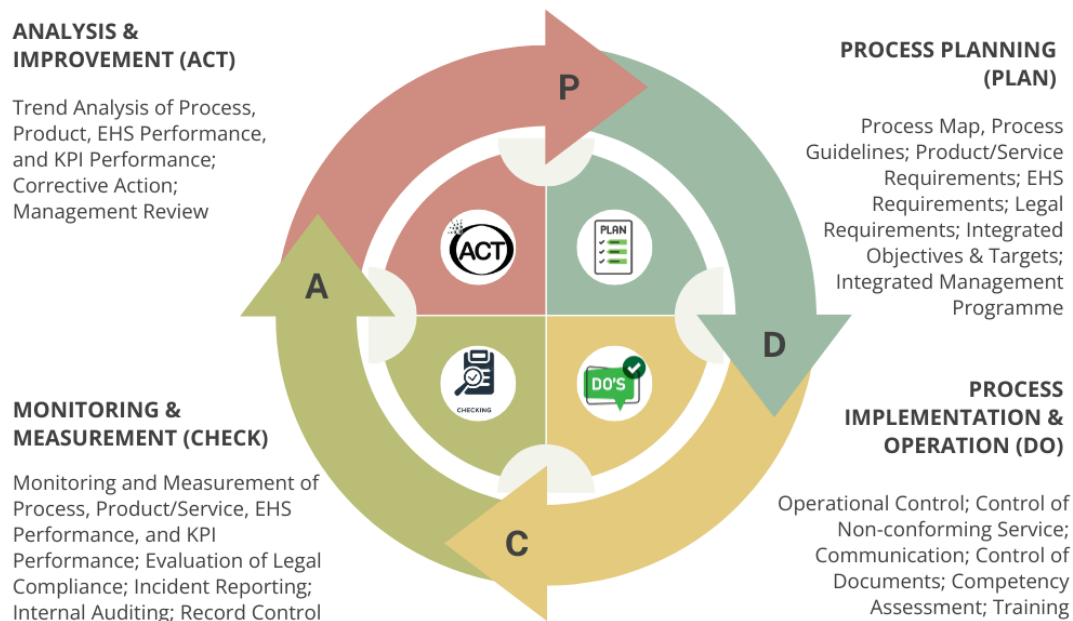


Figure 1. Overview of ESMS

1.4 Structure and Content of the ESMS

BPC’s ESMS, along with its Procedures and Records, has been designed within an auditable framework to facilitate the effective management of EHS&S risks associated with BPC’s current and planned operations. The documentation system ensures that the ESMS aligns with specified requirements, complies with legal obligations, and effectively manages all EHS&S-related aspects.

In adherence to International Finance Corporation (IFC) Performance Standard (PS 1) on “Assessment and Management of Environmental and Social Risks and Impacts,” the ESMS Plan also incorporates relevant elements of the following standards:

- IFC Performance Standards (PSs);
- ISO 14001 Environmental Management System Standard;

- ISO 45001 Occupational Health and Safety (OHS) Management System Standard; and
- ISO 9001 Quality Management System Standard.

Table 1. ESMS Structure and Content

ESMS Section/Sub-Sections	Applicable IFC PS 1 Requirements	Corresponding ISO 14001:2015 requirements	Corresponding ISO 45001:2018 requirements	Corresponding ISO 9001:2015 requirements
1.0 Introduction				
1.1 Business Overview	--	4.1	4.1	4.1, 4.2
1.2 Applicability of ESMS & it's Implementation	Requirements, item 5, p. 7	4.3, 4.4	4.3	4.4
1.3 Overview of ESMS	Requirements, item 5, p. 7	4.3, 4.4	4.3, 4.4	4.3, 4.4
1.4 Structure & Content of the ESMS	Requirements, item 5, p. 7	4.3, 4.4	4.3	4.3, 4.4
1.5 ESMS Documentation	Requirements, item 5, p. 7	4.4	4.4	4.4
2.0 Applicable Legal & Institutional Frameworks				
2.1 National E&S Regulations	Requirements, item 6, p. 7	5.2	5.2	5.2
2.2 IFC documents	Requirements, item 6, p. 7	5.2	5.2	5.2
3.0 Corporate Policies				
3.1 Environment policy	Requirements, item 6, p. 7	5.2	--	--
3.2 Gender Equality Policy	Requirements, item 6, p. 7	--	5.2	5.2
3.3 Occupation Health and Safety Policy	Requirements, item 6, p. 7	--	5.2	--
3.3 BPC Customer Credit policy	Requirements, item 6, p. 7	--	--	5.2
3.4 BPC housing Allotment policy	Requirements, item 6, p. 7	--	--	5.2

3.5 Stakeholder Engagement Policy	Requirements, item 6, Page. 7	5.2	5.2, 10.3	5.2
4.0 Identification of Risks and Impacts				
4.1 Project Risks & Impacts Identification	Requirements, item 7-12, pp. 7-9	6.1.2, 6.1.3	6.1.2.1, 6.1.2.2	6.1
4.2 Potential E&S Risks & Impacts	Requirements, item 7-12, pp. 7-9	6.1.2, 6.1.3	6.1.2.1, 6.1.2.2	--
5.0 Management Program				
5.1 ESHS Framework	Requirements, item 13-16, pp. 9-10	6.2	6.2	6.2
5.2 Project Inception & Preliminary Risk Screening	Requirements, item 13-16, pp. 9-10	6.2.2	6.1.2.3, 6.2.2	6.1.2
5.3 Project Phases	Requirements, item 13-16, pp. 9-10	6.2	6.2	6.2
5.4 ESMP	Requirements, item 13-16, pp. 9-10	10.3	10.3	10.3
6.0 Organizational Capacity and Competency				
6.1 Structure & Responsibility	Requirements, item 17-19, pp. 10-11	5.3	5.3	5.3
6.2 Training & Capacity Building	Requirements, item 17-19, pp. 10-11	7.2, 7.3	7.2, 7.3	7.1.6, 7.2, 7.3
7.0 Emergency Preparedness and Response	Requirements, items 20-21. Page. 11	8.2	8.2	--
8.0 Monitoring and Review				
8.1 ESMS Records	Requirements, item 22-24, pp. 11-12	9.1.1	9.1.1	9.1.1

8.2 ESMS Monitoring: KPIs, Objectives and Targets	Requirements, item 22-24, pp. 11-12	9.1.1, 9.1.2	9.1.1, 9.1.2	9.1.1
8.3 E&S Reporting and Communication	Requirements, item 22-24, pp. 11-12	9.1.1, 9.2.2, 10.2, 7.4.2, 7.4.3	9.1.1, 9.2.2, 10.2, 7.4.2, 7.4.3	9.1.1, 10.2
8.4 Management Review	Requirements, item 22-24, pp. 11-12	9.3	9.3	9.3
8.5 Document and Record Control	Requirements, item 22-24, pp. 11-12	7.5.3	7.5.3	7.5.2, 7.5.3
9.0 Stakeholder Engagement				
9.1 Stakeholder Engagement Plan	Requirements, item 26-28, p. 13	7.4	7.4	7.4
9.2 Disclosure of Information	Requirements, items 29, Page. 13	7.4.1, 7.4.2, 7.4.3	7.4.1, 7.4.2, 7.4.3	7.4
9.3 Informed Consultation & Participation	Requirements, items 30, Page. 13	7.4	7.4	7.4
9.4 Indigenous Peoples	Requirements, items 32, Page. 14	7.4.3	7.4.3	7.4
9.5 Private Sector Responsibilities under Government-Led	Requirements, items 33, Page. 14	6.2.1, 6.2.2, 7.4.3	6.2.1, 6.2.2, 7.4.3	6.2.2, 7.4
10.0 External Communication and Grievance Mechanisms				
10.1 External Communications	Requirements, item 34, p. 15	7.4	7.4	7.4
10.2 Grievance Mechanism	Requirements, item 35, p. 15	6.2	6.2	6.2.1, 8.2.1
11.0 Ongoing Reporting to Affected Communities	Requirements, item 36, p. 15	7.4	7.4.3	6.2.1, 7.4

1.5 ESMS Documentation

1.5.1 ESMS Hierarchy

The overall hierarchy of documents that comprise the ESMS is depicted in Figure 2.

At the top of the hierarchy of the ESMS, **the ESMS Plan** forms the foundation. It is aligned with the organization's mission, vision, and strategic objectives and outlines the processes, principles, and standards (such as IFC PSSs) for managing environmental and social impacts.

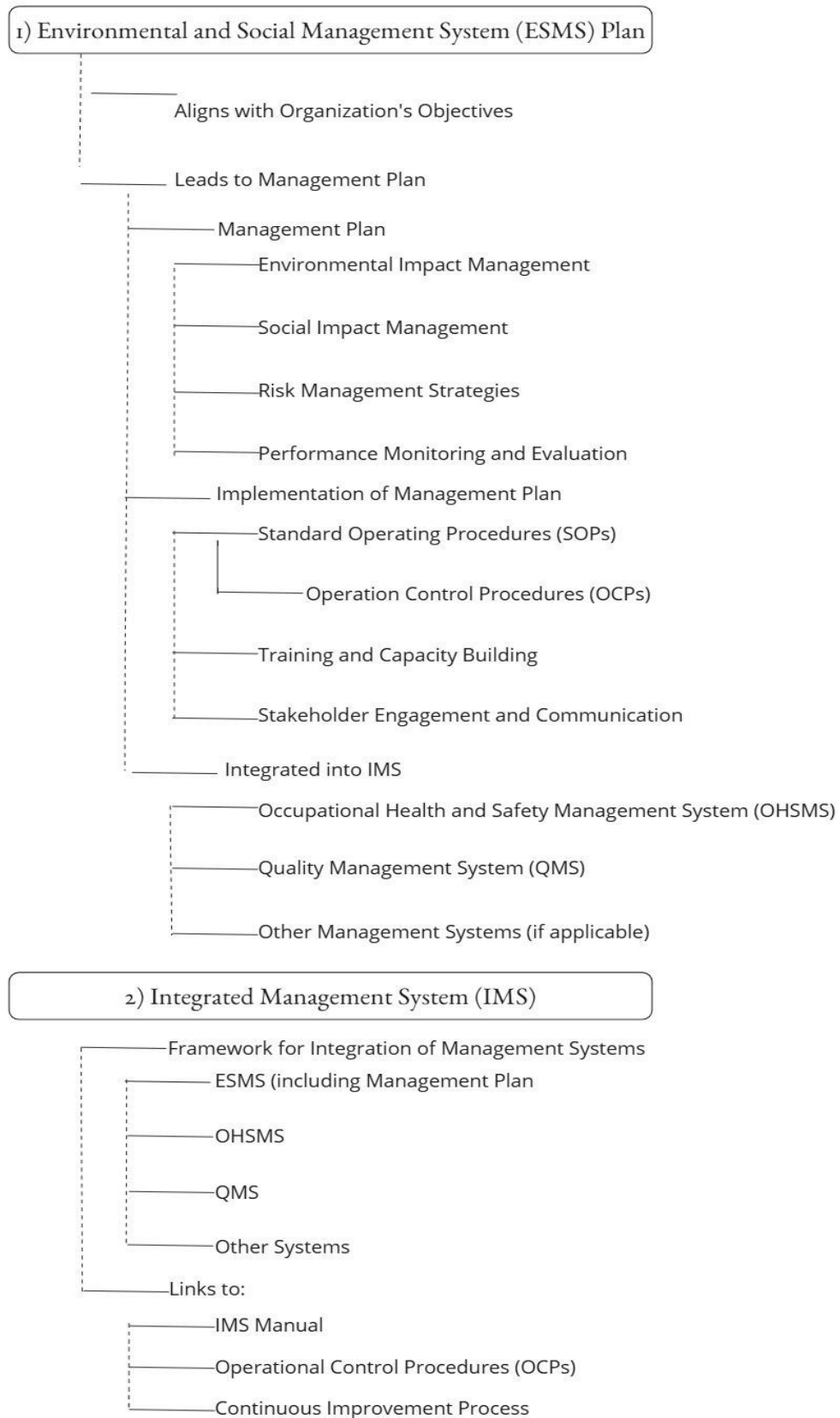


Figure 2. ESMS Hierarchy

The ESMS Plan will be supported by a suite of Management Plans, which address specific environmental and social risks, impacts, and mitigation measures across different project phases. Management Plan content will depend in significant part on the design assumptions and details contained in and the results of the Updated Environmental and Social Impact Assessment (ESIA) Report and/or other modes of project information. A general list of the Management Plans likely to be required over the phases of the Projects and their general applicability over the life of the projects is presented in Table 3. The general scope and purpose of each Management Plan are briefly summarized as follows:

Table 2. List of Management Plans

I.	Management Plan 1: Emergency Preparedness and Response Plan (EPRP)
This plan will be designed to manage emergencies such as natural disasters, hazardous material spill, and workplace accidents involving construction operations, and/or project’s physical structures or operational practices. The EPRP will address the minimum safety requirements following the Good International Industry Practices (GIIPs).	
II.	Management Plan 2: Construction/Contractor Management Plan
This plan will be developed by contractors, providing a framework for organizing and managing the construction phase of the Project, from initial earthworks through the construction and commissioning of the project, material storage areas, labour camp, waste management facilities, and other infrastructure.	
III.	Waste Management Plan
This plan will address the handling, storage, transportation, and disposal of waste generated during project activities. It will contain measures to reduce waste generation, ensure proper segregation and disposal, and minimize environmental impacts.	
IV.	Stakeholder Engagement Plan
This plan describes the methods BPC will use for engaging stakeholders, both internal and external, and ensures that relevant E&S information is disclosed and disseminated through appropriate outreach and communication procedures.	
V.	Environmental and Social Management Plan
This plan will be designed as a comprehensive framework for managing the environmental and social risks and impacts associated with the project. It shall outline mitigation measures, monitoring protocols, and management strategies to ensure compliance with environmental and social standards and regulatory requirements. The ESMP shall cover all project phases, from planning and construction to operation and decommissioning, addressing issues such as air and water quality, land use, community health, and cultural heritage.	

VI. Biodiversity Management Plan

This plan will focus on conserving and protecting biodiversity within and around the project area. It may also require identifying biodiversity risks, implementing mitigation measures, and ensuring sustainable management of natural resources.

















Table 3. General Applicability of Management Plans over Project Life Cycle

#	Management Plan	Construction	Operation	Decommissioning
I	Emergency Preparedness and Response Plan			
II	Construction Management Plan			
III	Waste Management Plan			
IV	Stakeholder Engagement Plan			
V	E&S Management Plan			
VI	Biodiversity Management Plan			






The development and finalization of all Management Plans are largely contingent upon the details outlined in the project's Detailed Project Report (DPR)/ESIA Reports, as well as the availability of adequate staffing and resources. In specific cases, preliminary versions of selected Management Plans and/or SOPs may be implemented in advance, as directed by the Head, to address immediate project requirements.



The ESMS Plan, along with the various Management Plans, will be supported by a comprehensive set of Standard Operating Procedures (SOPs) and Operational Control Procedures (OCPs). SOPs are designed to provide clear guidance to personnel, including employees and, where applicable, contractors, for the execution of specific field or office activities aligned with the higher-level plans. Similarly, OCPs outline specific control measures and protocols to manage critical environmental and social impacts effectively. Both SOPs and OCPs may support one or multiple Management Plans and apply across different phases of the project. A detailed list of the SOPs and OCPs supporting this ESMS Plan is provided in Table below.

Table 4. List of SOPs and OCPs

Document No.	SOP/OCP Title
ISO/IMS/BPC/PR/NCP/2023  Procedure for EHS Nonconformity Corre	Procedure for EHS Nonconformity, Corrective and Preventive Action
ISO/IMS/BPC/PR/PPC/2023  Procedure for Participation and Con	Procedure for Participation and Consultation
ISO/IMS/BPC/PR/COM/2023  Procedure for Communication.pdf	Procedure for Communication
ISO/IMS/BPC/PR/CTA/2023  Procedure for Competence, Training	Procedure for Competence, Trainings and Awareness
ISO/IMS/BPC/PR/COD/2023  Procedure for Control of Document.	Procedure for Control of Document
ISO/IMS/BPC/PR/COR/2023  Procedure for Control of Records.pc	Procedure for Control of Records
ISO/IMS/BPC/PR/CPA/2023  Procedure for Corrective and Prever	Procedure for Corrective and Preventive Action
ISO/IMS/BPC/PR/EPR/2023  Procedure for Emergency Preparedr	Procedure for Emergency Preparedness and Response
ISO/IMS/BPC/PR/EAI/2023  Procedure for Environmental Aspect	Procedure for Environmental Aspect Impact
ISO/IMS/BPC/PR/HPC/2023  Procedure for Handling customer cc	Procedure for Handling Interested Parties' Complaints
ISO/IMS/BPC/PR/HIRA/2023  Procedure for HIRA.pdf	Procedure for Hazard Identification and Risk Assessment
ISO/IMS/BPC/PR/INI/2023  Procedure for Incident Investigation.	Procedure for Incident Investigation
ISO/IMS/BPC/PR/IA/2023  Procedure for Internal Audit.pdf	Procedure for Internal Audit
ISO/IMS/BPC/PR/LRC/2023  Procedure for Legal & Requirements & Cc	Procedure for Legal Requirements and Compliance
ISO/IMS/BPC/PR/NCP/2023  Procedure for Non-conforming proc	Procedure for Non-Conforming Product
ISO/IMS/BPC/PR/O&T/2023  Procedure for Operational Control P	Procedure for Objectives and Targets



 Procedure for Operational Control P ISO/IMS/BPC/PR/OCP/2023	Procedure for Operational Control Procedure
 Procedure for Performance Monitor ISO/IMS/BPC/PR/MMP/2023	Procedure for Monitoring and Measurement of IMS Performance
--	Environmental Clearance Application Checklist  EC & FC Checklist.xlsx
--	Forestry Clearance Application Checklist  EC & FC Checklist.xlsx
--	Reconnaissance Survey for Transmission Line SOP  Reconnaissance Survey SOP.docx
--	SOP for Underground Cable Jointing and Termination Works
--	SOP for Payment of Voltage Hazard Allowance (VHA)

Additional SOPs and OCPs required for the long-term implementation of the ESMS Plan and Management Plans may also be developed and issued at any time in accordance with the document no. ISO/IMS/BPC/PR/COD/2023  and ISO/IMS/BPC/PR/COR/2023 . For a visual mapping of when to apply specific SOPs and OCPs listed in Table 4 during the project lifecycle, the process map below shows the temporal application of these documents across a project's life.

