ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM

ENVIRONMENTAL MANAGEMENT FRAMEWORKS

FOR CONSTRUCTION PROJECTS, SYSTEM OPERATIONS, AND MAINTENANCE

ECGghOfficial

ELECTRICITY COMPANY OF GHANA LIMITED

HEAD OFFICE | MAY 2026

Document Information

DOCUMENT REFERENCE	ECG/SHE/ESMS/06
DOCUMENT TITLE	ESMS – ENVIRONMENTAL MANAGEMENT FRAMEWORKS
DOCUMENT CLASSIFICATION	INTERNAL
OWNER	MD
RESPONSIBILITY	GM/SHE
TARGET AUDIENCE	ALL STAFF AND RELEVANT STAKEHOLDERS AND THIRD PARTIES
PURPOSE	THIS DOCUMENT IS TO PROVIDE A GUIDING FRAMEWORK FOR ECG AND THIRD-PARTY CONTRACTORS IN THE DEVELOPMENT OF STANDARD, COMPREHENSIVE, AND SITE- OR JOB-SPECIFIC MANAGEMENT PLANS FOR EFFECTIVE MANAGEMENT ENVIRONMENTAL RISKS AND IMPACTS ASSOCIATED WITH PROJECT ACTIVITIES

Revision History

VERSION DETAIL	DATE	SUMMARY OF CHANGES	CHANGES BY
2.0	MAY 22, 2026	THIS MAJOR REVISION UPDATES THE ECG ENVIRONMENTAL MANAGEMENT FRAMEWORK UNDER THE ESMS TO ALIGN WITH CURRENT GHANAIAN ENVIRONMENTAL LEGISLATION, AND PRESENT ORGANIZATIONAL ARRANGEMENTS, WITH STRENGTHENED PROVISIONS FOR SOUND MANAGEMENT OF THE ENVIRONMENT FROM ECG OPERATIONS	SHE DIVISION

Document Review

DATE OF NEXT SCHEDULED REVIEW
MAY 22, 2029

Document Approval

APPROVED BY	ING. KWAME KPEKPENA	APPROVAL DATE	5/6/26
SIGNATURE	Kwame Kpekpena		

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ACRONYMS

ACRONYM	MEANING
BAP	Biodiversity Action Plan
BMP	Biodiversity Action Plan
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna,
CPIM	Corporate Project Implementing Manual
ECG	Electricity Company of Ghana
EPRP	Emergency Preparedness and Response Plan
EMP	Environmental Management Plan
E&S	Environment and Social
EHS	Environmental, Health and Social
ESMMP	Environmental and Social Management and Monitoring Plan
ESIA	Environmental and Social Impact Assessment
ESMS	Environmental and Social Management System
EWC	European Waste Catalogue
GIIP	Good International Industry Practice
GPS	Global Positioning System
IFC	International Finance Corporation
LI	Legislative Instrument
MSDS	Material Safety Data Sheet
OHS	Occupational Health and Safety
PCB	Polychlorinated Biphenyl
PCR	Physical Cultural Resources
PIC	Prior Informed Consent
POPS	Persistent Organic Pollutants

ACRONYM	MEANING
PPE	Personal Protective Equipment
PS	Performance Standards
ROW	Right of Way
SAICM	Strategic Approach to International Chemicals Management
SEP	Stakeholder Engagement Plan
SF_6	Sulphur Hexafluoride
SOP	Standard Operating Procedure
SHE	Safety Health and Environment
UNESCO	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
VCAP	Vegetation Control Action Plan
VCMP	Vegetation Control Management Plan
WEEE	Waste from Electrical and Electronic Equipment
WMP	Waste Management Plan

EXECUTIVE SUMMARY

This Environmental Management Frameworks (EMF) document provides a strategic foundation for developing comprehensive management plans to ensure that all environmental and social risks and impacts associated with project development and operational activities within the Electricity Company of Ghana (ECG) are effectively identified, mitigated, and monitored. The frameworks are aligned with relevant national and local environmental regulations, the International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability and recognized good industry practices. They serve as a guiding tool for ECG personnel, contractors, project developers, and other stakeholders to promote environmental stewardship and uphold sustainable practices across all phases of the project lifecycle

The EMF is structured around key thematic areas, each addressed by a dedicated framework:

1. Contractor Management Framework

Establishes procedures to ensure that contractors adhere to environmental and social (E\&S) requirements. This includes prequalification screening, environmental induction, monitoring and performance evaluations aligned with IFC Performance Standard 1 (Assessment and Management of Environmental and Social Risks and Impacts).

2. Biodiversity Management Framework

Establishes methodologies to avoid, minimize, or offset adverse impacts on biodiversity. This framework emphasizes ecological monitoring, habitat protection, and engagement with local conservation stakeholders, in alignment with IFC Performance Standard 6.

3. Waste Management Framework

Outlines guidelines for the segregation, storage, transport, and disposal of solid and liquid wastes in a manner that minimizes environmental and health impacts. It emphasizes a waste hierarchy approach and is in line with IFC Performance Standard 3 (Resource Efficiency and Pollution Prevention).

4. Hazardous Materials Management Framework

Provides protocols for the safe handling, storage, use, and disposal of hazardous substances, including fuel, oils, and chemicals. The framework ensures compliance with international safety standards and protects workers and the environment from hazardous exposure.

5. Water and Air Quality Management Framework

Sets monitoring protocols and mitigation measures to control emissions to air and discharges to water bodies. It aims to prevent pollution, safeguard community health, and maintain compliance with environmental quality standards, under IFC Performance Standard 3

6. Site Rehabilitation and Landscaping Management Framework

Defines the requirements for restoring project sites post-construction, including re-vegetation, erosion control, and reinstatement of natural drainage. It aims to promote landscape aesthetics and environmental recovery in accordance with IFC Performance Standard 6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources).

7. Cultural Property Protection Management Framework

Ensures that tangible and intangible cultural heritage is preserved. It outlines procedures for identifying, protecting, and managing cultural resources and chance finds discovered during project activities, as guided by IFC Performance Standard 8 (Cultural Heritage).

The implementation of these frameworks will contribute to effective risk management, enhance environmental performance, and ensure compliance with national regulations and international standards. This integrated approach reinforces the commitment of project developers and contractors to environmental sustainability and social responsibility across all project phases.

SAFETY, HEALTH & ENVIRONMENT POLICY STATEMENT

GOLDEN RULES OF SAFETY

Golden Rules of Safety are designed to ensure the health and safety of all employees, assets and all stakeholders including contractors, subcontractors, customers and the public.

The Golden Rules are intended for the people who organize work, the people who carry out the work and the people who inspect the work. The Golden Rules are based on systematic processes for identifying, assessing and managing risks.

1. INTRODUCTION

1.1. Background

The Electricity Company of Ghana Limited (ECG) is committed to the sustainable management of the environmental and social risks and impacts associated with its construction activities, operational processes, and systems maintenance. As part of its overarching Environmental and Social Management System (ESMS), ECG has developed a suite of targeted management plans designed to address these risks and impacts in a structured, proactive, and compliant manner.

This document outlines the frameworks for managing key environmental aspects of ECG's operations. These include Contractor Management, Biodiversity Management, Water and Air Quality Management, Waste Management, Hazardous Materials Management, Site Rehabilitation and Landscaping, and Cultural Property Protection. Each framework forms an integral component of the ESMS. They are developed in accordance with applicable national environmental and social protection laws and regulations, international conventions to which Ghana is a signatory, and international best practices as defined by the International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability.

1.2. Purpose

The various frameworks will guide ECG together with its third-party Contractors in developing standard, comprehensive, and site or job specific management plans that will be applied in managing the environmental risks and impacts arising from those activities.