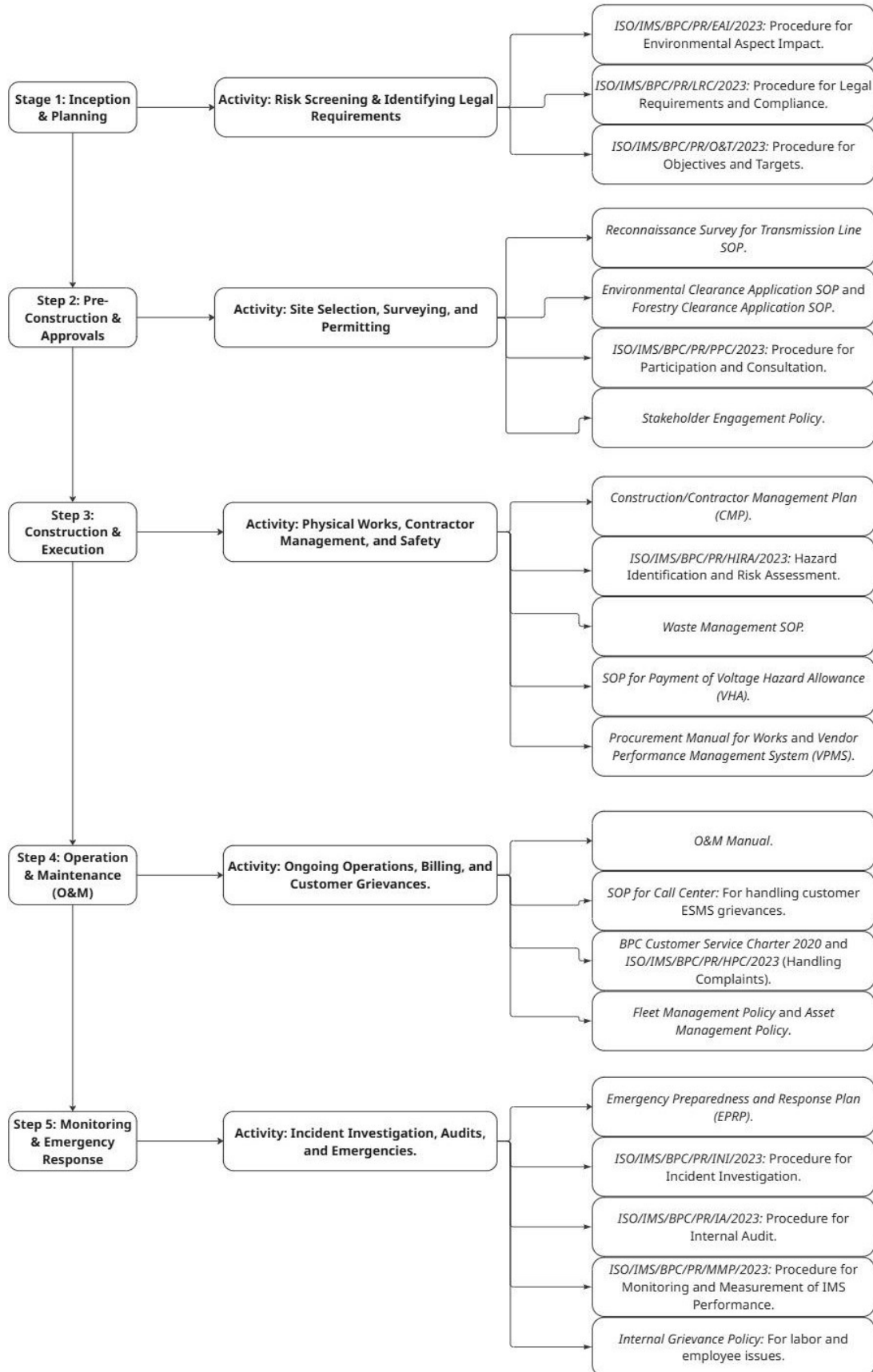



Figure 3. Process Map





1.5.2 Associated Documents

The procedures and tools for effectively implementing the ESMS across an asset lifecycle is summarized below:

Table 5. Associated documents of ESMS

PDCA Stages	ESMS Components/Activities	Description	Implementation Responsibility	Associated Documents
Planning	1. Leadership and accountability through policy	The policy developed as part of this ESMS shall be communicated to all levels of hierarchy to showcase BPC’s commitment towards environmental and social management by establishing, documenting, implementing, maintaining and improving the ESMS.	CEO, EGSS Manager, Corporate Strategy Division, Environment, GIS, and Survey Section, Risk Division	<ul style="list-style-type: none"> • Environment Policy • Stakeholder Engagement Policy  • Existing Government Policies and Acts
	2. Objectives, targets and plans	Define objectives, targets, criteria and actions for the management of potential impacts	CEO, EGSS Manager, Corporate Strategy Division, Environment, GIS, and Survey Section, Risk Division, Chief Manager/Sr. Divisional Managers/ Divisional Managers/ Project Managers (PM)	<ul style="list-style-type: none"> • E&S Goals, KPI & Objectives



	3. Compliance to applicable reference framework	Identify and provide access to legal requirements and other obligations	HR Head, Legal Head, EGSS Manager, EGSS employees, Risk Division	<ul style="list-style-type: none"> Climate Risk Assessment Framework  Applicable Legal & Institutional Framework
	4. Aspect identification, impact assessment and risk assessment	Identifying associated impacts & risks associated throughout the Project life	EGSS Manager, EGSS employees, Risk Division	<ul style="list-style-type: none"> E&S Risk and Impact Identification Climate Risk Assessment Framework  Hazard Identification and Risk Assessment
Implementation	5. Roles and responsibility	Establish roles and responsibilities for implementation of ESMS & providing sufficient management sponsorship of human resources	EGSS Manager, Corporate Strategy Division, Environment, GIS, and Survey Section, Risk Division, Chief Manager/Sr. Divisional Managers/ Divisional Managers/ Project Managers (PM)	<ul style="list-style-type: none"> Organizational Capacity



	6. Contractors, suppliers and vendors	Considering E&S management and performance in the selection and management of third-party services	EGSS Manager, Corporate Strategy Division, Environment, GIS, and Survey Section, Risk Division, Chief Manager/Sr. Divisional Managers/ Divisional Managers/ Project Managers (PM)	<ul style="list-style-type: none"> • Contractor Management • Contractor Identification and Selection • Procurement Manual • Supplier Code of Conduct
	7. Competence, training and awareness	Make personnel aware of their responsibilities and enable them to be competent to meet their responsibilities	EGSS Manager, Corporate Strategy Division, Environment, GIS, and Survey Section, Risk Division, Project Manager, Support Services Division	<ul style="list-style-type: none"> • Competency, Training and Awareness • Training Records
	8. Operational controls and maintenance	Implement operational controls and maintain equipment to uphold E&S performance and compliance and to manage impacts and risks	Chief Manager/Sr. Divisional Managers/ Divisional Managers/ Project Managers (PM), EGSS Manager	<ul style="list-style-type: none"> • E&S Management Plans and Procedures • OHS Management Plans and Procedures



	9. Documentation and record keeping	Control and maintain documents and records associated with E&S management	EGSS Manager, Corporate Strategy Division, Environment, GIS, and Survey Section, Risk Division, Chief Manager/Sr. Divisional Managers/ Divisional Managers/ Project Managers (PM)	<ul style="list-style-type: none"> • Documentation and Control Procedures
Check & Review	10. Assessing, correcting and improving performance	<p>Ensure non-conformances are promptly reported and take corrective and preventative actions to reduce the likelihood of recurrence.</p> <p>Undertake audits, inspections, monitoring and reviews</p> <p>Report on compliance with the ESMS performance to senior management</p>	EGSS Manager, Corporate Strategy Division, Environment, GIS, and Survey Section, Risk Division, Chief Manager/Sr. Divisional Managers/ Divisional Managers/ Project Managers (PM)	<ul style="list-style-type: none"> • E&S Performance Monitoring, Reporting and Communication • Internal E&S Monitoring • Legal & Regulatory Compliance Monitoring • External Monitoring and Third-Party Audits
Review & updating	11. ESMS review and updating	Review the suitability, adequacy and effectiveness of the ESMS and identify improvement actions to facilitate continuous improvement. Modify the ESMS in response to changes in the Project and to changes in the organization, personnel, operations and processes.	ESMS Committee	<ul style="list-style-type: none"> • ESMS Management Review and Updating • Document and Control Procedures

2. Applicable Legal and Institutional Frameworks

2.1 National Environment and Social (E&S) Regulations

The national legal and institutional frameworks guiding the corporate level ESMS have been broadly divided into four broad areas: Environment, Social and Land Use, Health and Safety and Sectoral and Infrastructure Development.

Table 6. Summary of E&S policy, legal and institutional frameworks applicable to the projects

Policy/ Act/ Regulation/ Guideline	Pre-Construction	Construction	Operation	Decommissioning	Responsibility
Environmental Protection					
Environmental Assessment Act 2000	☐	☐	☐	X	C&PD
National Environment Protection Act 2007	☐	☐	☐	☐	C&PD
Forest & Nature Conservation Act (2023)	☐	☐	X	X	C&PD
The Biodiversity Act 2022	☐	☐	X	X	C&PD
Water Act of Bhutan 2011	☐	☐	☐	☐	C&PD
The Waste Prevention & Management Act 2009	X	☐	☐	☐	C&PD
Regulation on the Environmental Clearance of Projects (RECOP) 2016	☐	☐	☐	X	C&PD
Forest & Nature Conservation Rules & Regulations (2023)	☐	☐	☐	X	C&PD
The Water Regulation of Bhutan 2014	☐	☐	☐	☐	C&PD
The Waste Prevention & Management Regulation 2016	X	☐	☐	☐	C&PD
Environmental Assessment Guideline for Power Transmission Line Projects (2012)	☐	☐	X	X	C&PD
Environmental Standards 2020	X	☐	☐	X	C&PD
Social and Land Use					
Land Act of Bhutan 2007	☐	X	X	X	C&PD and Legal Unit
Land Acquisition & Compensation Rules & Regulations 2022	☐	X	X	X	C&PD and Legal Unit

Health, Safety, and Welfare					
Regulation on Occupational Health, Safety, & Welfare 2022	X	☐	☐	X	Corporate Strategy Division; Support Services Division
Sectoral and Infrastructure Development					
Mines and Minerals Management Act, 1995	☐	☐	☐	☐	C&PD
Electricity Act of Bhutan 2001	☐	☐	☐	☐	Distribution, Transmission, C&PD
Distribution System Master Plan (DSMP 2020-2030)	☐	☐	☐	X	Distribution Department
National Transmission Grid Master Plan (NTGMP) of Bhutan 2018	☐	☐	☐	X	All departments
Bhutan Sustainable Hydropower Development Policy 2021	☐	☐	☐	☐	All departments
National Energy Policy 2025	☐	☐	☐	☐	All departments

To enhance implementation, BPC has Environment, GIS and Survey Section (EG&SS) for E&S safeguards: the EGSS is under the Construction Division (CD), Construction and Procurement Department (C&PD). It manages environmental and social aspects for BPC’s projects at various stages and conducts E&S assessments. It also oversees environmental monitoring, mitigation measures, and community support programs for projects and prepares E&S monitoring reports as per national/Development Partner (DP)’s requirement. Further, the department conducts the public consultation in the project areas. EG&SS currently has a total of 12 positions related to environmental and social services. BPC will explore alignment of national frameworks with DP’s standards to ensure consistent and accountable implementation of E&S safeguards.

2.2 International Finance Corporation (IFC) Documents

2.2.1 IFC Performance Standards 2012

The **PS on Environmental and Social Sustainability (January 2012)**, established by the IFC, provides guidance to clients on identifying and managing risks and impacts. These standards are designed to help clients avoid, mitigate, and manage risks, promoting sustainable business practices. They also outline the client’s obligations for stakeholder engagement and disclosure in relation to project-level activities. For direct investments, including those made through financial intermediaries (such as project and

corporate finance), the IFC requires clients to implement the Performance Standards to manage environmental and social risks, thereby enhancing development opportunities.

A list of the IFC Performance Standards is provided in:

Table 7. IFC Performance Standards

Performance Standard		Applicability
1	Assessment and Management of Environmental and Social Risks and Impacts	Applicable
2	Labor and Working Conditions	Applicable
3	Resource Efficiency and Pollution Prevention	Applicable
4	Community Health, Safety, and Security	Applicable
5	Land Acquisition and Involuntary Resettlement	Limited Applicability. Applicable in context of project development where land is acquired through government acquisition processes or negotiated settlements.
6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Limited Applicability. Applicable only when projects are located near or within Protected Areas and ecologically sensitive areas, such as wetlands, lakes, or other areas designated by the government as ecologically sensitive.
7	Indigenous Peoples	Limited Applicability. Applicable only when Indigenous People (IP) families are impacted in a manner that requires this requirement.
8	Cultural Heritage	Limited Applicability. Applicable only when projects and associated facilities affect cultural heritage sites.

2.2.2 IFC EHS General Guidelines, 2007

The IFC EHS Guidelines serve as technical reference documents, offering both general and industry-specific examples of GIIP. These General EHS Guidelines are intended to be used

in conjunction with the relevant Industry Sector EHS Guidelines, which provide sector-specific guidance on EHS issues. The EHS Guidelines outline performance levels and measures typically achievable in new facilities using existing technology at reasonable costs. For existing facilities, the application of these guidelines may require setting site-specific targets, along with a timeline for their achievement. The applicability of the EHS Guidelines should be adjusted based on the hazards and risks identified for each project, informed by the results of an environmental assessment that considers site-specific factors such as the host country context, the environment's assimilative capacity, and other project-related elements.

2.2.3 IFC EHS Guidelines for Electric Power Transmission and Distribution, 2007

The EHS Guidelines for Electric Power Transmission and Distribution provide relevant information for power transmission from a generation facility to a substation within an electricity grid, as well as for power distribution from a substation to consumers in residential, commercial, and industrial areas.

2.2.4 IFC ESMS Development Framework and Toolkit

2.2.4.1 ESMS General Toolkit

The IFC has developed the ESMS General Toolkit, which provides tools to build or enhance the company's ESMS. This toolkit includes sample documents, blank forms, flowcharts, checklists, and templates for each of the nine elements of an ESMS. Companies can use these tools to accelerate their journey of continuous improvement, benefiting not only the company but also employees and stakeholders.

2.2.4.2 ESMS Implementation Handbook

The IFC has developed the ESMS Implementation Handbook for companies seeking to implement a management system in accordance with the requirements of IFC PS 1. The Handbook offers detailed, step-by-step guidance on developing and implementing a management system that addresses common environmental, OHS, labor, and community risks and impacts that companies may encounter.

3. Corporate Policies and Commitments

BPC has adopted the following commitments and policies for managing the business operations in a sustainable and responsible manner. BPC will develop and adopt the ESMS to implement these policies and commitments.

3.1 Environmental and Social Commitments

BPC commits to:

- Protecting the natural environment, people and communities by integrating E&S considerations into its operations;
- Not financing/investing in the type of activities listed in the national and international E&S Exclusion list;
- Incorporating into its processes, an approach that systematically identifies, assesses, mitigates and monitors the E&S risks and potential impacts associated in its activities;
- Designating the EG&SS as its primary focal point for overseeing E&S risk management activities and ensuring the quality control of E&S procedures within BPC's operations;
- Adopting mitigation strategies to avoid, reduce, or compensate environmental degradation, pollution and adverse social impacts and adapt to the impacts of climate change in its operations;
- Identifying, mitigating, or managing all project-related risks to ensure the health, safety and security of affected communities;
- Maintaining a safe and healthy working environment for all employees and workers;
- Maximizing stakeholder engagement through timely and enhanced information disclosure and meaningful consultation;
- Obtaining free prior and informed consent (FPIC) of the project affected indigenous peoples' communities where applicable.
- Respecting and maintaining the cultural, heritage, and religious beliefs of communities within its operational areas;
- Ensuring human rights, health and safety of people and communities associated with its operations;

- Requiring all staff to understand and uphold E&S standards, publicly sharing its E&S commitments, and maintaining an effective grievance mechanism; and
- Providing training and resources to its operational teams to identify and address environmental and social issues.

3.2 Environment Policy

3.2.1 Policy Scope

This Environmental Policy applies to all operations, activities, and stakeholders of BPC, including employees, business partners, and contractors. The policy encompasses all organizational levels, from top management to operational staff, ensuring a shared responsibility for environmental stewardship. It addresses compliance with applicable legal obligations, the integration of environmental considerations into decision-making, and the promotion of sustainable practices in alignment with BPC's vision, mission, and core values.

Note: The EG&SS implements this policy.

3.2.2 Policy Objective

The objectives of BPC'S Environmental Policy are as follows:

- Demonstrate BPC's commitment to the environmental concerns.
- Become a socially and environmentally responsible Corporation in Bhutan.
- Drive for continual improvement of the company's environmental performance.
- Meet applicable legal obligations and ensure the same standard of compliance from our contractors and suppliers.
- Integrating environmental and social risk assessment into decision making and operational activities.
- Institutionalize environmental stewardship through job responsibilities, encouraging volunteerism and adopting the 3Rs (Reduce, Reuse & Recycle) practice amongst employees.
- Communicating with stakeholders on environmental issues in a transparent and timely manner.
- Provide education and training about environmental risks, responsibilities and initiatives to our employees that may affect their work.

- Develop, implement and maintain a workable environmental management system, to ensure BPC continues to meet its environmental objectives and goals in line with BPC's Integrated Management System (IMS) Manual.
- Continually improving environmental performance through operational efficiencies, engineering improvements and systems development.

3.3 Policy on Gender Quality at Workplace (DHI Group) 2021

3.3.1 Policy Scope

This framework shall extend to all the employees under DHI and its Group Companies (fully owned and controlled). The DHI linked companies shall however be encouraged to apply the Policy Framework. Employees include regular, contractual and intern/temporary staff of the organization.

Note: The Human Resources Management Section implements this policy.

3.3.2 Policy Objective

The Policy Framework has been developed with the following objectives:

- To streamline the mechanisms to address gender related issues and enhance the working environment.
- To address harassment issues including sexual harassment at workplace.
- To build gender awareness, understanding and the internal capacity of the companies on promoting gender equality.
- To integrate gender in the planning, management and working systems and practices.

3.4 Occupation Health and Safety Policy

3.4.1 Policy Scope

This policy applies to all employees, contractors, visitors, and stakeholders involved in or impacted by the operations and activities of BPC. It encompasses all work environments, processes, and associated OHS practices to ensure compliance with the Labour and Employment Act of Bhutan 2007 and all relevant OHS legislation.

Note: The Human Resources Management Section and Corporate Strategy Division implements this policy.

3.4.2 Policy Objective

The objectives of this policy are to:

- Ensure that all work activities are conducted in a safe and healthy environment, with risks to health, safety, and welfare identified, assessed, and mitigated effectively.
- Comply fully with the Labour and Employment Act of Bhutan 2007 and applicable OHS laws, standards, and best practices.
- Define and uphold the roles and responsibilities of management and employees in fostering a culture of safety and well-being.
- Promote continuous improvement in occupational health and safety performance by implementing proactive measures, monitoring, and reviewing practices regularly.
- Safeguard the well-being of all individuals who may be affected by BPC's operations, including workers, contractors, visitors, and the community.

3.5 BPC Customer Credit Policy

3.5.1 Policy Scope

This credit policy shall apply to all customers drawing electricity from BPC and Druk Green Power Corporation Limited (DGPC) for receivables on wheeling for the export energy.

Note: The Distribution Department implements this policy.

3.5.2 Policy Objective

The objective of this credit policy is to reduce bad debt and increase collection efficiency.

3.6 BPC Housing Allotment Policy

3.6.1 Policy Scope

To ensure that employee housing is managed efficiently while supporting the service delivery requirements of the company. The policy applies to all employees involved in the occupation, administration or management of long-term employee housing owned or controlled by BPC.

Note: The Human Resources Management Section implements this policy.

BPC may, from time to time, make further rules/policy/ amendments to carry out purposes of this policy.

3.6.2 Policy Objective

The objective of the housing policy is to:

- Establish a framework for implementation of the policy for BPC housing units.
- Ensure access to BPC staff quarters for efficient workforce management to provide uninterrupted services, and during the time of emergencies.
- Ensure fair and transparent means of allocation of housing units to its employee based on the eligibility criteria guidelines.
- Ensure uniform calculation of carpet area throughout and rental for each unit respectively.

3.7 Stakeholder Engagement Policy

3.7.1 Policy Scope

This Stakeholder Engagement Policy applies to all stakeholders interacting with BPC. It encompasses internal stakeholders such as employees, management, and board members, as well as external stakeholders including government bodies, regulators, customers, local communities, environmental groups, investors, suppliers, and contractors. The policy is relevant across all operational areas and projects undertaken by BPC, with a specific emphasis on alignment with Bhutan's Gross National Happiness (GNH) philosophy and adherence to IFC guidelines.

Note: The EG&SS implements this policy.

3.7.2 Policy Objective

The objective of this policy is to establish a comprehensive framework for stakeholder engagement that ensures transparency, inclusivity, and responsiveness. Specifically, the policy aims to:

- Foster meaningful dialogue and collaboration with stakeholders to enhance trust and mutual understanding.
- Ensure the timely identification, analysis, and engagement of stakeholders to address their interests, concerns, and impacts effectively,

- Align BPC's stakeholder engagement practices with IFC standards and Bhutan's GNH philosophy, promoting sustainable development, environmental conservation, cultural preservation, and good governance.
- Develop and implement a structured stakeholder engagement plan that includes mechanisms for consultation, grievance redress, and continuous monitoring and improvement.
- Strengthen BPC's operational effectiveness, compliance with international best practices, and reputation among local and global stakeholders.
- Support BPC's mission of delivering reliable and sustainable energy services while contributing positively to the social, economic, and environmental well-being of Bhutan.

3.8 Asset Management Policy

3.8.1 Policy Scope

This policy applies to all movable assets owned or controlled by BPC, including but not limited to:

Table 8. List of movable assets

S. N	Asset Description
1	Meter Reading Devices
2	Firefighting Equip
3	Comp and Peripherals
4	Data Center Equip
5	Telecom Equip
6	Printer
7	Fax Machine
8	Scanner
9	Photocopier
10	Camera
11	Projector
12	Other Equipment
13	Tools & implements
14	Electrical Equipment
15	Computer Software
16	OPGW Fibre Cable

17	ADSS Fibre Cable
18	SDH Equipment
19	Vehicles
20	Furniture, Fix & Fittings

This policy pertains specifically to moveable assets and does not encompass inventory management, which is governed by the Inventory Management Manual 2016.

Note: The Corporate Services Department implements this policy.

3.8.2 Policy Objective

The primary purpose of this policy is to:

- Ensure the availability and reliability of assets to support the operations of BPC.
- Optimize asset utilization to maximize efficiency and minimize costs.
- Establish clear procedures for the maintenance, repair, replacement, and disposal of assets.
- Enhance accountability and transparency in asset management practices.
- Comply with legal, regulatory, and environmental standards related to asset management.

3.9 Fleet Management Policy

3.9.1 Policy Scope

This policy applies and covers the acquisition, usage, management and disposal of vehicles across the company. It shall apply to all the functional units of the Company. This policy does not supersede laws, rules or regulations passed by the DHI or by RGoB. The enforcement of this policy shall be the responsibility of all the functional units of BPC and it shall be the responsibility of every unit to ensure that its employee is aware of this policy, provide guidance concerning the policy, and take appropriate corrective action whenever necessary.

Note: The Corporate Services Department implements this policy.

3.9.2 Policy Objective



The objective of this policy is to set a framework to guide the Company in maintaining, management and efficient use of optimum fleet size as follows:

- Induce operational and administrative controls of all vehicles within the company.
- Ensure efficient and effective procurement, deployment, use and management of the company vehicles.
- Make employees accountable in the use of company vehicles.
- Bring transparency in use of company vehicles.
- Maintain the company's vehicle fleet size at an optimal level at all times.
- Ensure that vehicles are in good condition at all times.
- Ensure that all vehicles are operated in strict compliance with motor vehicle laws/rules of the Country

4. Identification of Risks and Impacts

4.1 Project Risks and Impacts Identification

4.1.1 Legal and Other Requirements

BPC will maintain the understanding of the full scope of legal and regulatory requirements that apply to all phases of the project life cycle, as well as any associated planning, operating, monitoring, or reporting requirements. Prior to the initiation of the construction phase of the project, however, document no. ISO/IMS/BPC/PR/LRC/2023, “Procedure for Legal Requirements & Compliance  ” will be adhered to, in order to provide guidance for routinely integrating required permitting actions into the advance planning and scheduling of construction, and operations activities, as well as new (if any) activities that may be initiated in those phases. This understanding will be considered in the risk and impact evaluation process described in Section 4.1.2. Document no. ISO/IMS/BPC/PR/LRC/2023  will also provide for the development and regular update of a Project specific register of regulatory requirements that is based on the regulatory setting defined in the project planning document, as well as other voluntary lender and industry-specific standards that BPC may choose to adopt for the Projects (e.g., applicable IFC performance standards and industry-specific guidelines). Document

no. ISO/IMS/BPC/PR/LRC/2023^{Procedure for Legal Requirements & CI} will also require that the Project establish and maintain access to appropriate information sources as the means to identify new or modified regulatory requirements or changes that may affect any phase of Project operations.

As noted in Section 8, Monitoring and Review, after the initiation of the construction phase, the Project’s regulatory compliance status will be subject to an internal verification audit on at planned intervals. Any compliance issues that may be detected in the verification audit process will be formally resolved in accordance with document no. ISO/IMS/BPC/PR/NCP/2023, “Procedure for EHS Nonconformity, Corrective and Preventive Action^{Procedure for EHS Nonconformity Corrective}” and document no. ISO/IMS/BPC/PR/CPA/2023, “Procedure for Corrective and Preventive Action^{Procedure for Corrective and Preventive}.”

4.1.2 E&S Aspects and Impacts, Risk Assessment, and Risk Management Planning

Initial identification of the social and environmental aspects and potential impacts associated with project development, operations, decommissioning and closure operations will be documented separately for each project activity. The potential environmental and social impacts that will be identified through the ESIA’s or any other source of records will be reflected in the Management Plans, listed in Table 2 and described in greater detail in Section 5.


O&M-specific aspects will be identified via activity-based HIRAs (per ISO/IMS/BPC/PR/HIRA/2023^{Procedure for HIRA.pdf}) covering routine/emergency repairs, fault rectification, substation inspections, contractor works, and asset decommissioning. Examples include oil/chemical spills during repairs (High risk: $L4 \times S5 = 20$), hazardous waste from retired transformers (Medium: $L2 \times S5 = 10$), and contractor labor violations (Medium: $L3 \times S4 = 12$). These will rank risks via likelihood (1-5) × severity (1-5) matrix (High ≥ 15 requires immediate management programs) and integrate into updated ESIA registers.



The identified E&S impacts will be summarized and documented in the IEE/ESIA report. Feedback from local and external stakeholders will be incorporated and specifically considered during the evaluation of social and environmental aspects and impacts. Any





required updates to the register will result in corresponding modifications or additions to the Project’s Management Plans or other performance improvement measures.

4.1.3 Occupational Health and Safety Hazard Identification, Risk Assessment, and Risk Management Planning

As outlined in Table 4, BPC has established a set of OHS-related OCPs and SOPs to address identified hazards and OHS risks. Table 4 extends to O&M hazards including live-line work (electrocution risk: High), falls during tower inspections (High), contractor fatigue in major maintenance (Medium), and safe asset dismantling. Activity-specific HIRAs will evaluate these per ISO/IMS/BPC/PR/HIRA/2023  Procedure for HIRA.pdf , with findings triggering SOP updates (e.g., lockout/tagout for repairs, spill kits for substations).

Work area-specific risks that emerge as the Project progresses will be evaluated and documented in compliance with Procedure Document No. ISO/IMS/BPC/PR/INI/2023, “Procedure for Incident Investigation”  Procedure for Incident Investigation.pdf , and Document No. ISO/IMS/BPC/PR/HIRA/2023  Procedure for HIRA.pdf , "Procedure for Hazard Identification and Risk Assessment."

Relevant findings will be integrated into updates or additions to affected Management Plans, as appropriate. If additional SOPs are necessary to address newly identified conditions or requirements of the Management Plans, they will be developed in accordance with Document No. ISO/IMS/BPC/PR/COD/2023, "Procedure for Control of Documents"  Procedure for Control of Documents.pdf , and Document No. ISO/IMS/BPC/PR/COR/2023, "Procedure for Control of Records"  Procedure for Control of Records.pdf ."

4.2 Potential E&S Risks and Impacts

This section of the ESMS outlines the potential impacts that may arise throughout the project lifecycle. By analyzing the distinct stages of the project lifecycle, key environmental and social risks applicable to all project phases are identified and addressed.

As part of its ESMS, BPC has established a climate risk assessment framework and a Hazard Identification & Risk Assessment (HIRA) Procedure. These tools are designed to

systematically identify potential environmental and social risks and impacts by correlating project components with the surrounding environmental and sociocultural resources.

O&M HIRAs occur quarterly for high-risk activities (e.g., fault repairs: electrical shock/spills; contractor maintenance: waste mismanagement; decommissioning: PCB disposal), prioritizing via risk matrix and linking to climate framework for lifecycle coverage.

Table 9. General risks identification

S. N	Impact Item	Potential Impacts & Risks
Environment		
1	Air Quality	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> • Dust is foreseen to be generated during civil engineering works such as land development. • Dust and Air pollutant emissions such as NO_x and SO_x caused by construction of temporary access roads are foreseen but the impact is temporary. • Emissions from heavy equipment and trucks are possible, but the extent of impact associated with emissions is limited to the vicinity of the construction area.
2	Water Quality	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> • Contamination of ground and/or surface water due to improper disposal of wastewater. • Leakages from pipe burst. • Accidental spillage of hazardous chemicals stored on site.
3	Waste	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> • General and hazardous waste such as plastic, PET bottles, empty cement bags and admixture barrels are generated during construction from construction sites.
4	Soil Quality	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> • Possible soil contamination due to leakage of lubricating oil and fuel oil from construction equipment, etc.
5	Noise and Vibration	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> • Noise and vibration impact is expected due to the operation of heavy machinery and trucks, and construction of

		temporary access roads but the impact area is limited to the vicinity of the construction area.
6	Subsidence	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> No use of ground improvement chemicals
7	Odor	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> Odors are expected if waste materials are not properly disposed of.
8	Sediment	<p><i>Construction and Operation Phase:</i></p> <ul style="list-style-type: none"> No special impact is expected since there is no continuous drainage to rivers, etc.
9	Protected Areas	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> If the line traverses through a PA, impacts to the natural physical environment in the project area due to tree cutting, digging, air pollution, noise generated by construction activities and construction of temporary access roads are expected. <p><i>Operation Phase:</i></p> <ul style="list-style-type: none"> Impact of landscape degradation due to steel towers is expected.
10	Biodiversity	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> Construction work including (access road) involves clearing and rooting, resulting in loss of vegetation and fragmentation and loss of animal habitat on a certain scale. Air pollution and noise due to the operation of heavy machinery and deep excavation at the location of the tower, which is expected to have an impact on animals. <p><i>Operation Phase:</i></p> <ul style="list-style-type: none"> Impacts on behavior of large mammals such as elephants, bird strikes, etc. are expected. In forested areas, the impact is expected to be the felling of trees to maintain separation distances under the line at regular intervals and the fragmentation and loss of animal habitats.
11	Hydrology	<p><i>Construction and Operation Phase:</i></p> <ul style="list-style-type: none"> No particular impact is expected.

12	Topography & Geology	<p><i>Construction and Operation Phase:</i></p> <ul style="list-style-type: none"> No significant topographic change is expected.
Social		
13	Land Acquisition & Resettlement	<p><i>Pre-Construction Phase:</i></p> <ul style="list-style-type: none"> As a result of field survey and hearing from local government and residents, certain acres private land acquisition of HHs may be planned.
14	Socially Vulnerable Groups	<p><i>Pre-Construction Phase:</i></p> <ul style="list-style-type: none"> Socially vulnerable groups may be identified among project affected persons.
15	Ethnic Minorities and Indigenous Peoples	<p><i>Pre-Construction Phase:</i></p> <ul style="list-style-type: none"> Indigenous peoples may be identified among project affected persons.
16	Local economy, including employment and means of livelihood	<p><i>Pre-Construction Phase:</i></p> <ul style="list-style-type: none"> Orchard or any other products may be lost by permanent land acquisition. <p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> Employment opportunities arise as construction workers. <p><i>Operation Phase:</i></p> <ul style="list-style-type: none"> Local residents could be employed to assist in the operation and maintenance of the transmission line.
17	Land use and land resource use	<p><i>Pre-Construction Phase:</i></p> <ul style="list-style-type: none"> Community Forest (CF) identification
18	Existing social infrastructure and social services	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> Traffic volume of trucks is predicted to increase during the construction.
19	Labor Environment	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> A number of workers will be temporarily staying at the construction site, accordingly, appropriate considerations are required to be planned and implemented in terms of employment conditions and safety for various workers, including domestic and foreign workers, gender-wise considerations, etc. <p><i>Operation Phase:</i></p>

		<ul style="list-style-type: none"> BPC is required to manage their staff in charge of transmission lines in accordance with the Labour and Employment Act 2007 and also the Occupational Safety and Health Policy (OSPH).
20	Sanitation, Safety and security in local society	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> The inflow of many workers at the construction site may result in infectious disease outbreaks, deterioration of public safety, etc.
21	Cultural heritage	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> Impact on local historical, cultural, or archaeological properties, land features near the transmission line may be possible.
22	Scenery	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> Possibility of negative impact on the landscape.
23	Gender	<p><i>All Phases:</i></p> <ul style="list-style-type: none"> Possibility of Gender based issues.
Transmission Line and Installation of Transmission Towers		
24	Land procurement/acquisition under RoW	<ul style="list-style-type: none"> Loss of land/ livelihood. Disturbance to local livestock population Unrest among the community due to dislocation of any structure or thing of cultural belief. Conflicts with the local community.
25	Site Clearance/Clearing and grading for RoW Preparation	<ul style="list-style-type: none"> Visual impact on landscape. Soil erosion. Air pollution. Negative impact on flora and fauna. Noise pollution and negative impact on inhabitants. Depletion of natural resources. Job opportunities creation. Conflicts with the local community. Near miss, injury, accident and fatalities.
26	Installation of transmission tower and stringing of wires	<ul style="list-style-type: none"> Noise pollution. Job opportunities creation. Conflicts with the local community. Near miss, injury, accident and fatalities.

27	Transportation of material, machineries, equipment and workforce to site	<ul style="list-style-type: none"> Noise & Air pollution due to increase in vehicles. Conflicts with the local community. Accidents and fatalities due to increased vehicular traffic.
28	Operational TL	<ul style="list-style-type: none"> Death & Electrocutation of Avifauna.
Others		
29	Accident	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> There is a possibility of accidents due to construction activities. Also, traffic accidents can happen due to increased traffic. Wild animal attack possibility. <p><i>Operation Phase:</i></p> <ul style="list-style-type: none"> Accidents may occur during maintenance work of transmission towers and lines.
30	Transboundary impacts, and climate change	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> Construction activities will generate CO2, but it is temporary and has a very negligible impact on climate change.
31	Poaching	<p><i>Construction Phase:</i></p> <ul style="list-style-type: none"> Illegal hunting may be expected by workers.
32	Fault Repairs/ Inspections	<p><i>Operation Phase:</i></p> <ul style="list-style-type: none"> Electrical hazards, falls from towers, oil spills, noise from equipment, avifauna electrocution during patrols.
33	Contractor Major Maintenance	<p><i>Operation Phase:</i></p> <ul style="list-style-type: none"> Labor exploitation (forced/child labor), improper hazardous waste disposal, inconsistent E&S compliance.
34	Decommissioning	<p><i>Operation Phase:</i></p> <ul style="list-style-type: none"> Hazardous waste leakage (PCBs from transformers), illegal dumping of conductors/poles, soil contamination.