1.3. Structure and Implementations

Six of the seven frameworks are designed to govern and enhance the environmental performance of ECG staff and third-party Contractors across all phases of project construction, operations, and maintenance. The seventh, the Contractor Management Framework, focuses specifically on ECG's oversight role, ensuring that third-party Contractors adhere to ECG's ESMS, as well as the specific obligations outlined in the associated frameworks.

As the organization ultimately responsible for the environmental and social performance of its

projects, ECG is committed to ensuring that all contracted works are executed sustainably and in alignment with best environmental and social practices. To this end, ECG management is obligated to apply these frameworks consistently and rigorously across all relevant activities and operational contexts.

2. CONTRACTOR MANAGEMENT FRAMEWORK

2.1. Purpose and Applicability

Throughout the lifecycle of a construction project, various contractors may perform activities on-site, either under direct contract with ECG or through agreements with a primary contractor engaged by ECG. Regardless of the contractual structure, ECG project management retains ultimate responsibility for the environmental and social performance of all contractors and subcontractors involved in project execution.

Accordingly, it is essential that ECG effectively manages and oversees contractor compliance with ESMS across all project activities. This framework provides guidance on how ECG will fulfill this oversight role, ensuring that all contractors and subcontractors operate in accordance with the company's environmental and social expectations.

For new construction projects, ECG will develop a Contractor Management Plan prior to contractor engagement. For system operations and maintenance involving third parties, ECG will prepare a Contractor Management Manual applicable to both scheduled and unscheduled activities. If this manual is prepared by a contractor or third party, ECG remains responsible for its review and formal approval prior to implementation.

2.2. Applicable Standards

There are no specific legal standards in Ghana that directly regulate contractor management practices. Therefore, the applicable standards for contractor oversight are defined by the environmental and social obligations that ECG must ensure its contractors fulfill. These include compliance with relevant Ghanaian national laws on environmental protection, occupational health and safety, as well as adherence to ECG's internal environmental and social policies, plans, standards, specifications, and guidelines, and any applicable standards established by third-party contractors.

In addition, contractors are expected to align with Good International Industry Practice (GIIP), including the standards outlined by international frameworks such as the IFC Performance Standards. The specific standards applicable to a given project should be identified through the Environmental and Social Impact Assessment (ESIA) or other relevant assessment documents of potential impacts,

such as environmental and social due diligence reports.

2.2.1. Key Applicable Corporate Standards:

The following corporate standards and policies are applicable and must be upheld by both ECG staff and third-party contractors:

i. Environmental Management Plan (EMP)
ii. Safety & Health Policy Guidelines and Procedures Manual
iii. Code of Conduct for ECG's Third-Party Contractors and Staff
iv. ECG Construction Project Implementation Manual
v. Corporate Project Implementation Manual

Although these standards are primarily binding on ECG, they also carry legal and procedural obligations that must be extended to contractors. As such, ECG is responsible for ensuring that these standards are explicitly incorporated into contractor agreements and rigorously enforced throughout the duration of the project.

2.2.2. National Laws

The following national laws form the legal foundation for ESMS compliance in ECG's operations. These provisions must be upheld by ECG and, where applicable, extended to all third-party contractors:

i. Water Resources Commission Act, 1996 (Act 522)
ii. Riparian Buffer Zone Policy
iii. Environmental Protection Act 2025, (Act 1124)
iv. Environmental Protection (Environmental Assessment) Regulations, 2025 (L.I. 2504)
v. National Environmental Policy, 1999
vi. National Environmental Quality Guidelines, 1998
vii. Environmental Impact Assessment Guidelines for the Energy Sector (Volume 2)
viii. Wetland (Ramsar Sites) Management Regulations, 1999

ix. Ghana Forest and Wildlife Policy, 2012

x. Wild Animals Preservation Act, 1961 (Act 43)

xi. Control and Prevention of Bushfires Act, 1990 (PNDC Law 229)

xii. Ghana National Fire Service Act, 1997 (Act 537)

xiii. Road Traffic Act, 2004 (Act 683)

xiv. Labour Act, 2003 (Act 651)

xv. Factories, Offices and Shops Act, 1970 (Act 328)

xvi. Environmental Sanitation Policy, 2010

xvii. Land Act, 2020 (Act 1036)

2.2.3. National Environmental Quality Guidelines, 1998 International Conventions and Protocols

The Government of Ghana has ratified and/or signed several international conventions and protocols that align with and support this framework. These instruments demonstrate Ghana's commitment to environmental sustainability, biodiversity conservation, and global environmental governance.

Key conventions and protocols include:

i. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989.

ii. Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention), 1971.

iii. United Nations Framework Convention on Climate Change (UNFCCC), 1992

iv. Kyoto Protocol to the United Nations Framework Convention on Climate Change (Kyoto Protocol), 1997.

v. Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol), 1987.

vi. Stockholm Convention on Persistent Organic Pollutants (POPs), 2001.

vii. Convention Concerning the Protection of World Culture and Natural Heritage (World Heritage Convention), 1972.

viii. International Plant Protection Convention, 1951.

2.2.4. International Best Management Practices

The following international best management practices are relevant to the Contractor Management Framework and should guide contractor environmental and social performance:

i. IFC Good Practice Note: Managing Contractor Environmental and Social Performance
ii. World Bank Group Environmental, Health, and Safety (EHS) General Guidelines
iii. World Bank Group EHS Guidelines for Electricity Transmission and Distribution

2.3. Approach and Activities

It is critical that all applicable ESMS requirements relevant to each contractor's scope of work are clearly defined and incorporated into contractual agreements. Ideally, these requirements should be integrated early in the procurement process, forming an essential part of the tendering and contract award procedures.

Tenderers or Bidders should be required to clearly outline their approach to fulfilling the environmental and social requirements, including the management and oversight of subcontractors, as part of their tender or proposal submissions. This approach must be thoroughly evaluated during the selection process. Subsequent to the contract award, the successful bidder will be required to refine and expand this strategy into a comprehensive Environmental and Social Management and Monitoring Plan (ESMMP)

Where the contractor selection process allows for this proactive approach, the Contractor ESMMP can focus on holding the contractor accountable for the specific commitments made in their proposal. However, in instances where the procurement process does not fully accommodate this approach, ECG must ensure that the selected contractor:

- Fully understands their E&S obligations, and
- Has the technical and managerial capacity to meet those obligations.

In developing and implementing the contractor's ESMMP, ECG will collaborate closely with contractors to:

i. Assess the Prime Contractor's Subcontracting Program: Gain a clear understanding of the structure, roles, and responsibilities of all subcontractors in relation to ESMS compliance.
ii. Clarify E&S Responsibilities Across the Contracting Chain: Ensure the prime contractor is fully aware of its own E&S obligations, as well as those of its subcontractors. All relevant ESMS requirements must be explicitly included in subcontract agreements.
iii. Agree on Roles in Management Plan Development: Define responsibilities for the preparation and execution of management plans that will form part of the overall Environmental and Social Management and Monitoring Plan (ESMMP).
iv. Establish Staffing and Organizational Requirements: Specify the organizational structure and staffing requirements necessary to meet ESMS obligations. ECG must review and approve the qualifications and performance of key personnel from the prime contractor and major subcontractors. In turn, the prime contractor must evaluate the same for its subcontractors with significant E&S responsibilities.
v. Allocate Resources for ESMS Implementation: Identify and secure the resources (personnel, budget, equipment, etc.) required for the ongoing implementation of ESMS requirements, including the development of various management plans within the ESMMP.
vi. Define Monitoring and Reporting Protocols: Establish clear requirements for monitoring and reporting. This includes the contractor's obligations for E&S performance reporting, as well as similar expectations for subcontractors.

2.4. Monitoring, Recordkeeping, and Reporting

The ESMMP must require ECG to regularly monitor contractor compliance with all ESMMP provisions. This oversight should extend to the prime contractors' management and supervision of their subcontractors to ensure full adherence throughout the project hierarchy.

Monitoring will be carried out through a combination of document reviews (e.g., reports, logs, and records) and both scheduled and unannounced site inspections to directly observe contractor activities and verify compliance.

The plan will include clear and detailed provisions for monitoring each contractor, covering the following key elements:

i. Monitoring Procedures: Clearly defined procedures for how monitoring will be conducted, including methods, tools, and responsibilities.
ii. Focus on High-Impact Activities: Identification of key activities with potential significant environmental or social impacts to ensure compliance with relevant standards, contract provisions, and the contractor's own monitoring program.
iii. Subcontractor Oversight: Verification of prime contractors' implementation of their subcontractor monitoring programs, in accordance with agreed terms established at or immediately following contract award.
iv. Qualifications of Monitoring Personnel: Specification of the required qualifications and expertise of individuals responsible for reviewing reports and conducting inspections, to ensure credible and competent oversight.
v. Monitoring Frequency and Follow-Up: Definition of the minimum frequency for both planned and unannounced monitoring visits, along with timelines for follow-up monitoring in cases where non-compliance or deficiencies are identified.
vi. Corrective Actions for Non-Compliance: Description of the actions to be taken in response to unsatisfactory environmental or social performance, or failure to implement the monitoring program effectively. This may include notices of non-compliance, corrective action plans, or contractual remedies.
vii. Record-Keeping Responsibilities: Specification of the types of records to be maintained (e.g., inspection checklists, incident logs, corrective action records), and assignment of responsibility for their maintenance.

viii. Reporting Requirements: Definition of the types of monitoring reports to be prepared, the recipients of those reports (e.g., ECG project management, regulatory authorities), and the required retention period for documentation.

2.5. Implementation

ESMMP must identify and describe the responsibilities of all parties, including ECG, contractors, and competent authorities. The plan must also identify the roles and responsibilities of individual positions within ECG and contractor. This should be shown in an organogram that includes as much detail as possible, down to the individual person or position.

Oversight activities of contractors and ECG will be laid out in detail in the plan, including the frequency and scope of monitoring and other oversight activities. In all cases, ECG remains ultimately responsible for implementation of the plan by contractors.

2.6. Relationship to Other Plans

The ESMMP serves as the operational interface through which ECG ensures that contractors and their subcontractors effectively implement the provisions of these sub-plans.

The sub-plans that are particularly relevant and subject to contractor implementation and ECG oversight include:

i. Environmental and Social Management Plan
ii. Health and Safety Policies and Procedures
iii. Waste and Hazardous Materials Management Plan
iv. Water and Air Quality Management Plan
v. Site Rehabilitation and Landscaping Plan
vi. Emergency Preparedness and Response Plan
vii. Stakeholder Engagement Plan.

2.7. Training Requirements

The ESMMP must clearly define the training requirements for both ECG staff and third-party contractors. This should include:

i. Identification of Training Needs: A detailed assessment of the skills and competencies required based on each individual's assigned roles and responsibilities.
ii. Designation of Responsibility: Clear specification of who is responsible for designing, delivering, and overseeing the training, whether ECG, the contractor, or an external qualified provider.
iii. Target Audiences: Identification of which staff members (from ECG and/or contractors) must receive training, and in what specific areas.

Training programs should be tailored to the responsibilities of the participants and should include, at a minimum:

- Technical and Administrative Competencies
- Incident Response Awareness
- Occupational Health and Safety (OHS)

Training should be conducted prior to the commencement of relevant activities and refreshed periodically to ensure continued compliance and awareness. The ESMMP should also establish mechanisms for evaluating the effectiveness of training, including knowledge assessments, practical demonstrations, and documentation of attendance and completion.

2.8. Revision

ESMMP will be reviewed at least annually and will be revised, if necessary, to update contractor management procedures and requirements. In addition, it will be updated at the time any new contractor becomes responsible for project activities.

3. BIODIVERSITY MANAGEMENT FRAMEWORK

3.1. Purpose and Applicability

This framework is intended to guide the means by which ECG and third-party contractors will protect and conserve biodiversity and maintain or enhance community and/or project benefits from ecosystem services, throughout the life cycle of a project.

ECG and/or contractors will develop and implement a plan to protect biodiversity that meets the requirements of this framework when a project may have significant adverse impacts on biodiversity. Where the assessment process leads to the identification of mitigation measures that are sufficient to avoid significant impacts, reduce them to acceptable levels, and/or offset or compensate for residual impacts, the resulting document shall constitute a Biodiversity Management Plan (BMP). For construction or maintenance projects in a high-risk habitat where additional information, analysis, or stakeholder consultation is required to identify appropriate mitigation measures and plan their implementation, the resulting document shall be a Biodiversity Action Plan (BAP) that aligns with the requirements of this framework.

A BAP differs from a BMP in that a BMP is primarily an operational document designed for use by site managers and contractors, whereas a BAP typically includes actions beyond the project site, such as biodiversity offsets and supplementary measures, and involves collaboration with external stakeholders, including implementing partners, reviewers, and advisors.

For new projects, plans will be developed prior to undertaking any activities that could have an adverse effect on biodiversity. For system operations and maintenance, ECG will develop a manual that will be applied to all scheduled and unscheduled activities.

3.2. Applicable Standards

At a minimum, the plan must ensure the project meets the requirements of national and/or local laws, international obligations of Ghana, and international standards, including the requirements listed below. In all cases, site-specific engineering and scientific judgment may be used to confirm that standards are sufficient to prevent unacceptable impacts on biodiversity or on protected areas. If there

are inconsistencies among or between requirements, the plan must adopt the more stringent one unless those requirements conflict with national laws, in which case, national laws apply.

3.2.1. Key applicable corporate standards

ECG plans, policies, procedure, and standards that apply are:

i. Corporate ECG SHE Policy
ii. ECG SHE Policy Guidelines and Procedures Manual
iii. Code of Conduct for ECG's Third-Party Contractors and Staff
iv. Corporate Project Implementation Manual (CPIM)

3.2.2. Applicable National Legislation and Policies:

Ghanaian acts and policies that relates to this framework include:

i. Environmental Protection Act, 2025 (Act 1124)
ii. Environmental Protection (Environmental Assessment) Regulations, 2025 (L.I. 2504)
iii. Environmental Impact Assessment Guideline for the Energy Sector (Volume 2)
iv. National Environmental Quality Guidelines, 1998
v. The Environmental Sanitation Policy 2010
vi. Water Resource Commission Act, 1996 (Act 522)
vii. Wetland Management (Ramsar Sites) Regulation 1999 (LI 1659)
viii. Ghana Forest and Wildlife Policy, 2012
ix. Wild Animals Preservation Act, 1961 (Act 43)
x. National Biodiversity Strategy for Ghana, 2001

3.2.3. International Conventions and Protocols

The following international conventions and protocols apply to the framework.

i. The Convention on Biological Diversity, 1992 (CBD).

ii. The Convention on the Conservation of Migratory Species of Wild Animals, 1979 (Bonn Convention).

iii. The Convention on International Trade in Endangered Species of Wild Flora and Fauna, 1975 (CITES).

iv. The Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971 (Ramsar Convention).

v. The Convention Concerning the Protection of World Cultural and Natural Heritage, 1972 (UNESCO World Heritage Convention).

3.2.4. International Best Management Practices

The international best management practices relating to this framework include:

i. International Finance Corporation (IFC) Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; and

ii. International Finance Corporation (IFC) Guidance Note 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

iii. World Bank Group Environmental, Health, and Safety General Guidelines.

iv. World Bank Group Environmental, Health and Safety Guidelines for Electricity Transmission and Distribution.