Table 10. Departmental risk identification and mitigation plan

Department: Distribution							
Sl. No.	Processes	Relevant Policies and Framework	E&S Risks	Current gaps	Actions needed by each element	Roles and Responsibilities	Timeline
A	DOMPS						
1	Planning of all the distribution related works; and execution of distribution works related to upgradation of existing substations, shifting works, extension of LT lines and other works (including deposit works and tender works)	DDCS , Deposit work guideline , DOP , ESR	Safety hazards of workers, public safety, soil erosion, habitat alteration for nesting birds and animals, social disputes regarding land acquisitions, risk of planning through private lands or conserved land	1. risk assessment does not cover all the aspects of the risks involved (electrocution/fire risks, worker safety hazards, public safety and land use conflicts). 2. assessment of the labour and working conditions, health and safety of the workforce from the contractor's side not done. 3. We do not have employment contracts, payment records, and grievances log to assess labour risks.	1. Policy-need to include environmental and social issues into our policies (environmental protection, safety aspects and community well-being), need to update the policies regularly, we need to look into the labour and working conditions of the contractor since we do not have an independent policy. 2. risk assessment needs to be done covering all the aspects of the risks involved (electrocution/fire risks, worker safety hazards and land use conflicts), We need to assess the labour and working conditions, health and safety of the workforce from contractor's side as well, We need to have employment contracts, payment records, and grievances log to assess labour risks, We need to identify communities that might be affected with the projects and assess risk accordingly. 3. Management: We need to engage early with the affected owners for land acquisition issues, such as the cases of shifting the infrastructure; The contractors should also incorporate our management system and develop their own plans for the timely completion of projects with	everyone within the department in close collaboration with relevant personnels from other departments	1 year

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					<p>minimum negative impacts.</p> <p>4. Organization: need to address change management risks in project operations and activities</p> <p>5. Emergency: We need to ask for emergency response plans for contract works as well from the contractor's side.</p> <p>6. Stakeholders: We need to conduct stakeholders' meetings on a regular basis to reduce negative impacts on the projects and revise and update our action plans accordingly.</p> <p>7. Monitoring: We need to monitor the contractor's labours and have a proper monitoring plan in place.</p>		
2	Budgeting and preparation of investment plans for the department	DSMP, budget manual	over/under estimation of the budgets	E&S related risks are not assessed, no policy	<p>1. Policy: need to have a policy in line with the E&S elements</p> <p>2. Risk: need to assess the E&S related risks</p>	DCSD	1 year
3	Operation and maintenance	O&M manual	<p>1. safety hazards of workers</p> <p>2. community safety</p>	risk assessments are not done periodically nor there is a detailed guidance or format on the field level on how the assessments need to be done	<p>1. Risk assessment to be done in compliance with E&S aspects.</p> <p>1. Organization: need to address change management risks in operations.</p> <p>2. Emergency: need to have emergency response plans for O&M works</p>	ESDs/ DCSD	1 year
4	Monitor the performances of ESDs and provide necessary support regarding any issue.	TAS document	non-achievement of the targets (both departmental and company)	No SOP/guidelines as such for different issues being raised and resolutions to be proposed	<p>1. Policy: development of the SOP</p> <p>2. Monitoring: proactive monitoring to be done</p>	DCSD	1 year
B	Customer Service Section (CSS)						

5	Monitoring of metering and billing of HV, MV and LV customers.	Supply rules	<ol style="list-style-type: none"> 1. Faulty meters can contribute to e-waste if not properly disposed 2. Changes in billing tariff may affect low-income customers 3. Poor communication or errors in metering/billing (e.g., overcharging, inaccurate bills) can lead to public complaints or loss of trust. 	limited manpower and monitoring not done periodically at division level	<ol style="list-style-type: none"> 1. Policy: incorporation of e-waste minimization and proper disposal related to meter in the environmental policy. 2. need to bring more people on board and provide training 3. monitoring to be done periodically at the division offices 	CSS and EGSS	1 year
6	Load and demand forecast along with forecasting of revenue for tariff.	ERA	<ol style="list-style-type: none"> 1. Revenue forecasts directly impact tariff proposals. Overestimation of demand or revenue needs can lead to higher-than-necessary tariffs. 	<ol style="list-style-type: none"> 1. No stakeholder (customers) involvement 2. No framework 	Management: Develop a forecasting improvement plan that includes regular model validation and timely review, Capacity Building (Providing training to relevant staff on best practices in demand forecasting and the social impact of tariff structures)	CSS and Management team	1 year
7	Coordinate and ensure smooth O&M of EV charging stations.	only agreement with government	<ol style="list-style-type: none"> 1. Improper disposal of damaged or obsolete charging equipment, cables, or batteries can contribute to e-waste. 2. Risk of electric shock, fire, or tripping hazards from exposed wires or poorly maintained chargers. 	No risk assessment done, no trained personnels	<ol style="list-style-type: none"> 1. Risk assessment procedures 2. Training of staffs 	CSS and Management team	1 year

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8	Handling all complaints made to the contact center by the customer through 1250, WhatsApp, Facebook and web chat	SOP for call center	1. Not all customers can access or use digital platforms (elderly, low-income, rural populations)-Unequal access to grievance mechanisms and public dissatisfaction. 2. Call center agents may face stress, harassment, or poor working conditions.	no root cause analysis done for the complaints	1. Organization: designation of an E&S focal person to monitor complaint trends and flag issues. 2. Grievances: We need to develop SOP for call centers for handling ESMS related grievances from the customers.	CSS	1 year
C Smart grid section							
9	Integration of SCADA compatible equipment in the present grid	Smart grid master plan 2019	Safety risk during installation due to electrical faults	Limited technical expertise	Organization: Capacity building through trainings	Smart grid section in collaboration with ESDs	By 2027
10	Real time monitoring and monitoring of data collected from distribution substations through SCADA.		Operational risk due to communication gap between control center operators and field workers	No expertise for data analysis	Organization: Training for relevant personnels	DMS team	ongoing
11	Operation and maintenance of RTUs and communication works		Risk of service interruption, especially in remote areas and during fiber damages	1. Lack of trained workforce for network monitoring. 2. multitasking without proper training or experience	1. Management: Need a dedicated maintenance team. 2. Management: AMC with vendor is needed	RTU team will look after the RTU issues, while communication team handles networking issues	ongoing
12	Integration of cyber security in SCADA system		Code of Practice for Information Security, Cybersecurity and Privacy	Cyberattack risk, data breaches	No dedicated cyber team	Organization: Recruit cybersecurity experts especially with IT background	Communication team at present

		Protection for ICT (BICMA)					
Division/Department: Construction Division, Construction & Procurement Department							
A	Planning						
1	Identify and assess E&S risks; prepare mitigation plans; engage stakeholders early	ESR , Deposit Work Guidelines , BSR	Environmental: 1. Habitat destruction from site clearing. 2. Soil and water contamination due to improper waste/fuel handling. 3. Air and noise pollution from machinery. 4. Resource depletion (water, timber, aggregates). 5. Vulnerability to natural disasters if site/design is inadequate.	1. Risk assessments may be incomplete or outdated; 2. Lack of systematic labor documentation (contracts, payments); 3. Emergency Preparedness and climate resilience not fully integrated; 4. Stakeholder engagement is irregular and undocumented.	1. Conduct detailed E&S risk assessments (HIRA, climate vulnerability); 2. Update policies to cover labor standards and environmental protection; 3. Require contractors to maintain employment and grievance records; 4. Develop and enforce Emergency Preparedness and Response Plans; 5. Engage communities early, especially on land and heritage concerns; 6. Document all consultations and update plans regularly.	CD, EGSS, SSD	3 months
2			Social: 1. Impact on cultural heritage sites; 2. Land acquisition and resettlement issues; 3. Community health and safety risks; 4. Labor conditions including contracts, wages, and safety.				
B	Tendering						

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1	Prepare tender documents with E&S clauses; ensure fair, transparent contractor selection; establish grievance mechanism.	Procurement Manual for Works , DoP, GCC of Works (DHI)	1. Lack of Stakeholder engagement leading to opposition; 2. Risks of corruption, favoritism, nepotism; 3. Poor transparency in procurement; 4. Conflict of interest among evaluators.	1. Weak or inaccessible grievance mechanisms; 2. Limited disclosure of tender criteria and results; 3. Ethics and anti-corruption policies not enforced consistently.	1. Establish and publicize a grievance mechanism; 2. Ensure transparency by disclosing tender evaluation criteria and results; 3. Conduct ethics and anti-corruption training; 4. Include E&S requirements and grievance procedures in tender documents; 5. Enforce conflict of interest declarations.	CD, CMS	1 month
C Execution							
1	Implement construction with E&S controls; monitor compliance; manage labor and community relations; conduct emergency drills.	Contract Docs, DDCS, CBIP Manual, Waste Management SOP , Implementation Plan	Environmental: 1. Continued habitat and resource impacts; 2. Pollution risks from waste and emission; 3. Natural disaster risks if mitigation is inadequate.	1. Inconsistent monitoring and reliance on contractor self-reporting; 2. Emergency drills infrequent or undocumented; 3. Contractors' procedures not fully aligned with BPC standards; 4. Weak enforcement of labor protections; 5. Grievance mechanisms for workers are insufficient.	1. Implement independent and regular E&S monitoring; 2. Conduct and document emergency drills; 3. Require contractor SoPs aligned with BPC E&S standards; 4. Enforce waste management and labor standards strictly; 5. Provide accessible grievance mechanisms and training.	CD, CPO, CS, CMS	5 Months
2			Social: 1. Cultural heritage disturbance; 2. Resettlement and compensation issues; 3. Community health and safety hazards; 4. Labor exploitation, unsafe conditions, child/forced labor risks; 5. Worker grievance unresolved.				
D Testing, Commissioning & Handover							
1	Verify E&S compliance; resolve issues; document lessons learned; handover to operations	GCC/SCC	1. Risks of unresolved E&S non-compliance; 2. Outstanding grievances or environmental liabilities; 3. Lack of systematic documentation of lessons learned.	1. No formal E&S compliance checklist for handover; 2. Unresolved issues not tracked or assigned; 3. Lessons learned not captured or shared.	1. Develop and apply an E&S compliance checklist for handover; 2. Ensure all E&S issues are closed or have action plans; 3. Document and disseminate lessons learned; 4. Formalize E&S compliance verification during handover.	CPO	1 month

Division/Department: CSD, QAS							
A		Incident Reporting					
1	Report and record E&S incidents and noncompliance for review and improvement.	ROHSW-22, DoL/ Safety Code 2021 , ERA/ Safety Framework 2020	1. Regulatory noncompliance leading to legal action, fines, or sanctions; 2. Missed or underreported incidents can mask systemic issues, leading to recurring E&S failures; 3. Poor reporting can damage the division's reputation and undermine stakeholder trust; 4. Unaddressed incidents may impact employee morale and performance.	1. No formal system for reporting and tracking social or environmental incidents; 2. Data on E&S incidents is fragmented or not shared across teams; 3. Lack of regular analysis and review of incident trends to inform decision-making and strategy updates.	1. Develop and implement a centralized E&S incident reporting and tracking system; 2. Ensure all incidents (including near misses) are logged and reviewed regularly; 3. Analyze trends to identify root causes and systemic risks; 4. Update safety framework and incident management protocols to align with ESMS standards.	1. CSD to lead development of the reporting system; 2. CSD to lead development of the reporting system; 3. Coordinate with QAS for ESMS alignment.	6 months
B		Safety Training & Awareness					
1	Conduct regular training on E&S and OHS risks for all staff	ROHSW-22, DoL/ Safety Code 2021 , ERA/ Safety Framework 2020	1. Employees may lack awareness of E&S risks specific to strategic planning and corporate operations (e.g., data privacy, business continuity, ergonomic hazards, and environmental compliance); 2. Insufficient training can result in unintentional noncompliance or unsafe practices; 3. Lack of understanding of social risks (e.g., workplace diversity, inclusion, and	1. Training programs focus mainly on general OHS, with limited coverage of E&S aspects relevant to strategic functions; 2. No regular refresher courses or updates on emerging E&S issues; 3. Limited tracking of training effectiveness and employee competency.	1. Integrate E&S topics (including business ethics, data security, and environmental compliance) into all training modules; 2. Conduct regular refresher sessions and scenario-based workshops; 3. Monitor training attendance and assess knowledge retention; 4. Update training content in line with current E&S risks and regulations.	1. CSD to coordinate with HR and QAS for training content; 2. Ensure all staff complete E&S modules; 3. Report on training outcomes to management.	End of 2025

			stakeholder engagement)				
C	Inspection & Monitoring						
1	Monitor compliance with E&S and OHS standards; report deviations	ROHSW-22, DoL/ Safety Code 2021 , ERA/ Safety Framework 2020	1. Failure to monitor E&S compliance can lead to unnoticed legal violations or reputational harm; 2. Inadequate oversight may result in environmental degradation (e.g., inefficient resource use, waste generation in office operations); 3. Lack of monitoring can allow social risks (e.g., discrimination, harassment) to persist.	1. E&S indicators are not systematically included in internal audits or performance reviews; 2. Data on E&S compliance is not consistently reported to management; 3. No clear process for corrective actions when E&S issues are identified.	1. Expand internal audits to include E&S indicators relevant to corporate strategy (e.g., resource efficiency, inclusivity, ethical conduct); 2. Use digital tools for real-time monitoring and reporting; 3. Establish clear procedures for corrective and preventive actions on E&S issues; 4. Regularly review E&S performance at management meetings.	1. CSD to update audit protocols; 2. Assign E&S focal points for monitoring; 3. Report findings to the executive team.	End of 2025
D	Stakeholder Engagement						

1	Consult workers and Stakeholders on E&S risks and address concerns	SMS 2021, ISO 45001, ROHSW-22	1. Poor engagement can result in overlooked E&S risks and missed opportunities for improvement; 2. Lack of consultation may lead to stakeholder dissatisfaction, complaints, or project delays; 3. Failure to address stakeholder concerns may damage BPC's corporate reputation and social license to operate.	1. Stakeholder engagement is not systematically planned or documented; 2. Feedback from stakeholders is not always integrated into strategic decisions; 3. No formal mechanism for tracking and resolving stakeholder grievances.	1. Develop a stakeholder engagement plan covering all relevant E&S topics; 2. Schedule regular consultations with both internal and external stakeholders; 3. Document all feedback and actions taken; 4. Establish a formal grievance redress mechanism and track resolution progress; 5. Integrate stakeholder feedback into strategic planning cycles.	1. CSD to draft and implement engagement plan; 2. Assign responsibility for documentation and follow-up; 3. Report engagement outcomes to leadership.	End of 2025
E Emergency Preparedness & Response							
1	Prepare for E&S and OHS emergencies; develop integrated response plans	ROHSW-22, IMS Manual	1. Inadequate planning may lead to poor response to E&S emergencies (e.g., data breach, fire, natural disaster, or reputational crisis); 2. Delayed or ineffective responses can cause harm to employees, assets, or the environment; 3. Reputational damage if emergencies are mishandled or unreported.	1. No integrated E&S emergency response plan (ERP) tailored to corporate operations; 2. Existing procedures may be outdated or lack clarity on E&S responsibilities; 3. Limited staff awareness or training on ERP protocols.	1. Develop and implement an integrated ERP covering all relevant E&S emergencies (including cyber, physical, and reputational risks); 2. Conduct regular drills and simulations; 3. Clearly assign roles and responsibilities; 4. Review and update ERP annually based on lessons learned and changing risk landscape.	1. CSD to lead ERP development; 2. Collaborate with EGSS and IT; 3. Ensure all staff are trained and aware of protocols.	End of 2025
Section/Division/Department: Human Resource Management Section							
A	Hiring						

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1	Identify hiring needs, develop recruitment plan, draft job descriptions, source and select candidates.	Recruitment Guidelines	1. Gender bias and cultural insensitivity affecting diversity and inclusion; 2. Mismatch of skills due to overemphasis on academic performance.	1. HR policies insufficiently address gender bias and cultural diversity; 2. Hiring practices rely heavily on academic records; 3. Lack of monitoring for bias.	1. Revise HR policies to address bias and inclusivity; 2. Use structured and unbiased selection methods; 3. Monitor hiring data for diversity and fairness.	HR Manager	End of 2025
B	Training						
1	Plan and deliver training aligned with assessed needs; ensure relevance and inclusivity.	Training Calendar, TNA Budget Proposal	1. Gender bias in training content and participation; 2. Irrelevant training reduces effectiveness and engagement.	1. Training lacks focus on gender equity and relevance; 2. Ad hoc sessions without alignment to needs; 3. Limited evaluation of training impact.	1. Align training with TNA; 2. Include gender equity and bias awareness; 3. Implement ongoing, planned training; 4. Track participation and outcomes.	Management, HR Manager	End of 2025
C	Working Hours & Wages						
1	Track and audit working hours and wages to ensure compliance with labor laws and policies.	SRR-2020, HR Policy	1. Unpaid overtime and wage inequities; 2. Inconsistent overtime tracking causing disputes; 3. Potential gender pay gaps.	1. Overtime tracking and wage audits are inconsistent; 2. Payroll transparency is limited; 3. No regular wage audits.	1. Conduct wage and overtime audits; 2. Strengthen overtime tracking and payment policies; 3. Promote wage transparency and equal pay.	HR Manager, Payroll Team	End of 2025
D	Grievance Mechanism						
1	Establish and maintain a grievance system accessible to all employees; ensure timely resolution.	Grievance Redressal Policy (under process)	1. Focus on internal employees only; 2. Delays in complaint resolution; 3. Risk of underreporting due to fear or lack of awareness.	1. Policy incomplete and not fully implemented; 2. No clear timelines or accountability; 3. Poor communication of grievance channels; 4. No audits.	1. Finalize and implement inclusive grievance policy; 2. Conduct quarterly grievance audits; 3. Enhance awareness and anonymous reporting options.	Management, HR Manager	End of 2025
Section/Division/Department: Procurement Division							
A	Procurement of Materials						

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1	Manage sourcing and purchasing of goods, ensuring supplier compliance with environmental and social standards.	DHI Group Procurement Manual for Goods	1. Environmental impacts from raw material extraction and manufacturing (pollution, resource depletion); 2. Carbon emissions and pollution risks during transportation; 3. Social risks including labor rights violations and poor working conditions at supplier sites; 4. Lack of transparency in supply chains increasing risk of hidden adverse impacts.	1. Most materials are imported, limiting BPC's direct oversight of supplier E&S practices; 2. Procurement manual currently lacks explicit E&S criteria; 3. Tender documents do not consistently include E&S clauses; 4. Limited supplier engagement on sustainability.	1. Collaborate with DHI to integrate clear E&S requirements into the procurement manual; 2. Include E&S clauses in tender documents as interim measure; 3. Develop supplier screening and monitoring processes focused on E&S compliance; 4. Promote supplier capacity building on ESG standards; 5. Establish data collection for supplier E&S performance.	1. DHI to revise procurement manual; 2. Procurement Division (PD) to update tender documents and monitor suppliers.	2026
B Material Management and Warehousing							
1	Oversee storage, handling, and inventory of materials ensuring safety, environmental protection, and waste management.	Inventory Management Manual, Warehouse Management Policy	1. Occupational health and safety risks for warehouse workers (accidents, exposure to hazardous materials); 2. Environmental risks from improper waste disposal and lack of hazardous waste management; 3. Poor housekeeping increases risk of contamination and inefficiency; 4. Lack of environmental controls in warehouse operations.	1. Warehouse policy does not address environmental and waste management aspects; 2. The inventory manual lacks good housekeeping standards like 5S; 3. Staff and laborers lack training on hazardous waste handling and emergency response; 4. No systematic recording of waste and safety data.	1. Update warehouse management policy to include environmental protection and waste management; 2. Incorporate 5S and other housekeeping practices into inventory procedures; 3. Provide regular training on safety, emergency preparedness, and hazardous waste management; 4. Develop standardized forms and logs for tracking waste, incidents, and environmental activities; 5. Conduct periodic audits and continuous improvement.	Procurement Division (PD)	2026
Section/Division/Department: Procurement Division							
A	RoW Clearing for Transmission Lines						