3.3. Approach and Activities

First and foremost, the plans must ensure that the Project implements the commitments to protect biodiversity that have been identified in the ESIA, ECG Corporate EMP or other assessment documents, and especially those required in permits and approvals. In the case of a BMP, the Plan is intended to provide the details by which mitigation and offsetting measures identified during the assessment process, and/or required by permits and licenses, are implemented. In the case of a BAP,

the Plan is intended to provide the methodology by which data gaps will be filled, impacts will be further defined, and mitigation will be developed and implemented.

All plans will be informed by and based upon the best judgment of qualified professionals and the experience gained from ongoing activities. Plans will become part of the project's Environmental and Social Management and Monitoring Plan.

Potential impacts during construction and systems operation would include direct effects on flora, fauna, and habitats as well as disturbance to fauna as the result of human presence and activities. These include most commonly:

i. Noise, light, and other human-induced disturbance which can affect fauna up to a kilometer or more from roads or project sites.

ii. Dust deposition around working areas which can affect flora and fauna, and also can affect aquatic habitat, typically close to the site.

iii. Removal of vegetation or bush clearing due to site clearing or Right of Way (ROW) maintenance destroys vegetation, desiccates and damages soil, and can kill, injure, or displace resident birds and other fauna.

iv. Trenching for underground cable laying during construction and maintenance of sub transmission networks.

v. Live overhead lines can pose significant electrical hazard to certain mammals and migratory birds.

vi. Suspended solids (silt) and/or toxic pollutants introduced into surface water from instream and nearby activities can kill, injure, or displace fish and other aquatic organisms, and can smother or otherwise damage aquatic habitat.

vii. Off-road vehicle movement can compact soil, damages and destroys flora and habitat, and can injure, kill, or displace animals and birds.

viii. Game and other animals, birds, fish, and plants can be exploited by workers from the construction workforce.

ix. Access roads can provide easier access to protected or otherwise valuable habitat to local residents.

x. Invasive species can be introduced accidentally, which can displace or weaken native species.

For a new project, ESIA should identify which (if any) of these impacts are of most concern, and whether impacts are likely to be temporary or permanent. In addition, the assessment should identify any potential impacts on species of conservation concern and/or on protected areas, whether these species are protected by national law or identified by international organizations.

The plan, whether a BMP or a BAP, may need to go beyond the mitigation measures identified in the ESIA) or other relevant assessment documents if additional biodiversity protection is required. This may be necessary, for example, when the original assessment focused primarily, or solely, on national biodiversity protection requirements. In such cases, the plan must take the form of a BAP that aligns with good industry practice, including compliance with the IFC Performance Standard 6 (PS6) and its associated Guidance Note. PS6 prioritizes the prevention and avoidance of impacts on biodiversity, particularly those affecting protected or high-value species and habitats. Where there is potential for significant adverse impacts on natural habitat, or especially on critical habitat, the BAP must fully meet the specific requirements outlined in PS6.

Whether a BMP or BAP, the Plan should require local consultations to ensure that stakeholders concerns are taken into consideration when developing and implementing biodiversity protection schemes, and wherever possible stakeholders should have a role in off-site biodiversity protection.

3.4. Vegetation Control

The Electricity Company of Ghana adopts ‘bush clearing’ and ‘weed control’ as ways of controlling vegetation under its sub-transmission/distribution network and substations. It is a routine maintenance activity usually executed by third party contractors hired by the company.

This environmental aspect of the company's maintenance is emphasized in this framework due to its regularity and extensive reach.

3.4.1. Bush Clearing

Bush clearing involves the temporal or permanent removal of plant species that are interfering with the distribution networks. Most troublesome of this vegetation is bamboo trees.

For bush clearing, ECG and/or Third-Party Contractor shall be required to produce a Vegetation Control Management Plan (VMP) or Vegetation Control Action Plan (VCAP), refer to BMP and BAP in Section 3.3, after an environmental assessment of the area to be cleared. The VCMP shall be site specific and shall be prepared considering the flora and fauna of the site. The VCMP or VCAP shall be compliance with ECG's Environmental Management Plan (EMP) and Bush Clearing Specifications.

3.4.2. Weed Control

This is applicable to clearing of weeds at substations. This shall be done in an environmentally sound manner to protect the ecosystem of that particular area. ECG shall develop a Weed Control Plan that shall set out Standard Operating Procedures and a monitoring program to ensure optimum biodiversity preservation. Third Party Contractors shall be required to use and adopt the SOP to suit a particular site for weed control jobs.

3.5. Monitoring, Recordkeeping, and Reporting

The plan must call for periodic inspection or monitoring of the project's footprint and activities, and of ecological and biodiversity mitigation and offsetting measures, in order to ensure compliance with the requirements of the plan. For verification and monitoring, the plan will need to specify:

i. The precise activities and measures that are needed to mitigate potential impacts.

ii. The sites and the timing during which mitigation measures will be applied.

iii. The measurable or observable criteria by which implementation of biodiversity protection mitigation will be judged successfully, and when they will be considered complete.

iv. The frequency of inspection and monitoring.

v. The required qualifications of persons who will conduct the monitoring and inspection.

vi. Records that must be kept and the person responsible for keeping the records.

vii. Reports that will be prepared, to whom the reports are to be submitted for review, and the length of time records will be kept. This could include summary reports and/or detailed technical reports, and could be submitted to ECG management, government agencies, and/or lenders.

The plan must describe what actions will be taken, and by whom, if inspection or monitoring results show that the biodiversity and ecology management practices do not meet applicable requirements, including the requirements of the plan itself.

The plan will also identify the level within ECG to which violations of requirements and/or failures of mitigation measures to achieve their goals must be reported. In addition, the ECG Legal Directorate should be consulted to provide advice on the length of time that records must be kept.

3.6. Implementation

The Plan must identify and describe the responsibilities of all parties, including the project team, contractors, and competent authorities, if any. The plan must also identify the roles and responsibilities within the project team and contractor. This should be shown in an organogram that includes as much detail as possible, down to the individual person.

Oversight activities of contractors and ECG will be laid out in detail in the plan, including the frequency and scope of oversight activities, as described in section 3.5 above. In all cases, ECG remains ultimately responsible for implementation of the plan by contractors.

3.7. Relationship to other plans

Other plans that are or may be related to the Biodiversity Management or Action Plan include:

i. Environmental/Social Management Plan

ii. Waste and Hazardous Materials Management Plan

iii. Water and Air Quality Management Plan

iv. Site Rehabilitation and Landscaping Plan

v. Emergency Preparedness and Response Plan

vi. Stakeholder Engagement Plan

vii. Safety & Health Policy Guidelines and Procedures Manual

3.8. Training

The plan must identify training requirements for staff and managers of ECG and/or contractors, including who will be responsible for conducting the training and who must be trained in what skills. Training will focus on the assigned responsibilities of the trainees and will encompass technical and administrative skills needed to perform assigned responsibilities, identification of response actions required in case of incidents, and topics related to occupational health and safety, including personal protective equipment required to conduct assigned activities.

3.9. Revision

The plan will be reviewed at least annually and will be revised if necessary to update contractor management procedures and requirements. In addition, it will be updated at the time any new contractor becomes responsible for project activities.

4. WASTE MANAGEMENT FRAMEWORK

4.1. Purpose and Applicability

This framework is intended to guide the means by which ECG and third-party contractors will ensure that wastes[1] generated during construction and operation of a project are managed in accordance with applicable standards and do not contaminate soil, water, or air. ECG and/or contractors will develop and implement a Waste Management Plan (WMP) that meets the requirements of this framework for each project that will produce or manage waste. For each project, the project team will identify the party responsible for preparing the plan.

For new projects, plans will be developed before construction begins and will be implemented throughout construction, operation, and decommissioning. For system operations or maintenance, ECG will develop a manual that will be applied to all scheduled and unscheduled activities.