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1	Clearing vegetation and preparing the right-of-way (RoW) corridor for transmission line installation and maintenance, ensuring safety and compliance.	O&M Manual , Safety Rules , OHS Policy, Risk Register, Emergency Response Plan, ERA Safety Code, Grid Code, Safety Checklist	1. Excessive deforestation causing habitat loss and biodiversity impacts; 2. Electrical hazards to workers and public; 3. Risk of damage to third-party properties during clearing; 4. Potential disruption to local communities and ecosystems.	1. No formal environmental risk assessment method for RoW clearing; 2. OHS policies not updated regularly; 3. No SOP for compensation or management of public/property damage.	1. Develop and implement formal environmental risk evaluation and prioritization methods; 2. Regularly update OHS policies to reflect current risks; 3. Establish SOPs for compensation and management of third-party damages; 4. Train staff on safety and environmental protection during clearing.	TD	1 year
B Repair and Maintenance of Transmission Lines and Substations							
1	Routine and emergency repair works on transmission lines and substations, including inspections, fault rectification, and maintenance activities.	O&M Manual , Safety Rules , OHS Policy, Risk Register, SSR-2022 , Waste Management , Grid Code , Labour Laws, Emergency Response Plan, ERA Safety Code, ISO Audit Work Plan, ISO Audit Work Plan, ISO/IMS/BPC/PR/HIRA/2023, BPC Safety Rules May 2021, Safety Management System	1. Risk of fatal and non-fatal accidents due to inadequate risk assessment; 2. Environmental pollution from waste, spills, or emissions; 3. Labor risks, especially for third-party workers; 4. Overloading of workers leading to fatigue and safety risks; 5. Oil/chemical spills during fault rectification; 6. E-waste from retired assets (transformers/insulators); 7. Avifauna electrocution during line patrols; 8. Contractor labor violations during major maintenance.	1. Risk assessments lack detailed severity and frequency analysis; 2. No labor risk assessment for third-party workers; 3. No formal environmental risk evaluation; 4. Overtime and work hours not monitored; 5. No activity-specific HIRAs for repairs/inspections; 6. No decommissioning protocols; 7. Weak contractor E&S oversight	1. Conduct detailed risk severity and frequency analyses; 2. Review and monitor employment records for labor risks; 3. Establish structured environmental risk assessments; 4. Define fixed working hours and overtime compensation policies; 5. Enhance training and monitoring of labor and environmental compliance; 6. Implement quarterly activity-specific HIRAs (ISO/PR/HIRA/2023) for fault repairs, inspections, contractor works; 7. Quarterly contractor E&S audits with mandatory ESMPs; 8. Develop asset retirement SOPs for transformers/conductors	Risk Focal Person, HR, Environment Section, Transmission Department	3-6 months
C Realignment of Transmission Lines							

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1	Adjusting transmission line routes to optimize performance or accommodate land use changes, including environmental and social impact management.	O&M Manual	1. Habitat disturbance and biodiversity loss due to new or changed RoW.; 2. Land acquisition and displacement causing community opposition and protests.	1. No formal documentation or process for habitat and biodiversity damage; 2. No SOP for land compensation and resettlement.	1. Commission Environmental Impact Assessments (EIA) to evaluate habitat and biodiversity impacts; 2. Develop biodiversity mitigation and restoration plans; 3. Create comprehensive SOPs for land acquisition and compensation; 4. Engage affected communities early and transparently.	Environment Section, Section Manager, Legal, Department	4-6 months
D Transmission and Substation Upgrades & Retrofits							
1	Upgrading or retrofitting existing transmission lines and substations to improve capacity, reliability, or compliance with standards.	O&M Manual	1. Habitat disruption from construction activities; 2. Increased emissions and pollution; 3. Noise and air pollution affecting nearby communities; 4. Waste generation and disposal challenges; 5. Temporary outages potentially disrupting services.	1. Existing documents are outdated or not regularly revised; 2. Limited mitigation measures for emissions, noise, and waste; 3. No formal outage management communication plan.	1. Regularly update and revise operational documents to reflect current standards; 2. Implement mitigation measures for emissions, noise, and waste; 3. Develop and communicate outage management plans to minimize service disruption; 4. Monitor environmental and social impacts during upgrades.	TD	1 year
E Asset Decommissioning & Disposal							
1	Retirement/disposal of old TL/substation assets (transformers, conductors)	O&M Manual , Waste SOP , Inventory Management Manual	Hazardous waste (PCB oils), illegal dumping, soil/water contamination	No lifecycle protocols/SOPs	1. HIRA per ISO/PR/HIRA/2023; 2. Recycling partnerships; 3. Annual audits.	EGSS, TD, Procurement	1 year
2	Asset Retirement & Decommissioning	Environment Policy , Asset Management Policy , Waste Management SOP , Spill Response SOP	1. Soil/water contamination from oil leaks (PCBs); 2. E-waste accumulation (meters/panels); 3. Occupational hazards (falls/electrocution).	The current manual focuses on construction/operation; dismantling risks are not explicitly linked to SOPs.	1. Conduct site-specific HIRA before dismantling; 2. Implement secondary containment for oil-filled equipment; 3. Audit disposal via authorized recyclers.	Project Manager / Site Engineer; EGSS	End of Asset Useful Life / Decommissioning phase

Environment and Social Management System

3	Dismantling & Site Restoration	<p>ISO/IMS/BPC/PR/HIRA/2023</p> <p> Procedure for HIRA.pdf , SOP for Voltage Hazard Allowance (VHA), Stakeholder Engagement Policy  Stakeholder Engagement Policy fo</p>	<p>1.Structural collapse of old towers; 2. Soil erosion post-removal; 3. Community safety at work sites.</p>	<p>Lack of formal site restoration checklists post-asset removal.</p>	<p>1.Mandatory use of certified PPE and LOTO protocols; 2. Site grading and re-vegetation using native species; 3. Public notification of heavy vehicle movement.</p>	<p>Contractor, Site Engineer, EGSS</p>	<p>Within 3 months of decommissioning completion</p>
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5. Management Program

5.1 Environmental, Social, and Health & Safety (ESHS) Framework

This section outlines the typical stages of an ESMS framework, which must be implemented within the Company and applied to its services. An effective ESMS requires addressing E&S matters throughout all project phases, including conceptualization, planning and scheduling, contractor and supplier selection, mobilization and construction, operations, and decommissioning.

At the pre-construction phase and annually thereafter, performance objectives and targets will be established to minimize or mitigate the environmental and social impacts, as well as any identified OHS hazards and risks detailed in Section 4. These efforts will build upon existing measures in Management Plans or SOPs.

The next stage will involve detailed E&S studies and an improvement process to update or develop new Management Plans aimed at mitigating specific impacts and achieving performance improvements. Progress on these improvement actions will be monitored as outlined in Section 8, with final review and approval conducted as part of the management review process also described in Section 8.

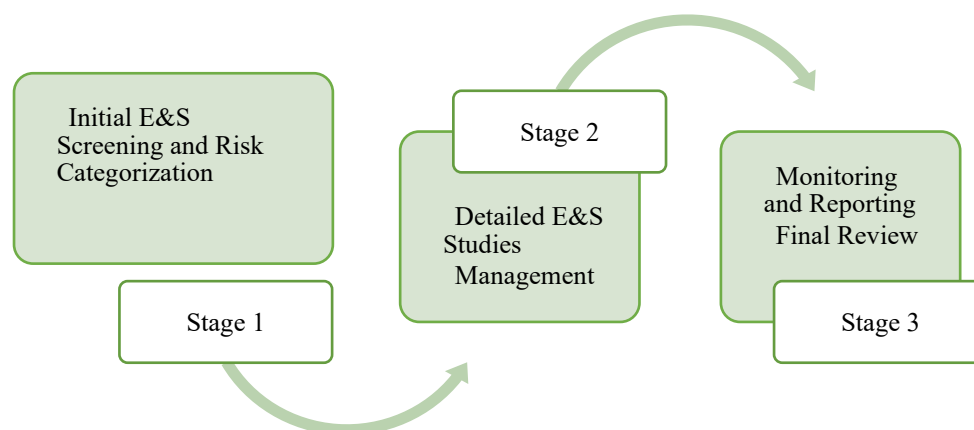


Figure 4. ESMS Framework

Though an ESMP can have multiple formats depending on the potential magnitude of the project's impact, it should provide measures adequate to address impacts identified in the Impact assessment process. BPC will develop ESMPs that are able to cover the following:

- Result of impact analysis;

- Required mitigation measures that must be implemented;
- Measure to enhance positive impact, where possible;
- Performance indicator;
- Estimated timeline to implement the mitigation plan;
- Monitoring and evaluation plan (with schedule);
- Resources to implement the mitigation measures;
- Roles and responsibilities in ESMP implementation; and
- Requirement to conduct regular reviews of the ESMP to determine whether the ESMP should be amended or not, and by whom the changes (or no changes) should be made.

Different types of projects will have distinct impacts that need to be managed based on the magnitude of their risks. High-risk and substantial-risk projects will require additional management plans, which will be grouped within a compendium of plans under the ESMP, as per the specific E&S standards (ESS).

5.2 Project Inception & Preliminary Risk Screening

5.2.1 Initial Project Screening

Following the project development decision, project inception and risk assessment are initiated. The planning and scheduling of the project vary based on its nature and scale, with risk and impact identification processes tailored accordingly. These processes range from single-stage screening to multi-stage risk and impact identification.

BPC will conduct preliminary screening to identify environmental and social impacts for new projects. This initial assessment will provisionally categorize the project, focusing on high-level issues and risks, including project location, environmental interactions, sensitive receptors, indigenous peoples, cultural heritage, labor issues, and reputational risks. This screening may be a part of the reconnaissance or walk-on survey, supported by members from the Environment, GIS, and Survey Sections, along with technicians from TOMS/TOMU.

Projects will be categorized based on the E&S categorization provided by the Department of Environment and Climate Change (DoECC) and IFC PS. This categorization will guide the additional assessments required to substantiate and support the assigned category.

It will also inform the development of project-specific impact mitigation plans and overall E&S compliance monitoring.

Tables 11 and 12 outline the project categories and the recommended studies based on the categorization.

Table 11. Project categorization and the recommended studies based on categorization (DoECC)

Categorization	Recommended Studies	Applicable SOPs/OCs/Policies (Cross-Reference)
Green		
<p>Projects are exempted from the Environmental Clearance (EC) requirement. However, the exempted activities must obtain approvals/clearances/development consent from the concerned agencies as required under relevant existing legislations.</p>	<p>Approval/clearances/development consent from the concerned agencies.</p>	<p>Environmental Policy Stakeholder Engagement Policy Occupation Health and Safety Policy Asset Management Policy Environmental Clearance Application Checklist Forestry Clearance Application SOP Reconnaissance Survey for Transmission Line SOP Transmission Line SOP ISO/IMS/BPC/PR/HIRA/2023 (Hazard Identification) Waste Management SOP ISO/IMS/BPC/PR/EAI/2023 (Env. Aspect Impact) ISO/IMS/BPC/PR/PPC/2023 (Participation & Consultation) ISO/IMS/BPC/PR/OCP/2023 (Operational Control)</p>
Blue		
<p>Projects require EC but at Initial Environmental Examination (IEE) level</p>	<p>IEE</p>	<p>Occupation Health and Safety Policy Asset Management Policy Environmental Clearance Application Checklist Forestry Clearance Application SOP Reconnaissance Survey for Transmission Line SOP</p>



		ISO/IMS/BPC/PR/HIRA/2023 (Hazard Identification) Waste Management SOP Activity-specific OCPs (e.g., Underground Cable Jointing)
Red		
Projects require EC at Environmental Impact Assessment (EIA) level	Environmental and Social Impact Assessment (ESIA)	BPC Customer Service Charter 2020 Fleet Management Policy ISO/IMS/BPC/PR/HPC/2023 (Handling Complaints) SOP for Call Center SOP for Payment of Voltage Hazard Allowance (VHA) General Operational Control Procedures

Table 12. Project categorization and the recommended studies based on categorization (IFC)

Categorization	Recommended Studies
Category A	
Business activities with potential significant adverse environmental or social risks and/or impacts that are diverse, irreversible, or unprecedented	Full Scale ESIA; and any other specialized studies (such as Critical Habitat Assessment, Resettlement Action Plan, Livelihood Restoration Action Plan, Detailed Assessment for Indigenous Community) as applicable.
Category B	
Business activities with potential limited adverse environmental or social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures.	Full Scale ESIA
Category C	
Business activities with minimal or no adverse environmental or social risks and/or impacts.	Internal E&S checklists; and Management Procedural Guidelines and EHS Plan specific to the Plant and stage of project lifecycle

5.2.2 Detailed E&S Studies

Upon completing the screening exercise, BPC may either engage a third party with the necessary technical expertise and experience or conduct subsequent E&S Risk Assessment studies, such as ESIA and Environmental and Social Due Diligence (ESDD), in-house. The project categorization following these detailed studies may differ from the initial provisional categorization.

Based on the outcomes of the detailed E&S assessment, BPC may revisit its project development decision. For category A and B projects (as per IFC standards) and blue and red projects (as per DoECC classifications), the review process will be guided by the ESMP and any additional thematic studies.

It is important to note that higher assessment parameters must be applied for Category A and Red projects, requiring more stringent scrutiny by senior management during the decision-making process.

5.3 Project Phases

The construction phase of the project typically involves mobilizing contractors, subcontractors, and their workforce for various construction activities, including setting up the project office, workers' camps, and construction campsite, as well as providing basic utilities for onsite personnel. A key activity during this phase is ensuring that all necessary regulatory requirements and compliances are secured before site mobilization. This phase also includes finalizing the construction design, schedule, methodology, and integration of various activities.

During the Operation & Maintenance (O&M) phase, the Transmission Operation and Maintenance Division and the Construction Division will handle all operational functions. At the plant level, ESMS aspects during the O&M phase will be managed by the Project Manager (PM), supported by the Environment, GIS, and Survey Section, under the oversight of Management.

5.4 Implementation of Environmental & Social (E&S) Management Plan

5.4.1 Contractor Management

BPC engages contractors for a wide range of services, including construction, procurement, operations, routine and major maintenance, transportation, and labor. To ensure effective management of these engagements, BPC will:

- Apply specific and generic contractor/supplier selection criteria aligned with E&S compliance management requirements.
- Establish and implement management measures for:
 - Construction health and safety;
 - Labor accommodation;
 - Resource efficiency;
 - Emergency response; and
 - Capacity requirements.
- Develop and enforce criteria for contractor performance evaluation.

Contractor and service provider selection at BPC is conducted at the corporate level. Existing suppliers and contractors are graded based on factors such as price, service quality, and timeliness. When necessary, existing suppliers and contractors may be considered, and a Request for Proposal (RFP) will be issued.

BPC has created a Contractor Selection Checklist that includes selection criteria and safeguards to be integrated into agreements with contractors. Post-selection, key aspects such as Health, Safety, and Environment (HSE) and labor compliance are explicitly outlined in the contract agreements and Terms of Reference (ToR), with clearly defined guidelines and timelines for action item completion.

5.4.1.1 Enforcement and Non-Compliance Mechanisms

To ensure consistent application of ESMS requirements, BPC shall employ a tiered enforcement approach. Non-compliance identified during site inspections, audits, or through the Grievance Redressal Mechanism (GRM) will trigger the following actions:



Table 13. Tiered Enforcement Levels

Severity Level	Definition	Enforcement Action
Level 1: Minor	Isolated incident with no immediate safety or environmental threat (e.g., improper PPE use, minor littering).	Verbal Warning & Instruction: Immediate on-site correction required. Recorded in the daily site log.
Level 2: Moderate	Repeated minor offenses or a single breach with potential risk (e.g., failure to provide drip trays, inadequate site fencing).	Formal Non-Compliance Report (NCR): Written notice issued to the Contractor. Requires a Corrective Action Plan (CAP) within 48 hours.
Level 3: Major	Intentional breach of safety/environmental protocols or high-risk activity (e.g., illegal tree felling, oil spill into water, working without HIRA).	Stop Work Order: Immediate cessation of specific activity until the risk is mitigated and a formal safety/environment audit is cleared.
Level 4: Critical	Criminal negligence, fatality, or irreversible environmental damage.	Contract Termination & Blacklisting: Legal action and permanent debarment from future BPC tenders.

1. Financial & Contractual Penalties

BPC shall utilize the following enforcement tools to ensure compliance:

- Performance Retentions: A percentage of monthly payments (typically 5-10%) may be withheld if the Contractor fails to close out open Non-Compliance Reports (NCRs) within the stipulated timeline.
- Direct Penalties (Liquidated Damages): Specific fines for environmental or social breaches (e.g., fixed fines per illegal tree cut or per day of delayed waste removal) as specified in the national regulations.
- Vendor Performance Management System (VPMS): All E&S non-compliances will be scored. Low scores will lead to the "Disqualified" status in the VPMS, preventing the contractor from participating in future BPC bids.

2. Reporting and Traceability

- Correction Timeline: All Level 2 and Level 3 non-compliances must be rectified and verified by the BPC Environment or Site Engineer.

- Documentation: All warnings, NCRs, and stop-work orders must be filed in the Contractor E&S Performance File for end-of-project evaluation.

5.4.2 Procurement and Vendor Performance

BPC is committed to upholding the highest ethical standards in its procurement activities and has developed a Procurement Manual for Works and a [Vendor Performance Management System \(VPMS\)](#) to support this commitment. The Procurement Manual is based on the Royal Government of Bhutan's Procurement Rules and Regulations (2019) with strategic modifications to align with BPC's commercial and service-oriented goals. It aims to guide the procurement process in a fair and transparent manner, ensure equal opportunities for contractors in the awarding of works contracts, and achieve economy and efficiency in procurement practices.

The VPMS has been formulated to objectively evaluate supplier and manufacturer performance, ensuring that the best-performing vendors are retained and rewarded while minimizing subjective influences. It also provides a structured mechanism to terminate relationships with underperforming vendors, attract new suppliers to expand BPC's vendor base, and enhance end-user satisfaction by fostering fair competition and ensuring the timely provision of materials and after-sales services.


5.4.3 Inventory Management

Effective resource efficiency and management planning in both the construction and operational phases are crucial for BPC to foster sustainable growth while enhancing organizational efficiency and reducing costs. By prioritizing resource efficiency, BPC aims to minimize waste and pollution at the source, contributing to environmental sustainability. To support this goal, BPC has developed an Inventory Management Manual that outlines comprehensive guidelines for procuring and managing materials effectively.

This manual is designed to ensure proper inventory planning and control, maintain minimum inventory levels based on actual requirements, and establish standardized inventory records. Furthermore, it promotes a systematic approach to receiving, storing, issuing, and disposing of materials, while also categorizing inventories into critical spares, slow-moving items, and unserviceable goods.

5.4.3.1 Asset Retirement and Site Restoration

E&S Risk Management during Asset Retirement:

- Occupational Health & Safety: All dismantling activities must be preceded by a site-specific risk assessment as per *ISO/IMS/BPC/PR/HIRA/2023*  Procedure for HIRA.pdf . Key risks include falls from heights (poles/towers) and residual electrical energy.
- Hazardous Materials & Waste:
 - Transformer Oils: Must be tested for PCBs. Any drainage must follow the Spill Response SOP to prevent soil contamination.
 - E-Waste: Electronic components and meters must be segregated and disposed of through authorized recyclers as per the [Waste Management SOP](#).
- Community Health & Safety: Access to decommissioning sites must be restricted to prevent public injury. Heavy vehicle movement for debris removal must follow the Stakeholder Engagement Policy to notify local communities of traffic and noise.
- Site Restoration: Upon removal of assets, the site must be stabilized to prevent soil erosion. Any contaminated soil must be remediated, and the area should be re-vegetated using native species as per BPC's Environment Policy.




5.4.4 Environmental Monitoring

Environmental monitoring is essential for assessing the environmental conditions and trends at the project site, providing valuable data for reporting. BPC, in collaboration with the respective project contractors at each site, will monitor the projects to ensure compliance with applicable laws and regulations, while minimizing risks to the natural environment and safeguarding human health.

Monitoring will encompass both the construction and operation phases of the project. Regular tracking of critical environmental parameters is crucial to evaluate the environmental status throughout these phases. The collected data will serve as an early indicator of any deviations in environmental quality compared to baseline conditions, allowing for timely corrective actions to mitigate potential environmental impacts.

5.4.5 Occupational Health and Safety

Workers at all BPC project sites are potentially exposed to various occupational hazards, including physical, biochemical, biological, and psycho-social risks. It is essential to identify and control these risks. BPC has implemented minimum mandatory

requirements and procedures for hazard identification (document no. ISO/IMS/BPC/PR/HIRA/2023  Procedure for HIRA.pdf), operational control and management (document no. ISO/IMS/BPC/PR/OCP/2023  Procedure for Operational Control.pdf), and the reporting and investigation of incidents (document no. ISO/IMS/BPC/PR/INI/2023  Procedure for Incident Investigation.pdf) across all its sites.

Additionally, BPC has established an [Occupational Health & Safety Policy](#), a [Safety Management System](#), a [Safety Manual](#), and [Safety Rules](#). These frameworks are designed to help BPC identify OHS risks and hazards during both the construction and operation phases, ensuring effective management to minimize incidents and accidents.

For work to be assigned to a Contractor, the Project Management Unit (PMU), in coordination with the EG&SS Team and the relevant department/division, will develop the ToR containing requirements for the Construction ESMP(C-ESMP) and include the OSH management requirement and prevention/mitigation action recommendations for the Contractor. This developed ToR will be utilized in the project's contractor procurement process to ensure contractor bids are aligned with and fully incorporate the needs under the BPC OSH management system. Under the C-ESMP, the contractor will be required to develop an OSH plan that defines its roles and responsibilities to manage OSH aspects relevant to its scope of work and proportionate to the potential risk identified. It will include regular reviews and reporting requirements and details on how parallel operations will ensure mutual protections.

5.4.6 Hazard Identification and Management

HIRA is a tool used to evaluate potential hazards based on their likelihood of occurrence and the severity of their impact. This procedure outlines a systematic and objective approach for assessing health and safety hazards and associated risks within BPC workplaces, with the goal of eliminating or mitigating risks to individuals as much as practicable. It aligns with BPC's IMS Policy. Conducting risk assessments and documenting the process helps managers make informed health and safety decisions. Additionally, it enables BPC to demonstrate that it has identified foreseeable OHS risks and taken appropriate actions to ensure a safe working environment for employees and others involved.

5.4.7 Emergency Preparedness and Response

The EPRP will be maintained by BPC across all its operations and developed in collaboration with relevant stakeholders, including contractors, facility operators (such as residential areas and labor camps), and district authorities. This plan will focus on identifying accident- and emergency-prone areas, assessing communities and individuals potentially affected, establishing response procedures, providing necessary equipment and resources, assigning responsibilities, and ensuring effective communication. Regular training and mock drills will be conducted to ensure readiness and effective implementation of emergency response measures.

In the event of an emergency at any project site, the OHS Committee will take the lead, supported by the Emergency Response Team. All emergencies will be promptly reported to the OHS Committee, with subsequent notification to the management. These measures align with the broader EPRP framework, which also includes conducting periodic evaluations, mock drills, and the implementation of corrective actions as part of the

“Procedure for EHS Nonconformity, Corrective and Preventive Action” Through these comprehensive efforts, BPC ensures the effectiveness of its emergency response systems while minimizing the potential impact on communities and the environment.



Procedure for EHS
Nonconformity Corre:

5.4.8 Labor Accommodation and Issues

BPC is responsible for managing workforce-related risks and ensuring that workers engaged by third parties are provided with safe and secure accommodation. BPC will ensure that proposed projects can advance the social and economic well-being of project workers through employment generation and that project workers play a major role in delivering quality projects. It will adhere to the [Labour Act of Bhutan \(2007\)](#) and [Regulations on Working Conditions \(2022\)](#) as the primary regulatory framework for workers, ensuring non-discrimination in employment and remuneration, setting minimum wage levels, and guaranteeing freedom of association and collective bargaining. It will ensure the project only employs workers with a contract and provide for public holidays, annual leave, and maternity/paternity leave. It mandates compensation for workplace injuries, disabilities, and deaths, and outlines conditions for dismissal. Similarly, [Regulation on Occupational Health, Safety, and Welfare, 2022](#), issued

by the Department of Labour, Ministry of Labour and Human Resources, as well as the Worker's Accommodation Standards set by the IFC.

The following will form the core of a labour management procedure:

- An Occupational Safety and Health (OSH) Policy will be developed and implemented. Infrastructure projects, requiring heavy physical labour must implement proper safety measures, such as providing and enforcing the use of personal protective equipment (PPE). The policy must ensure procedures to ensure workers are aware of workplace hazards and the measures to mitigate them, and how the law will be enforced.
- A labour management procedure will be developed that ensures that BPC and its Contractors do not use non-standard and ad-hoc labour practices such as those provided by informal labour brokers.
- The Labour Management Procedure will detail a robust grievance mechanism for all workers to address work-related concerns, ensuring workers are informed of the mechanism and protected against reprisals.
- The Labour Management Procedure will provide active measures (including contracts, training and monitoring) to ensure child labour and bonded labour practices are excluded from all BPC projects, including those under contractors. The management plan will highlight risks and provide a mechanism to manage and prevent these practices.

The Labour Management Plan will include details to manage labour issues including the identification of manpower needs, requirement for screening and recruitment processes, terms and conditions of employment, codes of ethics in the workplace (including worker behavior), worker grievance redress mechanism, monitoring and reporting measures. These measures may need to be adapted to specific project groups including those directly hired by BPC for the Project, workers hired by third-party (such as the contractor, the subcontractor, the supplier, the consultant, etc.), or workers from the community if applicable for the project. Third-party partners may be required to add more detail to the management plan in their own specific contractor's Labour Management Plan for their scope of work/service to be consistent with the Project Labour Management Plan.

5.4.9 Resource Conservation and Pollution Prevention

BPC will ensure that proposed projects will follow the [National Environment Protection Act of Bhutan \(2007\)](#) and [Extended Producer Responsibility \(EPR\) Regulations \(2020\)](#) so that E&S actions and impacts don't generate physical, biological and/or chemical pollution to air, water, and soil. Further to these laws, the ESMP will ensure the project does not consume finite resources at levels that may threaten people, the environment, and the ecosystem services. Technical and feasible measures shall be provided to improve resource conservation and minimize resource use intensity.

BPC aims to adopt a circular economy approach by focusing on resource conservation, pollution prevention, and a precautionary principle where users bear costs and polluters are responsible for rectifying environmental harm. As energy generation, transmission and distribution drive BPC's growth, it seeks a greener and more inclusive model to ensure sustainability. By enhancing resource efficiency and strengthening pollution prevention efforts, BPC seeks to reduce resource dependency and minimize environmental impact. The goal is to transition toward a resource-conscious approach but safeguards the needs of future generations. To achieve this, BPC will implement various strategic plans, including but not limited to:

- Resource Conservation, Improvement and Management plan that will minimize the intensity of the project's resource use, and ensure efficient consumption of energy, water, soil, and raw materials, as well as other resources through the application of a circular economy and/or low carbon approaches.
- Waste Management Plan will cover both hazardous and non-hazardous wastes. It will manage the anticipated waste produced after the conclusion of the circular economy and waste minimization actions outlined in the resource management plan. The Waste Management Plan will then cover actions that focus on reduction, recycling, reuse and recovery of waste. Residual waste will be treated, destroyed or disposed of in an environmentally sound and safe manner while controlling emissions, discharges, and residues. If there is hazardous waste present, then the Waste Management Plan will devote a separate section for handling and disposal under international best practice, using licensed contractors and disposal sites. The required resource conservation and pollution prevention plans also will

include specific monitoring and reporting measures developed in conjunction with Development Partners and following national regulations.



5.4.10 Community Health and Safety Management


BPC will assess community health and safety risks and hazards throughout the project lifecycle and implement mitigation measures to effectively manage these risks, minimizing the potential for incidents and accidents.

Management Plans will also need to consider measures to prevent any misconduct when security forces are used in the safeguarding of project workers and properties, to minimize risks to community safety and security. This plan may also include the following:

- Traffic management plan that addresses traffic and road safety risks.
- Sexual exploitation and abuse/sexual harassment (SEA/SH) plan.

Table 14. Community Risk and Control Matrix

Community Risk/ Activity	Potential impact on Public	Operational Controls (SOPs/ OCPs)	Communication & Emergency Protocol
Live-Line Works / Electrification	Accidental contact with live wires; induction risks.	SOP for Voltage Hazard Allowance (VHA) ;	Public signage in local language. Notification of works via local authorities/media.
Outage-Related Hazards	Risks to sensitive facilities (hospitals/mills); safety risks during unexpected blackouts.	O&M Manual (Grid stability protocols)	Outage Communication Procedure: Minimum 48-hour notice for planned outages. Emergency helpline (Call Center SOP).
Public Access Disruptions	Traffic hazards; falling debris; open trenches in public walkways.	SOP for Underground Cable Jointing Waste Management SOP (Debris clearing)	Physical barriers and night-reflectors. Flagmen for traffic control during stringing.
Hazardous Materials	Oil spills from transformers; exposure to chemicals.	Spill Response SOP ISO/IMS/BPC/PR/EAI/202  3	Immediate site cordoning. Incident reporting as per ISO/IMS/BPC/PR/INI/202  3

In the event of a community-level emergency (e.g., snapped conductor or transformer fire), the ISO/IMS/BPC/PR/EPR/2023  Procedure for Emergency Preparedness (Emergency Preparedness and Response Plan) shall be triggered. This includes immediate isolation of the fault, coordination with local emergency services, and a post-incident community safety audit to prevent recurrence.

Consistent with IFC PS 4, BPC will implement a "Proactive Safety Disclosure" approach. This involves:

- Safety Awareness Campaigns: Periodic education for communities living near high-voltage corridors regarding the dangers of "encroachment" and "unauthorized climbing."
- Disclosure of Residual Risks: Informing communities of any potential risks that may persist after mitigation measures are in place.
- Grievance Linkage: Ensuring the External GRM (Section 5.4.17) is visible at all construction sites specifically for safety concerns.

5.4.11 Land Acquisition, Involuntary Resettlement and Access Restriction

The acquisition of land for BPC projects may result in various impacts associated with involuntary resettlement. This often happens when people are displaced from their homes or land to accommodate the construction of power project components, such as power plants, transmission lines, access roads, and other infrastructure required for energy-related developments. Involuntary resettlement refers to displacement that occurs as a direct result of project-related land acquisition or restriction on land use. It includes: (a) physical displacement (i.e. physical relocation, loss of residence or loss of shelter); and/or (b) economic displacement (i.e. loss of assets, or access to assets, that leads to the loss of income sources or means of livelihood). Resettlement is involuntary when affected individuals or communities do not have the right to refuse such displacement.

Key objectives of the Land Acquisition and Resettlement Principles of BPC:

- Balance the need for infrastructure development with the protection and well-being of affected communities, fostering sustainable and equitable growth in BPC's energy sector.

- Ensure that land acquisition is carried out in a fair, transparent, and legally compliant manner, with due consideration given to the rights and needs of affected individuals and communities.
- Avoid economic and physical displacement or, when unavoidable, minimize such displacement by considering feasible alternative project designs and sites. Mitigate unavoidable adverse social and economic risks and impacts from LA/LUR by (i) providing timely compensation for loss of assets at full replacement cost, (ii) assisting project-affected persons in their efforts to improve or at least restore their livelihoods and standards of living in real terms relative to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher and (iii) Ensuring that displaced individuals, who may not have legal ownership or rights to the land they occupy, receive appropriate compensation and resettlement packages, in line with BPC's past practices, national and international best practices.
- Ensure that resettlement is designed, planned and implemented with the appropriate disclosure of information to those affected along with their consultation and informed participation.
- Provide displaced people with access to grievance mechanisms.

BPC will adopt the following principles for each project or subproject that is deemed to have involuntary resettlement impacts:

1. Social Impact Assessment and Stakeholder Engagement

- Assess potential adverse effects on communities during project identification, conducting thorough analyses to minimize risks of physical and socio-economic displacement.
- Conduct social impact assessments to evaluate the effects of the project on affected communities, including vulnerable groups.
- Engage in inclusive dialogue with affected and vulnerable groups (e.g., women, indigenous peoples, disabled individuals) to ensure their active participation in the resettlement process, incorporating cultural appropriateness in the execution of resettlement activities.

2. Risk Mitigation and Planning for Resettlement

- Develop a comprehensive Resettlement and Rehabilitation Plan to ensure displaced individuals and families retain or improve their pre-project living conditions. Provide compensation and support timely, ensuring that compensation, resettlement, and rehabilitation provisions are in place ahead of physical or economic displacement.
 - Provide compensation and support timely, ensuring that compensation, resettlement, and rehabilitation provisions are in place ahead of physical or economic displacement.
3. Compensation and Livelihood Restoration
- Ensure fair and transparent compensation processes following the national regulations.
4. Gender Equality and Vulnerable Group Considerations
- Ensure that women are fully involved in the resettlement process, with clear recognition as beneficiaries of compensation and resettlement assistance.
 - Design targeted communication strategies to engage vulnerable groups, including those without legal land ownership, ensuring they receive appropriate support and compensation during project implementation.
5. Monitoring, Transparency, and Grievance Mechanism
- Implement transparent processes in land acquisition, compensation, and resettlement activities to ensure fairness and accountability.
 - Establish an accessible grievance mechanism to address and resolve complaints from affected individuals.
 - Set up an effective monitoring and evaluation system to track the outcomes of resettlement and compensation efforts, ensuring objectives are met and impacts are minimized.

BPC will consider feasible alternative project locations and designs to avoid or minimize land acquisition or restrictions on land use, especially where this would result in physical or economic displacement while balancing environmental, social, and financial costs and benefits, and paying particular attention to gender impacts and impacts on the poor and vulnerable. Where this cannot occur, there will be a need for a land acquisition and resettlement action plan that may include specific measures for Project Affected Peoples (PAPs) including Indigenous people and vulnerable communities.

At the early stage of the E&S assessment, the concerned officials of BPC will screen potential physical and economic displacement. The screening findings will guide the process for conducting a resettlement survey and preparing the resettlement plan. If resettlement risks are identified, a Detailed Measurement Survey (DMS) will be carried out to document all losses, including assets, business operations, and access to private assets, as well as natural and cultural resources and services. This inventory will also include the measurement and enumeration of project affected land, structures, trees, crops, and other related properties including visual evidence. GIS coordinates will be assigned to all potentially impacted land parcels and assets. On-site verification of the detailed surveys of affected land will be conducted, including reviews of land use and ownership arrangements.



BPC will conduct a socioeconomic baseline survey for all relevant operations to identify all Project-Affected Persons (PAPs) who will be physically or economically displaced and are eligible for compensation and/or assistance. The census shall cover the total population of PAPs and include an inventory of all losses (assets, business, access to natural or cultural resources or services, etc.). The socio-economic baseline survey will include the following at minimum:

- The current socioeconomic profile of the PAPs. The concerned project's Social Team will ensure that the profile write-up provides information affecting women as well as other vulnerable groups and will disaggregate the data by gender, caste, ethnicity, disability and income.
- An assessment of vulnerability and the need for special arrangements to be made; and degrees, types and nature of impacts.

A Land Acquisition and Resettlement Action Plan (LARAP) or equivalent needs to be developed and implemented in line with this ESMS and/ or relevant standards of the financing DP including a plan for adaptive management, as needed. In case of economic displacement, a Livelihood Restoration Plan (LRP) or equivalent will be developed to mitigate adverse economic impacts on displaced persons and/or communities. The focus of the LRP will be to improve, or at least restore, livelihoods of affected persons. The LRP can be devised as a standalone document or incorporated in the LARAP in cases where the project leads to both physical and economic displacement. The LARAP & LRP or equivalent will establish the entitlements of affected persons and/or communities agreed

upon with the affected community/persons or their representatives and ensure these are provided in a transparent, consistent, and equitable manner. Affected communities/households who may not be physically affected but who are economically displaced (defined as loss of assets and/or means of livelihood) will be considered in the Livelihood Restoration Plan or equivalent. They will be provided with targeted assistance and transitional support to at least restore their livelihoods. The transitional support can consist of cash, job opportunities, training, legal assistance or other forms of support. The modes of support will be determined in consultation with the PAPs.

5.4.12 Incident Investigation Reporting

BPC will conduct an investigation into all work-related incidents in accordance with the 'Incident Investigation' procedure (doc no. ISO/IMS/BPC/PR/INI/2023  Procedure for Incident Investigation). The investigation will aim to identify the root causes and determine appropriate corrective actions or controls, as outlined in the 'Corrective and Preventive Actions' procedure (doc no. ISO/IMS/BPC/PR/CPA/2023  Procedure for Corrective and Preventive), to prevent recurrence of the incident.

5.4.13 Stakeholder Engagement Plan & Policy

A stakeholder is defined as any individual, group, or organization with a direct or indirect interest in a project or organization, as their actions, objectives, and policies can either influence or be influenced by the project. Stakeholders differ in their levels of interest, influence, and control over the project. Primary Stakeholders are those who have a direct impact on, or are directly affected by, the project, while Secondary Stakeholders are those who are impacted or influence the project indirectly.

The Stakeholder Engagement Policy and Stakeholder Engagement Plan will govern stakeholder interactions throughout BPC's project lifecycles, reflecting the organization's commitment to its stakeholders and ensuring compliance with IFC PS requirements.

5.4.14 Biodiversity Conservation and Management

Biological diversity is a critical resource upon which families, communities, nations, and future generations rely. It forms the connection between all organisms on Earth, creating an interdependent ecosystem where every species plays a role. The loss of biodiversity can lead to the depletion of natural resources, which are essential for economic

prosperity and human development. This is particularly significant in developing countries like Bhutan, where livelihoods are closely tied to natural resources.

Any potential impact on biodiversity will be assessed in the impact assessment process of the project. Biodiversity impact assessment shall cover assessment on ecosystems affected, species affected, ecosystem services affected, protection status, baseline threats (e.g., habitat loss, degradation, fragmentation), and should include analysis on invasive alien species, nutrient loading, overexploitation, etc.

Biodiversity impact assessment will give comprehensive information related to the impact and risk, mitigation effort that need to be planned, and to ensure to avoid or minimize the impact as far as possible. In managing the risk and impact on biodiversity, the following mitigation hierarchy shall be applied: avoid – minimize – restore/compensate – offset, from most desirable to least preferred strategy. At certain conditions identified in impact assessment (screening and/or scoping stage) an additional or more comprehensive studies may be required, for example, Critical Habitat Assessment (CHA) may be required if during the assessment, potential impact to area fitting the criteria of critical habitat is identified.