4.2. Applicable Standards

At a minimum, the plan must ensure the project meets the requirements of national and/or local laws, international obligations of Ghana, and good industry practices, including the requirements listed below. In all cases, site-specific engineering and scientific judgment may be used to confirm that standards are sufficient to prevent unacceptable impacts on people and environment. If there are inconsistencies among or between requirements, the plan must adopt the more stringent requirement

[1] As defined by IFC EHS Guidelines, a waste is "any solid, liquid, or contained gaseous material that is being discarded by disposal, recycling, burning or incineration. It can be byproduct of a manufacturing process or an obsolete commercial product that can no longer be used for intended purpose and requires disposal." Each country will generally have its own definition. For purpose of this framework and for Waste Management Plans, wastes will include those defined by IFC and by Ghana, not one or the other.

unless it conflicts with national laws, in which case national laws apply.

4.2.1. Key applicable corporate standards

These corporate policies, plans, and procedures apply:

i. ECG Environmental, Health and Safety Policy

ii. ECG Safety and Health Policy Guidelines and Procedures Manual

iii. Code of Conduct for ECG's Third-Party Contractors and Staff

iv. Corporate Project Implementation Manual

4.2.2. Applicable National Legislation:

The applicable Ghanaian legislations include:

i. Environmental Protection Ac, 2025 (Act 1124)

ii. Environmental Protection (Environmental Assessment) Regulations, 2025 (L.I. 2504)

iii. National Environmental Quality Guidelines, 1998

iv. The Environmental Sanitation Policy 2010

v. Water Resource Commission Act, 1996 (Act 522)

4.2.3. International Conventions and Protocols

These are:

i. Stockholm Convention on Persistent Organic Pollutants (POPs), 2001

ii. Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal protocol) 1987

iii. Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 1988

iv. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989

v. Strategic Approach to International Chemicals Management (SAICM), 2002.

4.2.4. International Best Management Practices

The applicable International Best Management Practices are:

i. IFC Performance Standard 3: Pollution Prevention and Resource Efficiency

ii. World Bank Group General Environmental, Health and Safety (EHS) Guidelines: General EHS Guidelines – Environmental, Section 1.6 "Waste Management"

iii. World Bank Group Environmental Health and Safety Guidelines for Electricity Transmission and Distribution

4.3. Approach and Activities

Plans for new projects will initially be developed based on the ESIA, ECG EMP or other relevant assessment documents that identify potential impacts from generation, storage, disposal, or other use of wastes by a proposed project. Plans for system operations and maintenance will initially be based on due diligence assessments that characterize and evaluate risks of ongoing operation or maintenance. All plans will also be informed by, and based upon, the best judgment of qualified professionals and the experience gained from ongoing activities. Plans will become part of the project's ESMMP.

The overarching principle of the plan should be the application of the waste management hierarchy: prevention, reduction, reuse, recycle, treatment, and disposal (presented in Figure 1 below).

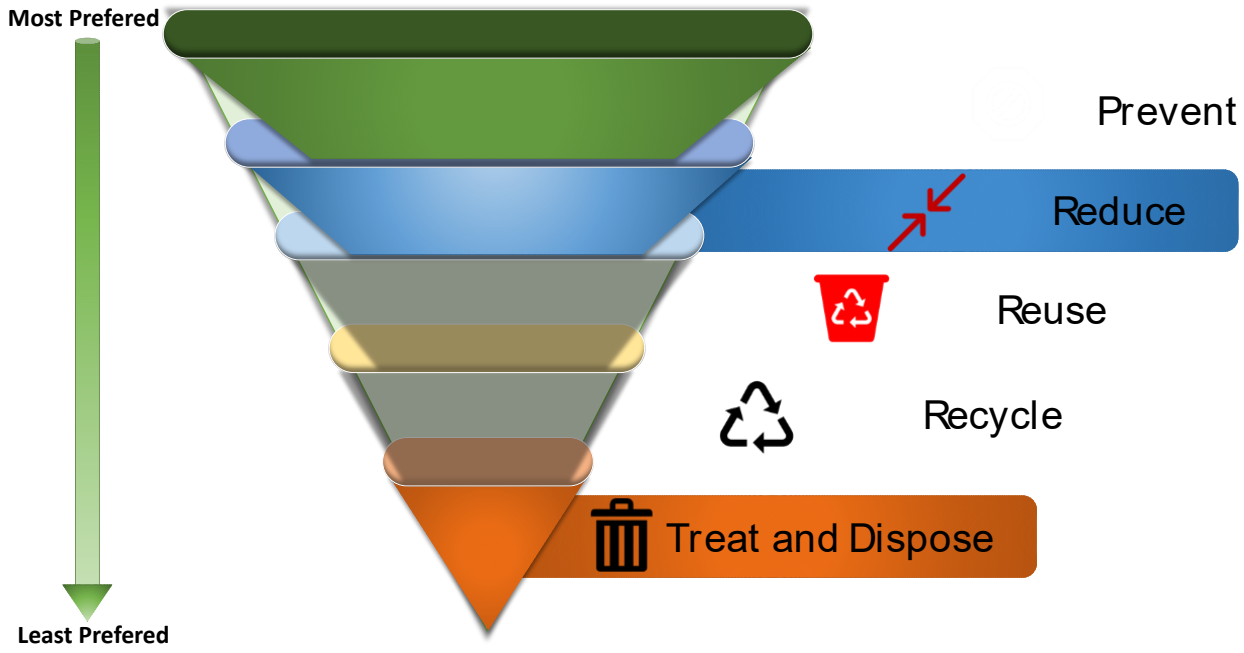

Figure 1: Waste Management Hierarchy

For new projects, waste generation and management should be considered from the time of initial design. For all projects, the Plan should take a systematic approach to identify and evaluate ways to:

i. Design or modify processes to avoid waste generation.

ii. Design or modify processes and practices to reduce waste generation.

iii. Re-use waste and surplus materials.

iv. Recycle and/or recover waste materials.

Disposal should be the last resort, used only when avoidance, reduction, reuse, and recycling/recovery are not economically and technically feasible. Wastes should be treated if needed to make them reusable, recoverable, or recyclable, and to ensure that disposal cannot lead to unacceptable risks to human health or the environment.

The plan will be based on a comprehensive waste inventory, which should include detailed information on all wastes, including:

i. Name of the waste.

ii. Classification of the waste as per European Waste Catalogue (EWC) codes and Ghana's Environmental Sanitation Policy

iii. The source, physical and chemical characteristics, and the amount of waste.

iv. At all stages from initial generation to ultimate disposal (that is, from "cradle to grave"), the means by which the waste is managed, including recycling, reuse, transfer, temporary and long-term storage, and disposal.

v. Any other information required by national or local laws.

Electricity distribution projects, or general systems operation and maintenance, can generate wastes that must be managed by the proponent. These include (but are not limited to) the following:

i. Sediment from settling ponds used to store and "treat" run-off, particularly during construction

ii. Treatment residues and sludges from water and wastewater treatment

iii. Household waste and garbage from construction camps, offices, and workplaces during construction and/or operation

iv. Excess solvents, paints, lubricants, and other organic and inorganic chemicals that are used during construction and operation

v. Contaminated soil and cleanup media that result from releases, spills, and/or cleanup.

vi. Wrecked or worn-out vehicles, equipment, machinery

vii. Demolition debris from buildings, foundation, and other features that are removed during construction or operation

viii. Construction debris, including wood, metal, plastic, concrete and other solid materials.

ix. Pesticide or herbicide containers used in vegetation control

x. Waste from electrical and electronic equipment (WEEE)

xi. Obsolete Ni-Cd alkaline batteries

xii. Rotten Chromated Copper Arsenate (CCA) – treated wood poles

The plan must describe how wastes are to be segregated and managed so as to meet applicable standards for reuse, recycling, storage, and/or disposal, and to prevent adverse impacts on soil and other resources. Plans must also describe the process by which decisions were made regarding waste management and describe all steps by which wastes will be managed. As part of this, Plans should affirmatively describe options that were considered to reduce and/or recycle wastes (and describe why such measures were not adopted if they were not).