Where significant risks and adverse impacts on biodiversity have been identified from the impact assessment stage, a Biodiversity Management Plan (BMP) will be developed and implemented. Depending on the nature and scale of project risks and impacts, the BMP may be presented as a separate document that is still part of the Environmental and Social Management Plan (ESMP for the project). A BMP will provide details by which impact avoidance, mitigation, and offsetting measures that have been identified during the assessment process and/or required by permits and licenses shall be implemented. Biodiversity offset will be considered as a last resort of management action. Offset will be considered only if significant residual adverse impacts remain after all technically and financially feasible avoidance, minimization, and restoration measures have been considered.

5.4.15 Cultural Heritage

BPC abides by the Bhutanese Constitution which outlines the need to preserve, protect and promote the cultural heritage of the country. Furthermore, the EPA (2019) mandates that project proponents maintain an inventory of cultural heritage and declare

environmental protection areas including the need to prepare and maintain an inventory of objects, places, plants and animals of cultural heritage importance, including those listed in the World Heritage list.

BPC will make all possible efforts to avoid heritage sites, archaeological sites, historically significant places, and monuments by exploring all possible ways. When avoidance of cultural and religious heritage sites becomes impossible, BPC will consult with local communities to assess the impacts on both tangible and intangible cultural heritage. Possible mitigation measures will be included in the E&S assessment reports.

5.4.16 Internal Grievance Management

BPC provides an equitable platform for all employees, subcontracted maintenance crews, and third-party workers to register complaints and grievances. This ensures issues are addressed to a level acceptable to the aggrieved party, in accordance with Section 15.9 of the BPC [Service Rules and Regulations \(SRR\)](#). The internal GRM is designed to resolve complaints within the company and prevent minor labor issues from escalating into formal disputes. To ensure safety and confidentiality, provisions for submitting anonymous grievances are available to all workers. BPC commits to investigating these complaints thoroughly while protecting the whistleblower from any form of reprisal. Additionally, it aims to foster cooperation and build trust between employees and managers.

The grievance procedure will be developed in consultation with employees and written in clear, simple language, ensuring it is easy for all employees to understand and follow. The procedure will be reviewed periodically to maintain its effectiveness.

When a grievance arises, the aggrieved party must submit a written complaint, clearly identifying the other party involved, the location of the dispute, and the subject matter. The designated officer will acknowledge receipt of the complaint within two working days and initiate an investigation within five working days. The complaint will be addressed within ten working days from the commencement of the investigation.

If the grievance remains unresolved after following the workplace grievance procedures, the complainant will notify the Ministry of Labour and Human Resources, indicating the existence of a labor dispute.

5.4.17 External Grievance Management

The purpose of the External Grievance Redress Mechanism (GRM) is to provide external stakeholders with a platform to express their concerns, queries, and issues regarding the services provided. External stakeholders may submit grievances related to BPC’s power supply or services. While providing contact details is encouraged to facilitate feedback, the External GRM includes provisions for considering anonymous grievances. Stakeholders may submit a description of the grievance and the relief sought through dedicated anonymous channels (such as drop-boxes or secure web portals) as outlined in the 'Procedure for Handling Interested Parties' Complaints'

(ISO/IMS/BPC/PR/HPC/2023  Procedure for Handling customer cc).

BPC will engage with the community throughout the pre-construction, construction and O&M phases to address any grievances related to construction activities or project operations.

6. Organizational Capacity and Competency

6.1 Structure and Responsibility

The figure below illustrates BPC’s organizational structure.

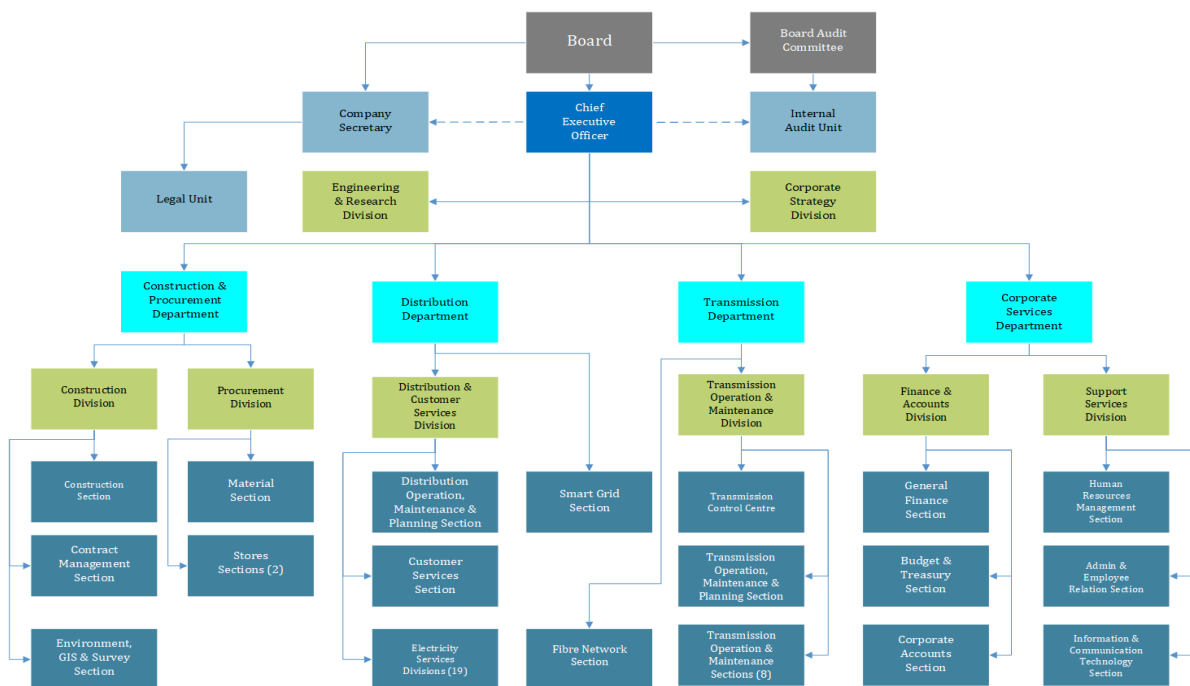


Figure 5. BPC Organogram



All BPC employees, contractors, subcontractor are individually and collectively responsible for:

- Working safely, within the guidelines and requirements established by this ESMS Plan, its supporting Management Plans, OCPs and SOPs;
- Supporting the environmental, social, and OHS policies established by BPC, in the day-to-day performance of their work;
- Notify their supervisors, the Engineers, Project Manager, DCSD, OHS Committee or the Environment, GIS, and Survey Section of any observed spills, equipment malfunctions, unsafe or unhealthy situations, improper environmental practices, worsening trends, or other issues that could represent nonconformance with the requirements this ESMS Plan, IMS manual, or its supporting Management Plans or SOPs.

Other specific responsibilities associated with the key positions noted in above organogram are summarized as follows:

Table 15. Roles, responsibilities and authorities

Hierarchy/Levels	Roles & Responsibility
Chief Executive Officer (CEO)	<ul style="list-style-type: none"> ● Overall accountability for ESMS and IMS implementation and operation
ESMS Committee	<ul style="list-style-type: none"> ● Periodic review of the E&S policies, procedures and management systems. ● Coordinate with relevant directorates, departments, subsidiary companies and projects in relation to E&S works. ● Oversee grievance redress mechanism and any investigation relating to breaches of E&S laws, regulations and standards and/or E&S policies, procedures and management systems. ● Act as GRM mechanism at central level and report back to the BPC management for further appeal. ● Report back to the BPC management in relation to systemic and strategic E&S issues which affect BPC’s activities. ● Monitor and supervise projects across project lifecycle (i.e. under development, construction, operations and abandonment) to ensure that E&S matters have been adequately considered. ● Ensure that BPC’s employees are appropriately trained in relation to E&S policies, procedures and management systems.

	<ul style="list-style-type: none"> ● Resolving any pertinent issues in relation to E&S matters in BPC's operations. ● Oversee the implementation of ESMS of the BPC operations and conduct annual review of the ESMS document in coordination with relevant departments
<p>Head of Services/Departments (HS/HoD)</p>	<ul style="list-style-type: none"> ● Ensure proper implementation of ESMS and IMS in their respective departments; ● Review objectives, targets and action plans identified for all offices under the department; ● Oversee implementation of ESMS relevant to training and capacity development of employees; ● Designing and imparting training and capacity development activities for employees; ● Participate in the management review meetings as a committee.
<p>Management Representative (MR)</p>	<ul style="list-style-type: none"> ● Establish, implement, maintain and document ESMS and IMS policy and processes; ● Organize management review meeting and report on ESMS & IMS performance status and the need for improvement, if any; ● Plan and conduct internal audits; ● Ensure compliance to statutory and regulatory requirements; ● Create awareness on ESMS and IMS policy and processes throughout BPC; ● Communicate the outcome of review meetings and audit findings ISO project team and all concerned offices and officials; ● Review implementation of timely corrective actions identified in review meetings and internal audit findings; ● Communicate with interested stakeholders relating to ESMS and IMS and meeting their requirements.
<p>Chief Manager/Sr. Divisional Managers/ Divisional Manager/ Project Manager (PM)</p>	<ul style="list-style-type: none"> ● Implement applicable ESMS and IMS processes and procedures complying to the statutory/regulatory and IMS requirements; ● Monitor and evaluate the performance; ● Maintain effective communication with supervisors/In-charges/Unit heads and employees under their division; ● Report the performance to Head of Departments/RD/SEs; ● Participate in meetings pertaining to quality, environment and health & Safety aspects; ● Provide assistance to ESMS team during internal audits and evaluation of ESMS performance;



	<ul style="list-style-type: none"> ● Support Supervisor/Unit heads in executing the ESMS and IMS policy, procedures and processes; ● Ensure identified focal persons are adequately trained in the respective area such as safety, first aiders etc.
Supervisors/In-charges/Unit Heads	<ul style="list-style-type: none"> ● Ensure proper procedures, processes and instructions are followed; ● Maintain quality, safe work environment and safety at work sites; ● Ensure all workers are issued with appropriate PPE for their task; ● Ensure correct use of protective equipment and maintain properly; ● Immediately report any incidents, accidents and near misses in their work sites to Division Managers and identified focal persons; ● Timely provide report on performance to Divisions/Offices; ● Suitably supervise, train and instruct the staffs; ● Assist Divisions/Offices in identifying targets and action plans; ● Implement the corrective actions needed to rectify any non-conformance found through audits, inspections and assessment; ● Be proactive and bring forth ideas for improvement; ● Instruct Contractor and their workers on the site work requirements; ● Coordinate, monitor and evaluate the effectiveness of ESMS and IMS policies, objectives, targets and action plans drawn; ● Ensure compliance to quality, environment and OHSAS aspects; ● Coordinate with MR and carryout internal auditing, inspections and assessment on regular basis to ensure ESMS and IMS compliance; ● Conduct awareness programme for all employees within BPC and outside interested stakeholders; ● Reporting to MR on the findings from auditing, inspection and evaluation.
QAS, Environment, GIS & Survey Section, Risk Division	<ul style="list-style-type: none"> ● Create awareness relating to quality, environment and health & safety aspects to all employees of BPC; ● Ensure compliance to safety, environment, health & safety requirements of BPC ESMS and IMS policy; ● Responsible for supporting; ● Plan and conduct internal audits; ● Communicate to all offices in BPC regarding the requirements of ESMS and IMS, and any other statutory & regulatory requirements; ● Monitor, evaluate and assess the performance of set objectives and targets in line with the procedures set.
Environment, GIS & Survey Section	<ul style="list-style-type: none"> ● Primary focal point for overseeing E&S risk management activities and ensuring the quality control of E&S processes within BPC operations.


	<ul style="list-style-type: none"> ● Project screening and categorization ● Impact Assessment ● Support in mitigation and enhancement measures ● Involve in community consultation and stakeholder engagement ● Implementation of management plans ● E&S monitoring ● Establish database and management information system in relation to E&S works
Legal Department	<ul style="list-style-type: none"> ● Provide legal advice and support in developing E&S policy and procedures; ● Provide legal advice on land acquisition and clearances for BPC's operations; ● Guide on legal matters on environmental and social safeguards including ESMS implementation
Contractors	<ul style="list-style-type: none"> ● ESMS implementation; ● Employee health and safety, non-discrimination policy, gender issues, labor issues and all other relevant activities; ● Coordinate with ESMS committee and EG&SS; ● Report the progress on implementation of ESMS to the ESMS committee and EG&SS.
Departments/ Divisions/Sections	<ul style="list-style-type: none"> ● Carry out corresponding departmental actions and monitoring requirements as detailed in Section 4.
All employees	<ul style="list-style-type: none"> ● Comply with ESMS and IMS policy of BPC; ● Strictly follow safe work procedures, methods, instructions etc.; ● Use proper protective equipment at site; ● At all times maintain safe working environment; ● Maintain highest standards of workmanship and quality; ● To correctly store, use and maintain in serviceable condition, all equipment used at work sites; ● Report to Supervisor/In-charge for corrective action in case of risks & Hazards; ● Participate and co-operate during inspection, testing and auditing; ● Report non-conformities to Supervisor/In-charge for rectification so as to prevent reoccurrence; ● Immediately report all incidents, accidents and near misses to Supervisor/In-charge.

6.2 Organizational and Capacity Building needs

The BPC management will demonstrate its commitment by allocating resources devoted to E&S management and training. EG&SS will be mandated for all E&S works within the BPC by adding additional sectoral experts in its organogram. It will serve as BPC's policy formulation, compliance monitoring, and quality control on E&S issues and can also provide technical support to other relevant BPC directorates.

Strengthening capacity is a continuous process and EG&SS staff and other concerned officials will receive additional professional training and exposure to roll out the ESMS. Appropriate GRMs at central, provincial and field level will be established that provide concerned stakeholders with an accessible, transparent, fair and effective process for raising complaints about environmental or social harms caused by BPC operations. Corporate Strategy Division and Support Service Division will monitor occupational health and safety issues. The Gender Committee will ensure that BPC projects take account of gender and social inclusion issues. An E&S Risk management information system will also be established, maintained and operationalized by BPC.

6.3 Training and Capacity Building

BPC's workforce will receive appropriate training aligned with document ISO/IMS/BPC/PR/CTA/2023  Procedure for Competence, Training & Awareness." The competence of employees will be assessed by the relevant organizational authority to ensure they possess the necessary education, training, or experience to fulfill their roles and responsibilities.

If any deficiencies are identified, targeted programs, relevant training, awareness initiatives, or other corrective actions will be implemented to address these gaps.

Training and awareness programs will be provided for:

- Existing and new employees;
- Individuals whose work significantly impacts quality, the environment, and OH&S, including suppliers and contractors working on behalf of BPC;
- Personnel responsible for ensuring legal compliance;
- Individuals involved in the procurement of goods and services;
- Personnel responsible for emergency response actions; and

- ISO internal auditors.

Training needs and providers will be identified, and a comprehensive training calendar will be prepared. All training sessions will be conducted according to this calendar. Upon completion of training, the Support Services Division (SSD) will evaluate its effectiveness to ensure that the desired outcomes have been achieved.

Training related responsibility and authority are as given below:

Table 16. Training related responsibility and authority

S. N	Activity	Responsibility
1	Competence Identification	Concerned Unit/ Division/ Department Heads & ISO Team/ HR officials.
2	Competence gap analysis and training need identification	Concerned Unit/ Division/ Department Heads & ISO Team/ HR officials.
3	Establish training goals	Support Services Division
4	Conduct Training	Resource persons both internal and external
5	Evaluate the effectiveness of Training	Support Services Division (SSD)
6	Maintaining records of education, experience, training, and skills of all employees	Support Services Division (SSD)
7	Ensuring fulfillment of ESMS & IMS requirements by the contractors/contract employees by providing training or awareness programs	Concerned Unit/ Division/ Department Heads

6.3.1 Records

Trainings imparted will be documented. The record description and retention responsibility are as provided below:

Table 17. Training records

S. N	Record Description	Record Location/ Retention Responsibility	Minimum Retention Time
1	Competency Matrix	Concerned office	3 years
2	Training calendar	SSD	3 years
3	Training evaluation record	SSD	3 years
4	Training records	SSD	3 years

6.3.2 Training Matrix and Evaluation

To ensure the successful roll-out of the ESMS, BPC shall implement a role-specific training program as detailed in the matrix below:

Table 18. Training Matrix

Target Audience	Key Training Modules	Frequency
Senior Management	ESMS Governance, Legal Liabilities, and IFC Performance Standards Overview.	Annually
O&M Staff / Field Engineers	Technical SOPs, HIRA, Emergency Response (EPRP), and Waste Management.	Bi-annually
Contractors & Sub-contractors	Site Safety Induction, Contractor Enforcement Mechanisms, and Labor GRM.	Prior to Site Entry
E&S Officers	Advanced ESIA/IEE, Internal Auditing, and RCA/CAPA Methodologies.	Quarterly

All personnel are required to undergo Refresher Training every 12 to 24 months, or immediately following a significant change in national regulations or a 'Major' category incident. New employees and contractors must complete an ESMS Induction as part of their mandatory onboarding process before commencing field activities.





BPC shall conduct periodic evaluations to ensure training results in practical operationalization. Evaluation methods include:

- Post-Training Assessments: Written or practical tests immediately following the session.
- Field Competency Checks: Site supervisors will conduct 'Spot Checks' to verify if SOPs are being followed correctly in practice.
- Training Effectiveness Reviews: Annual audits comparing incident rates and non-compliance reports (NCRs) against training frequency to identify gaps in the curriculum.

7. Emergency Preparedness and Response

The EPRP applies to all phases of the projects and is designed to minimize the risk of accidents and emergency situations associated with construction activities, project structures, and operational practices. The EPRP will be developed in conjunction with

other management plans for specific construction, operation, and decommissioning/closure phases (refer to Section 5.4). It will be supported by several key SOPs, including:

- Doc. No: ISO/IMS/BPC/PR/CTA/2023  Procedure for Competence, Training & Awareness. – Procedure for Competence, Training & Awareness.
- Doc. No: ISO/IMS/BPC/PR/EPR/2023  Procedure for Emergency Preparedness and Response. – Procedure for Emergency Preparedness and Response.
- Doc. No: ISO/IMS/BPC/PR/INI/2023  Procedure for Incident Investigation. – Procedure for Incident Investigation.
- Doc. No: ISO/IMS/BPC/PR/HIRA/2023  Procedure for HIRA.pdf – Procedure for Hazard Identification and Risk Assessment.

Potential environmental incidents and emergencies will be identified during aspect-impact analyses, conducted as required. The OHS Committee will review these analyses to identify any new emergency response and planning requirements, which will be updated in the emergency response registers in alignment with the “Procedure for Emergency Preparedness and Response.” The committee will also prepare Emergency Action Plans (EAPs) for various scenarios, including earthquakes, fires, and flash floods, ensuring alignment with relevant national and international standards.