If wastes are to be managed off-site, the Plan will require that ECG personnel and/or contractors verify that companies who will transport and manage the wastes (which can include reuse, recycling, and/or disposal) are properly licensed to engage in those practices. Similarly, ECG must verify that off-site disposal sites are properly permitted and designed to contain the wastes being disposed. These requirements apply even if the wastes are sold and thus may not be considered "wastes" *per se*.

4.4. Monitoring, Recordkeeping, and Reporting

The plan must call for periodic inspection or monitoring of all waste management activities, including storage and disposal areas, containment and segregation locations, transport and unloading operations, labelling and material usage records, off-site management, etc. The plan will need to specify:

i. The locations, activities, and records that must be maintained and inspected

ii. The frequency of inspection

iii. The required qualifications of persons who will conduct the monitoring

iv. Records that must be kept and the person responsible for keeping the records

v. Special hazards associated with inspection activities, including appropriate cross-references to the Occupational Health and Safety Plan for both mandatory and recommended risk mitigation measures.

vi. Reports that will be prepared, to whom the reports are to be submitted for review, and the length of time records will be kept. This could include summary reports or detailed technical reports, and could be submitted to ECG management and the relevant government agencies

For wastes with the potential to contaminate soil or water, or to pose risks to humans, the plan must also describe:

i. The chemical and physical characteristics that must be monitored, including quantities and the thresholds of chemical concentrations that trigger differential management requirements.

ii. If a waste is to be analyzed by a laboratory; the permits and certifications of the laboratory must hold, and the appropriate quality assurance and quality control measures that are required by each party in the chain of custody.

The Plan must describe what actions will be taken, and by whom, if inspection results show that any aspect of waste management does not meet applicable regulations or other requirements. The Plan must also describe actions to be taken if monitoring shows that waste management has resulted in contamination of water, air, or soil. In addition, the Plan must cross-reference emergency preparedness and response plans in cases where wastes or waste management pose an eminent hazard to human health or the environment.

The Plan will also identify the level within ECG, and competent authorities to which violations of requirements and/or adverse effects due to waste management will be reported. In addition, ECG Legal Services Directorate should provide advice on the length of time that records must be kept, including after construction is complete.

4.5. Implementation

The Plan must identify and describe the responsibilities of all parties, including the ECG project team, contractors, and competent authorities, if any. The plan must also identify the roles and responsibilities within the ECG project team and contractor. This should be shown in an organogram that includes as much detail as possible, down to the individual person.

Oversight activities of contractors and ECG will be laid out in detail in the plan, including the frequency and scope of oversight activities, as described in section 4.4 above. In all cases, ECG remains ultimately responsible for implementation of the plan by contractors.

4.6. Relationship to other plans

Other plans that are or may be related to the plan include:

i. Corporate Environmental and Social Management Plan

ii. Hazardous Materials Management Plan

iii. Water and Air Quality Management Plan

iv. Biodiversity Management/Action Plan

v. Emergency Preparedness and Response Plan.

vi. Safety and Health Policy Guidelines and Procedures Manual.

4.7. Training

The plan must identify training requirements for staff and managers of ECG and/or contractors, including who will be responsible for conducting the training and who must be trained in what skills. Training will focus on the assigned responsibilities of the trainees and will encompass technical and administrative skills needed to perform assigned responsibilities, identification of response actions required in case of incidents, and topics related to occupational health and safety, including personal protective equipment required to conduct assigned activities.

4.8. Revision

The plan will be reviewed at least annually and will be revised, if necessary, to update contractor management procedures and requirements. In addition, it will be updated at the time any new contractor becomes responsible for the project activities.

5. HAZARDOUS MATERIALS MANAGEMENT FRAMEWORK

5.1. Purpose and Applicability

This framework is intended to guide ECG and its contractors in the management of hazardous materials related to the construction, operation and maintenance of the electrical distribution network. ECG and/or its contractor(s) will develop and implement a Hazardous Materials Management Plan that meets the requirements of this framework for the handling, storage, transport, or disposal of fuels, lubricants, insulating oils, pesticides and other hazardous materials. For each new project involving contractor/third party participation, ECG will identify the party or parties responsible for preparing a plan. If the plan is prepared by a contractor or third party, ECG will be responsible for reviewing and approving the plan before it is implemented.

For new projects, plans will be developed before hazardous materials are received and managed, whether during construction, operation, or decommissioning. For the operations and maintenance of existing projects, ECG will develop a manual that will be applied to all scheduled and unscheduled activities.

5.2. Applicable Standards

The plan must ensure the project meets the requirements of national and local laws, international obligations of the host country, and good industry practices, including the requirements listed below. In all cases, site-specific engineering and scientific judgment may be used to confirm that standards are sufficient to prevent unacceptable impacts on the people and environment. If there are inconsistencies among or between requirements, the plan must adopt the more stringent standards unless that requirement conflicts with national law, in which case national laws apply. Key applicable corporate standards include:

5.2.1. Key applicable corporate standards

Key corporate policy, plans, procedures, and standards that apply to the Hazardous Materials Framework are:

i. ECG Environmental Management Plan

ii. ECG Safety & Health Policy Guidelines and Procedures Manual

iii. Emergency Preparedness and Response Plan (EPRP)

5.2.2. Applicable National Legislation

The applicable Ghanaian laws and policies that apply to this framework include:

i. Environmental Protection Act, 2025 (Act 1124)

ii. Environmental Protection (Environmental Assessment) Regulations, 2025 (L.I. 2504)

iii. National Environmental Quality Guidelines, 1998

iv. The Environmental Sanitation Policy, 2010

v. Water Resource Commission Act, 1996 (Act 522)

vi. National Disaster Management Committee Act, 2016 (Act 927)

5.2.3. International Conventions and Protocols

International Conventions and Protocols applicable to this framework are:

i. Stockholm Convention on Persistent Organic Pollutants (POPs), 2001

ii. Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol), 1987

iii. Convention on International Prior Informed Consent Procedure for Certain Trade Hazardous Chemicals and Pesticides in International Trade Rotterdam (PIC)

iv. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989

5.2.4. International Best Management Practices

The following International Best Management Practices are applicable.

i. International Finance Corporation Performance Standard 3: Pollution Prevention and Resource Efficiency

ii. World Bank Group Environmental, Health and Safety Guidelines: General EHS Guidelines – Environmental, Section 1.5 "Hazardous Materials Management"

iii. World Bank Group Environmental, Health and Safety Guidelines for Electricity Transmission and Distribution.

5.3. Approach and Activities

Plans for new projects will initially be developed based on the ESIA or other relevant assessment documents that screen and identify risks and potential impacts from hazardous materials that will be used, stored, disposed, or otherwise managed at a proposed project site. Additional screening and risk identification should also be conducted if needed to identify materials or risks. Plans for existing projects will initially be based on due diligence assessments that evaluate risks of ongoing construction and operations, and again additional screening and risk identification may be needed. All plans will also be informed by and based upon the best judgment of qualified professionals and the experience gained from ongoing activities. Plans will become part of the project's ESMMP.

The best way to prevent the release of hazardous materials is to avoid using them in the first place. Therefore, plans should include an accurate inventory describing the characteristics and quantities of the hazardous materials to be used or produced. If not included in the ESIA or other assessment documents, the plan should also include a definitive determination that there are not technically and economically feasible alternatives that would avoid or reduce the use of the materials.

All hazardous materials used in operations and maintenance must be classified based on the United Nation scheme for the classification of dangerous goods (Derived from Globally Harmonized System of Classification and Labeling of Chemicals, http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html), and the inventory should identify the material, its use/purpose, the amount to be managed, and the location of storage or use. Through the inventory, ECG and/or contractors should explore opportunities throughout the project life cycle to use nonhazardous materials in place of hazardous materials and/or to reduce the use of hazardous materials.