The Emergency Response Team (ERT) will be responsible for drafting EAPs for identified emergencies. Once prepared, the EAPs will be submitted to the relevant authority for review and approval. Upon approval, the EAPs will be communicated to all functional heads and employees by the ERT. The ERT will also organize mock drills, in which all employees must participate. The drills will be evaluated by the Safety Officer, who will submit a mock drill assessment report to management.

In addition to the emergency notification requirements detailed in the EPRP, all significant spills, releases, accidents, near-misses, or other emergencies for which BPC’s Project Activity is directly responsible will be documented, investigated, and addressed. Appropriate corrective and preventive actions will be taken in accordance with Section 8.3.1 and the “Procedure for EHS Nonconformity, Corrective and Preventive Action.”

7.1 Emergency Scenario and Equipment

Beyond general emergencies, BPC identifies the following credible hazard scenarios as priority risks:

- Technical: Snapped conductors, transformer fires, and SF6 gas leaks.
- Natural/Safety: Landslides affecting transmission lines and falls from heights.

To manage these, all operational sites must maintain:

- First aid kits, stretchers, and fire extinguishers (CO2/Dry Powder).
- Oil spill kits (absorbent pads and booms) for transformer maintenance sites.
- Certified PPE for rescuers (insulated gloves and arc-flash suits).

7.2 Emergency Response Team (ERT) and Coordination

ERT roles:

- Incident Controller: Directs the response and authorizes grid isolation.
- Safety Officer: Monitors site safety and secondary hazards.
- Communication Officer: Coordinates with external agencies.


External Coordination: BPC will coordinate Level 3 emergencies with national Fire Services and Disaster Management Authorities, ensuring technical grid isolation is managed by BPC experts while responders manage the site.

7.3 Training and Mock Drills


- Mock Drills: Specialized drills (fire, fall rescue, or spill) must be conducted quarterly at high-risk sites and annually at offices.
- Documentation: All drills must be logged, and 'Lessons Learned' reports must be used to update the EPRP annually.

8. Monitoring and Review



8.1 ESMS Records

Records produced from the implementation of the ESMS Plan and its supporting plans and procedures will be documented and maintained by the respective authorities in accordance with the “Procedure for Control of Document”  and “Procedure for



Control of Records  Procedure for Control of Records.” The Procedure for Control of Document outlines the guidelines for preparing, approving, distributing, revising, and updating documents, while the Procedure for Control of Records specifies the processes for identifying, maintaining, and disposing of records.

8.2 ESHS Monitoring: KPI's, Objectives & Targets

BPC will conduct periodic evaluations of ESHS performance in accordance with the “Procedure for Hazard Identification and Risk Assessment” and the “Procedure for Monitoring and Measurement of IMS Performance  Procedure for Performance Monitor.” The “Procedure for Corrective and Preventive Action  Procedure for Corrective and Prever” establishes a systematic process for analyzing nonconformities and implementing corrective actions to prevent their recurrence, as well as preventive actions to eliminate potential nonconformities.

The Procedure for Hazard Identification and Risk Assessment provides a structured and objective approach to identifying health and safety hazards, assessing associated risks at BPC workplaces, and determining methods to eliminate or mitigate these risks to the extent practicable. The Procedure for Monitoring and Measurement of IMS Performance outlines methods for monitoring and measuring key ESHS elements, enabling management to identify opportunities for improvement.

Designated personnel, as detailed in the Training Section, are responsible for collecting, analyzing, and determining performance levels at specified intervals. A summary of these analyses will be presented at the Management Review Meeting (MRM), providing management with the necessary insights to guide further improvements. Additionally, Table below outlines key performance indicators based on risks and opportunities associated with BPC’s operations, aligned with IFC performance standards.

Table 19. ESHS performance

S. N	Process	Process Performance Indicators	Responsibility to provide details	Frequency
1	Management responsibility	Number of actions pending crossing target date	Quality Assurance & Safety (QAS)	Half-yearly
		Number of improvements recommendations	QAS	Half-yearly

2	Objectives/target/ Programme	Progress made in objective/target/Programme	CSD	Quarterly Progress report (TAS)
3	Training	Number of trainings conducted	Support Services Division (SSD)	Annually
		Number of topics covered	SSD	Annually
		Number of personnel benefited	SSD	Annually
4	Purchasing General	Supplier performance with regard to quality and timely delivery	Procurement Division (PD)	Annually
5	Purchasing – construction contracts	Nonconformities identified by the Quality and safety division – are related to constructions.	Construction Division (CD)	Annually
6	Quality management system (assessed through internal audits)	Number of nonconformities	Concerned Offices	Annually
7	Management of environmental aspects	Number of environmental Incidents	Environment, GIS & Survey Section	Annually
8	Management of OH&S Hazards	Number of OH&S incidents	QAS	Annually

Table 20. Potential key potential indicators

Overarching Themes	Performance Indicators
E&S Management	<ul style="list-style-type: none"> • Number of trainings conducted on EHS & Social Policy and ESMS • Regulatory issues identified proactively and resolved • Number of notices of regulatory violations • Number of internal EHS compliance audits conducted during a year across assets • Numbers of E&S findings and corrective actions from the audits
Labor Management & Working Conditions	<ul style="list-style-type: none"> • Adoption of a practices governing safe working conditions (including as access to water, sanitation) and PPE usage • Number and nature of internal grievances received, and time taken to redress the same • Improved % of women and differently abled as on roll employees and contractual workers

	<ul style="list-style-type: none"> • Voluntary and involuntary turnover rates of all employees
Pollution Prevention & Resource Efficiency	<ul style="list-style-type: none"> • Identification of organization wide opportunities or goals & targets to reduce consumption of resources such as electricity, water, fuel (diesel) etc. • Total water consumption in a year • Zero discharge of wastewater & decrease in use of Fresh water • Percentage reduction of greenhouse gas emissions • Percentage Reduction in air emissions. • Quantity of waste (hazardous and non- hazardous waste) generated • Reportable environmental incidents • Number of trainings conducted on sustainability aspects such as resource efficiency/resource conservation (e.g. water), GHG emission management amongst others
Health & Safety	<ul style="list-style-type: none"> • Number of EHS training/mock drills conducted during a year • Number of recordable injuries / illnesses that resulted in lost time • Number of near misses reported and recorded • Number of recordable incidents involving public/ community
Stakeholder Engagement	<ul style="list-style-type: none"> • Number of community outreach activities implemented by company

The ESHS objectives and targets will be established in accordance with the “Procedure for Objectives & Targets” and will take into account the following factors:

- Environment & Social Policy commitments of the organization.
- Legal and other requirements that the organization must comply with.
- Technological options, considering the feasibility of reducing risks through advancements.
- Financial requirements, ensuring budget availability for necessary changes.
- Operational requirements, focusing on controls to mitigate impacts or risks.
- Business requirements, aligning objectives with strategic organizational priorities.

BPC will maintain a record of targets aimed at introducing more resource-efficient technologies, regularly updating these targets to incorporate advancements in



techniques over time. Objectives and targets will adhere to the SMART criteria: they will be Specific, Measurable, Achievable, Relevant, and Time-based. Goals will be categorized as short, medium, and long-term to ensure structured planning and implementation.

Each department or division will identify and set Team Appraisal Targets (TAS) annually, and the EGSS Manager will maintain records in alignment with the adopted E&S Objectives and Targets. These objectives and targets will be communicated to all relevant personnel to ensure effective implementation of action plans and successful achievement of the goals.

The ESMS Committee, where applicable, will review the objectives and targets annually, considering factors such as new regulations, projects, commitments, and operational changes. Updates will be made as necessary, subject to management approval. The annual TAS targets for each department or division will be monitored and reviewed quarterly, with responsibilities for managing and reviewing objectives and targets outlined in Table below.

Table 21. Responsibility

S. N	Activity	Responsibility
1	Setting Objectives and Targets	Head of Departments (HOD)
2	Approval of Objectives and Targets	Management
3	Updating/modifying Objectives and targets	HOD
4	Monitoring Progress on Targets	Division/Section/Unit
5	Reporting progress on Objectives & Targets to the management	HOD
6	Communication of Objectives & Targets	HOD

8.2.1 Project Lifecycle KPIs and Evaluation

While Table 17 provides the broad organizational KPIs, specific performance indicators tailored to the distinct risks of each project stage will also be monitored. The following table distinguishes the KPIs to be monitored across planning, construction, and operation and maintenance (O&M) phases:

Table 22. Lifecycle-Based E&S Performance Indicators

Project Stage	Key Performance Indicator (KPI)	Monitoring Frequency
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Planning & Pre-Construction	Valid Environmental/Forestry Clearances.	Bi-annually
	ESIA/IEE disclosed.	
	Number of stakeholder engagement meetings held vs. planned.	
Construction	Lost Time Injury Frequency Rate (LTIFR) for employees and contractors.	Monthly
	CESMP	
	Volume of hazardous waste (oil/e-waste) disposed of via authorized routes.	
O&M	Number of SF6 gas leaks or oil spills detected and remediated.	Annually
	% of the workforce (including third-party) trained in ESMS & Safety SOPs.	
	Number of unplanned outages caused by E&S factors (e.g., vegetation).	
Asset Retirement	% of decommissioned area restored to original ecological state.	Per Project
	% of lead-acid batteries and e-waste recycled via authorized vendors.	

8.3 E&S Reporting and Communication



8.3.1 ESMS Monitoring and Reporting

Specific monitoring considerations within the ESMS may be detailed in individual Management Plans and their supporting SOPs. However, a comprehensive Project Environmental and Social Monitoring Plan will also be developed to consolidate and address all specific monitoring needs identified in these documents and the finalized project ESIA/DPR.

This plan will include the creation and maintenance of a detailed spreadsheet documenting the planning, execution, and reporting of environmental and social monitoring requirements applicable throughout the construction, operation, decommissioning/closure, and post-closure phases of the project. The sources for these monitoring requirements may include:

- Environmental and social monitoring protocols established through the ESIA or other relevant processes.

- Additional OHS monitoring parameters identified through international regulations.
- Monitoring requirements associated with the identified risk outlined in Section 4.
- Other specific environmental or social monitoring requirements outlined in individual Management Plans.

Non-conformances identified during monitoring activities will be addressed through the corrective and preventive action process, as described in the “Procedure for EHS Nonconformity, Corrective and Preventive Action”  and the “Procedure for Corrective and Preventive Action” .

Concerned offices will maintain detailed records of non-conformities, analyses, preventive actions, and their effectiveness in accordance with the “Procedure for Control of Document” and the “Procedure for Control of Records.”

Planned and implemented preventive actions, along with their subsequent effectiveness, will be reviewed and discussed during MRM. An internal reporting schedule will also be established to monitor and measure key ESMS elements, facilitating management's identification of opportunities for improvement, in accordance with the “Procedure for Monitoring and Measurement of IMS Performance.”

Designated personnel, as specified in Table 15, will monitor performance at prescribed intervals, maintain relevant records and data, and present them during MRM. These records will be retained by the respective offices for a minimum period of three years.

8.3.2 Legal and Regulatory Compliance Monitoring

BPC will ensure that all required permits for its operations, as mandated by national legislation (refer to Table 6, Section 2.1), are obtained, valid, and up to date, as required by the “Procedure for Legal Requirements and Compliance.” This procedure establishes a systematic approach to identifying, updating, and maintaining accessibility to legal and other requirements applicable to BPC’s activities, products, and services.

The process includes identifying and updating relevant legislation, regulations, notifications, and directives. Updates will be incorporated whenever external communications introduce changes to applicable legal requirements. These requirements will be communicated to relevant stakeholders within BPC, following the


“Procedure for Communication.” Any significant changes in legislation will be highlighted to management to assess their implications.

Compliance with these requirements will be monitored to ensure adherence across all operations. Any non-conformances identified during this process will be promptly documented and addressed, as outlined in the “Procedure for EHS Nonconformity, Corrective and Preventive Action.”



Table 23. Responsibilities for each activity

S. N	Activity	Responsibility
1	Identify and update the list of relevant legal and other Requirements	Legal Officer
2	Communication of legal and other requirements to concerned offices	Legal Officer
3	Communicate new legal requirements to Management and Services	Legal Officer
4	Ensure compliance with the legal requirement and propose corrective action	Concerned Office


8.3.3 Internal ESMS Auditing

BPC will conduct internal audits to evaluate compliance and effectiveness of the ESMS. The internal audit process will ensure adherence to the “Procedure for Internal Audit (ISO/IMS/BPC/PR/IA)  Procedure for Internal Audit.pdf,” and requirements of ISO 9001:2015, ISO 14001:2015, and OHSAS 18001:2007 standards. It will also confirm that the ESMS is effectively implemented and consistently maintained, and audit results will be provided to management for review and action.

Internal audits will be planned based on the status and criticality of activities, outcomes of environmental aspects and impact assessments, risk assessment results of BPC's activities and operations, and findings from previous audits.

Audits will be conducted by trained, independent, and competent auditors. The results of these audits will be documented in accordance with the “Procedure for Control of Records (ISO/IMS/BPC/PR/COR)  Procedure for Control of Records.pdf” and communicated to the relevant areas following the ‘Procedure for Communication (ISO/IMS/BPC/PR/COM)  Procedure for Communication.pdf .”

Audited offices will be responsible for promptly addressing and resolving nonconformities. Corrective and preventive actions will align with the “Procedure for

EHS Nonconformity, Corrective and Preventive Action (ISO/IMS/BPC/PR/NCP)  Procedure for EHS Nonconformity Corre”

and the “Procedure for Internal Audit (ISO/IMS/BPC/PR/IA)  Procedure for Internal Audit.pdf”.

8.4 Management Review

During the management review meeting, the MR shall present a comprehensive performance report of the ESMS in alignment with the IMS and ISO standards. The discussions shall primarily address, but are not limited to, the following key inputs:



- Action Taken Report: Review of actions implemented based on decisions from previous meetings.
- ESMS Objectives and Targets: Status update on progress toward established objectives and targets, including any amendments.
- Audit Findings: Insights and observations from internal and external audits.
- Compliance Evaluation: Assessment of adherence to legal and regulatory requirements.
- Incident Analysis: Examination of incidents, accidents, and non-conformances.
- Feedback and Complaints: Review of feedback and complaints from employees and external interested parties.
- Corrective and Preventive Actions: Status of measures undertaken to address identified issues.
- Stakeholder Concerns: Consideration of issues raised by stakeholders, interested parties, and statutory or regulatory agencies.
- Resource Needs: Identification of additional resource requirements.
- Recommendations for Improvement: Proposals for changes and continual enhancement of the ESMS for approval.
- Performance of External Providers: Evaluation of the performance of external service providers.

Based on these inputs, the management shall make informed decisions and take actions to enhance the effectiveness of the ESMS, related procedures, and SOPs.

The minutes of the meeting shall document decisions, assigned responsibilities, and actions to be taken. Any approved changes shall be incorporated through a formal implementation plan. The outcomes of the review meeting shall be communicated to all relevant offices within the organization and, where applicable, to external stakeholders.

8.5 Documentation and Control Procedures

The concerned officials are responsible for assuring control of ESMS documentation including establishing document controls. Additionally, all the employees are responsible for adhering to this procedure to assure that controlled documents are appropriately used, updated, and distributed in accordance with “Procedure for Control of Documents

(ISO/IMS/BPC/PR/COD ) and “Procedure for Control of Records (ISO/IMS/BPC/PR/COR ).

9. Stakeholder Engagement

9.1 Stakeholder Engagement Planning


BPC, wherever do its business activities, will ensure;

- Continuous engagement and consultation with the various stakeholder groups.


BPC will carry this objective forward through its “Stakeholder Engagement Policy” and “Stakeholder Engagement Plan,” which will be managed within the context of this ESMS.

The plan will be applicable during all the phases of the project activity. General protocols for documenting and managing complaints from external stakeholders will be managed in accordance with “Procedure for Handling Interested Parties’ Complaints

(ISO/IMS/BPC/PR/HPC )”.


“Procedure for Incident Investigation (ISO/IMS/BPC/PR/INI )” will guide on reporting the proximity of planned activities to indigenous groups, or other inhabitants or transients encountered in the project area.

9.2 Disclosure of Information

As noted in Section 9.1, BPC having a “Stakeholder Engagement Plan  ” that contains the social management themes reflected in the January 1, 2012 version of PS 1 (IFC,

2012), including requirements for the disclosure of project related information. Should individuals be directly encountered in the field, all such contacts should be documented and appropriate hazard avoidance measures be implemented.

9.3 Informed Consultation and Participation

As noted in Section 9.1, BPC having a “Stakeholder Engagement Plan ” that incorporates the social management themes reflected in PS 1 (IFC, 2012), including requirements for informed consultation and participation. Pursuant to Stakeholder Engagement Plan and Policy, an Informed Consultation and Participation (ICP) will be conducted for projects with potentially significant adverse impacts on Affected Communities. BPC will document the process, in particular the measures taken to avoid or minimize risks to and adverse impacts on the Affected Communities, and will inform those affected about how their concerns have been considered.

9.4 Indigenous Peoples

As noted in Section 9.1, a Stakeholder Engagement Management Plan will be implemented if required that will incorporate the social management themes reflected in PS 1 (IFC, 2012). Based on the information provided, it is unlikely that the requirements of Section 32 of PS 1 (which require obtaining Free, Prior, and Informed Consent (FPIC)) will apply.

9.5 Private Sector Responsibilities under Government-Led

As noted in Section 9.1, if and when found necessary, an appropriate Stakeholders engagement will be planned in conjunction with the host government or independently, that will incorporate the relevant management themes reflected in Section 33 of PS 1 (IFC, 2012).

10. External Communication and Grievance Mechanisms

10.1 External Communications

As noted in Section 9.1, Stakeholder Engagement Plan will be implemented on works prior to the start of construction activities. The plan will be incorporated as per accordance with Section 34 of PS 1 (IFC, 2012).

10.2 Grievance Mechanism for Affected Communities

As noted in Section 9.1 and 10.1, Stakeholder Engagement Plan will be implemented on works prior to the start of construction activities. The plan will incorporate “Grievance Mechanism” and “Procedure for Handling Interested Parties’ Complaints” for the management of all external communications with affected communities, including those that constitute actual grievances.

The community grievance mechanism shall maintain accessible and secure channels for the submission of anonymous complaints to ensure that all affected persons can voice concerns regarding project risks or impacts without fear of intimidation.

11. Ongoing Reporting to Affected Communities

As many of the Management Plans discussed in Section 1.5 will not be fully implemented until BPC authorizes initiation of project’s development, formal reporting to affected communities on issues that involve ongoing risk to or impacts on Affected Communities and on issues that the consultation process or grievance mechanism have identified as a concern to those Communities will occur prior to construction work initiates and after detailed survey. Reporting requirements will be included in the Stakeholder Engagement Plan.