Electricity distribution projects may use hazardous materials as raw material or produce hazardous

materials as by-products, so that different types of hazardous materials may be used or otherwise managed. The most common hazardous materials managed by electricity distribution projects include:

i. Diesel, petrol/gasoline, fuel oil, and special fuel mixtures
ii. Machinery/engine lubricants and coolants
iii. Hydraulic oil, brake fluid, and transmission fluid
iv. Paints and solvents
v. Cleaning compounds and sanitizing chemicals
vi. Cement mixes
vii. Asbestos in building materials
viii. Pesticides for managing vegetation, insects, rodents, or other nuisance flora and fauna.
ix. Insulating oils and gases [Polychlorinated Biphenyls (PCBs) and Sulfur Hexafluoride (SF_6)].
x. Wastewater treatment reagents and residues.
xi. Contaminated soil at spill sites and associated cleanup media.

Plans must include a hazardous material site layout, describing where the various hazardous materials are used, stored, disposed, or otherwise managed. In addition, plans should describe security measures, including fencing and other safety requirements as well as the need for locked isolation, where appropriate. Plans must also describe the requirements for hazardous material transport and loading or unloading, along with authorized transport routes. Appropriate transferring vehicles and machinery should be described as well.

It is important for the plan to describe storage, containment, and handling requirements for each hazardous material, which should be in accordance with appropriate Material Safety Data Sheet (MSDS) requirements. This would include the size, volume, and containment method for hazardous material storage. The plan must describe how the hazardous materials are to be labeled, which at a minimum should clearly identify the name and hazard classification, and may give examples of representative hazardous materials placards. The plan will also identify where an MSDS for each

hazardous material will be placed. The plan must also provide a material segregation scheme that prevents or reduces the risks of hazardous reactions that could occur. When access to hazardous materials is restricted, the plan should identify authorized personnel.

The plan must describe the ventilation systems that will be used in areas where chemicals or reagents may be dispensed or mixed, and where volatile materials are to be stored or used. The plan must also provide measures to control accidental releases of liquid hazardous materials during storage and transfer. When there are large volumes of fuel or other hazardous materials stored, or when sensitive environments could be affected, the plan should describe leak detection and secondary containment protection.

The plan must also provide procedures by which the response to spills or releases of hazardous materials will be managed. This will include the means by which spilled materials will be controlled and contained, how they should be cleaned up (which would depend on location and amount, among other things), and how contaminated soils and cleanup media will be managed.

Additionally, the plan should include the management plan should include a system for community awareness, notification and involvement that should be commensurate with the potential risks identified for the project during the hazard assessment studies. This is when hazardous materials are in use above threshold quantities.

Preparation of the plan should be coordinated with the Emergency Preparedness and Response Plan so that responses to major spills which could potentially threaten human health and safety, or the environment are dealt with consistently.

5.4. Monitoring, Recordkeeping, and Reporting

Plans will require that hazardous material inventories be kept up to date, with changes in materials, quantities, use, and management recorded at the time they occur, or as soon as practicable afterward. The plan will be updated as soon as a new hazardous material is to be introduced to the site. The plan will also identify the level within ECG to which violations of requirements and/or adverse effects due to hazardous materials management will be reported.

The plan must call for periodic (at least twice per year during construction and annually during operation) inspection or monitoring of all hazardous materials use, storage, transport, and disposal sites and activities. The plan will need to specify:

i. The location, activities, and records that must be inspected, including the areas to be inspected, containment and segregation measures, transport and unloading operations, labelling and material usage records, etc.

ii. The frequency of inspection

iii. The required qualifications of persons who will conduct the monitoring

iv. Records that must be kept and the person responsible for keeping the records

v. Hazards from inspection, including appropriate cross-references to the Occupational Health and Safety Plan for required and recommended risk reduction measures

vi. Special hazards associated with inspection activities, including appropriate cross-references to the Occupational Health and Safety Plan for both mandatory and recommended risk mitigation measures.

vii. Reports that will be prepared, to whom the reports are to be submitted for review, and the length of time records will be kept. This could include summary reports or detailed technical reports and could be submitted to ECG management and concerned government agencies.

The plan shall specify the actions to be undertaken, and the responsible parties, in the event that inspection findings reveal non-compliance with applicable regulatory requirements or the plan's provisions. Additionally, it must address the procedures to be followed if environmental monitoring data (water, soil, or air) indicate a potential release of hazardous materials due to their use, storage, or disposal.

The plan will require that contractors and subcontractors who use, store, or otherwise manage hazardous materials prepare and submit their own inventories or records to the project company at least twice a year during construction and annually during operation. The plan will require that major

changes in the quantities of hazardous materials managed by contractors, and in management methods, be reported to the project team as they occur. In addition, the ECG Legal Directorate should provide advice on the length of time that records must be kept, including after construction is complete.

5.5. Implementation

The plan must identify and describe the responsibilities of all parties, including ECG, contractors, and competent authorities. The plan must also identify the roles and responsibilities within ECG and contractors. This should be shown in organograms that include as much detail as possible, down to the individual position/person.

Oversight activities by contractors and ECG will be laid out in detail in the plan, including the frequency and scope of oversight activities, as described in section 5.4 above. In all cases, ECG will remain ultimately responsible for implementation of the plan, and management of the hazardous materials by contractors.

5.6. Relationship to other plans

Other plans that are or may be related to the Hazardous Materials Management Plan include:

i. ECG Corporate Environmental Management Plan
ii. Emergency Preparedness and Response Plan
iii. Waste Management Plan
iv. Water and Air Quality Management Plan
v. Safety & Health Policy Guidelines and Procedures Manual

5.7. 5.7 Training

The plan must identify training requirements for ECG staff and managers and/or contractors, including who will be responsible for conducting the training and who must be trained in what skills. Training will focus on the assigned responsibilities of the trainees, and will cover technical and administrative skills needed to perform assigned responsibilities related to hazardous materials management, identification of response actions required in case of incidents, and topics related to occupational safety

and health, including personal protective equipment required to conduct assigned activities.

The Plan will require workers, including drivers, to receive specific safety and health training for the materials they use or could be exposed to, and all drivers and equipment operators must receive training for fueling and spill cleanup. Workers and drivers will also receive training for spill response and cleanup.

Only workers who have received the relevant training will be allowed to work with or be exposed to hazardous materials.

5.8. 5.8 Revision

ECG will review the plan at least annually, and whenever there is a significant change in operations or hazardous materials management. When it is determined that any mitigation measure is or may be insufficient to achieve its purpose, a review will be conducted. The plan will also be reviewed, and revised, if necessary, upon the introduction of any new hazardous materials to a project construction site, general operations and maintenance routines, and following a major spill or release of a hazardous substance. It will be revised as necessary to update or improve materials management, or to ensure compliance with applicable standards and good industry practice.

Beyond the normal plan reviews, the inventory of hazardous materials must be updated at least on annual basis, whenever a new hazardous material is to be managed, or when there is a significant change in the quantities of hazardous materials or their management methods.

6. WATER & AIR QUALITY MANAGEMENT FRAMEWORK

6.1. Purpose and Applicability

This framework is intended to guide the means by which ECG and contractors will ensure that projects and activities do not cause unacceptable contamination or impacts to water and air. ECG and/or contractors at each project site where activities could affect water and air quality will develop and implement a Water and Air Quality Management Plan that meets the requirements of this framework. ECG will identify the party responsible for preparing the plan. If the plan is prepared by a contractor or third party, ECG is responsible for reviewing and approving the plan before it is implemented.

For new projects, plans will be developed before construction begins and will be implemented throughout construction, operation, and decommissioning. For system operations and maintenance, ECG will develop a manual that will be applied to all scheduled and unscheduled activities.

6.2. Applicable Standards

At a minimum, the plan must ensure the project meets the requirements of national and/or local laws, international obligations of Ghana, and good industry practices, including the requirements listed below. In all cases, site-specific engineering and scientific judgment may be used to confirm that standards are sufficient to prevent unacceptable impacts on people and environment. If there are inconsistencies among or between requirements, the plan must adopt the more stringent requirement unless it conflicts with national laws, in which case national laws apply.

6.2.1. Key applicable corporate standards

These include:

i. ECG Environmental Management Plan

ii. Safety & Health Policy Guidelines and Procedures Manual

iii. Code of Conduct for ECG's Third-Party Contractors and Staff

iv. Corporate Project Implementation Manual (CPIM)

6.2.2. Applicable National Legislation

Ghanaian laws applicable to water and air quality management include:

i. Water Resource Commission Act 1996 (Act 522)

ii. Riparian Buffer Zone Policy

iii. Environmental Protection Act, 2025 (Act 1124)

iv. Environmental Protection (Environmental Assessment) Regulations, 2025 (L.I. 2504)

v. National Environmental Policy, 1999

vi. National Environmental Quality Guidelines, 1998

vii. Environmental Impact Assessment Guideline for the Energy Sector (Volume 2)

viii. Wetland Management (Ramsar Sites) Regulation 1999

ix. Labour Act 2003 (Act 651)

x. Factories, Offices and Shops Act, 1970 (Act 328)

xi. The Environmental Sanitation Policy

xii. Lands Act 2020 (Act 1036)

6.2.3. International Conventions and Protocols

The following international conventions and protocols apply to the framework.

i. United Nations Convention on the Law of the Sea, 7 June 1983

ii. The 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992 Water Convention)

iii. The 1997 UN Convention on Non-Navigational Uses of International Watercourses (1997 Watercourses Convention).

6.2.4. International Best Management Practices

The international best management practices relating to this framework include:

i. International Finance Corporation Performance Standard 3: Pollution Prevention and Resource Efficiency

ii. World Bank Group General Environmental, Health and Safety (EHS) Guidelines: General EHS Guidelines – Environmental, section 1.3 "Wastewater and Ambient Water Quality"

iii. World Bank Group Environmental Health and Safety Guidelines for Electricity Transmission and Distribution

6.3. Approach and Activities

Plans for new projects will initially be based on the ESIA, ECG Corporate EMP and other assessment documents that identify potential impacts from discharges of water or air from a proposed project. Plans for existing projects will initially be based on due diligence assessments that evaluate risks of ongoing operations and discharges. All plans will also be informed by and based upon the best judgment of qualified professionals and the experience gained from ongoing activities. Plans will become part of the project's ESMMP.

The first principle of the plan should be to minimize the generation, emissions, or effluent waste streams. To that end, the plan should ensure there is an accurate inventory and assessment of potential waste streams and discharges so that exposure of water or air to site activities is minimized, that air emissions, wastewater and process waters are treated as needed to meet standards, and that wastewater and process waters are repurposed or reused wherever possible.

Electricity distribution projects, or general systems operation and maintenance, can use water for many different purposes and natural water can come on-site and require management. This can lead to different types of wastewaters that may be generated and discharged and that must be considered by the plan. There could also be the discharge, release or spill of waste oil, acid or base that could potentially contaminate water resources. These include but are not limited to the following:

i. Run-off from precipitation primarily during construction

ii. Sanitary wastewater during construction and/or operation and maintenance activities

iii. Household wastewater ("gray" water) during construction and/or operation and maintenance activities

iv. Petroleum, solvent, or paint-contaminated water from workshops, vehicle/equipment wash-stations, fueling stations, parking lots, work locations, etc., including run-off from these areas

v. Insulating oil-contaminated water from transformer storage, installation, maintenance and disposal

vi. Pesticide or herbicide contamination from maintenance activities

vii. Leachates from damaged acid/alkaline base batteries

viii. Leachates from waste oil containers

ix. Fugitive dust from excavation of civil works and trenching

x. Emissions from generators and other heavy equipment

The plan must describe how emissions will be managed and how clean, dirty, and contaminated water or liquid waste will be segregated and treated so as to meet applicable standards for use, reuse, or discharge, and to prevent adverse impacts on receiving waters or other resources. The plan must also describe the process by which decisions were made regarding air and water quality management and describe all steps by which process waters and wastewaters will be managed. As part of this, the plan should affirmatively describe options that were considered to reduce and/or recycle wastewater (and describe why such measures were not adopted if they were not).

The plan must also provide for management of treatment residues, including sludges, sediments, oily debris, etc. Such management may be deferred to a Waste Management Plan if the wastewater and waste plans are appropriately cross-referenced and monitored.

6.4. Monitoring, Recordkeeping, and Reporting

The Plan must call for periodic monitoring of all machinery and other sources generating potentially harmful emissions and process waters and waste streams with the potential to contaminate or adversely affect surface water, soils, or other resources. The plan will specify, for each waste stream of concern:

i. The chemical and physical characteristics that must be monitored, including flow rates and the maximum allowable concentration of contaminants or constituents

ii. The frequency of monitoring

iii. The required qualifications of persons who will conduct the monitoring

iv. The technical specifications of equipment, instruments, and measuring devices, including requirements for cleaning, calibration, and maintenance

v. Special hazards associated with inspection activities, including appropriate cross-references to the Occupational Health and Safety Plan for both mandatory and recommended risk mitigation measures

vi. Records that must be kept, and the person(s) responsible for keeping the records

vii. Reports that will be prepared, to whom the reports are to be submitted for review, and the length of time records will be kept. This could include summary reports or detailed technical reports and could be submitted to ECG management and government agencies. The plan must call for a summary report to be submitted to ECG at least on annual basis and to other parties as required by permits, agreements, contracts, and other instruments

viii. If air and water is to be analyzed in laboratories, the permits and certifications the laboratory must hold, and the appropriate quality assurance and quality control measures that are required by each party in the chain of custody.

The plan will also call for periodic inspections by ECG of locations where wastewater is stored, treated, and/or discharged to verify that water management meets the requirements of the plan.

The plan must describe what actions will be taken, and by whom, if monitoring or inspection results show that air and water quality does not meet applicable standards, including contingency actions for instances where air or water quality impacts could threaten human health or significant environmental resources, or otherwise require dedicated action. The plan will also identify the level within ECG to which violations of standards and/or adverse effects due to water quality or management will be reported.

In addition, the ECG Legal Services Directorate should provide advice on the length of time that records must be kept, including after construction is completed.

6.5. Implementation

The Plan must identify and describe the responsibilities of all parties, including ECG, contractors, and competent authorities. The Plan must also identify the roles and responsibilities within ECG and contractors. This should be shown in organograms that include as much detail as possible, down to the individual position/person.

Oversight activities by contractors and ECG will be laid out in detail in the Plan, including the frequency and scope of oversight activities, as described in section 6.4 above. In all cases, ECG will remain ultimately responsible for implementation of the Plan, and management of the water and air quality by contractors.

6.6. 6.6 Relationship to other Plans

Other plans that are or may be related to the water and air quality management plan include:

i. Corporate Environmental Management Plan
ii. Hazardous Materials Management Plan
iii. Waste Management Plan
iv. Emergency Preparedness and Response Plan.
v. Safety & Health Policy Guidelines and Procedures Manual

6.7. Training

The Plan must identify training requirements for staff and managers of ECG and/or contractors, including who will be responsible for conducting the training and who must be trained in what skills. Training will focus on the assigned responsibilities of the trainees and will encompass technical and administrative skills needed to perform assigned responsibilities, identification of response actions required in case of incidents, and topics related to occupational health and safety, including personal protective equipment required to conduct assigned activities.

6.8. Revision

The Plan will be reviewed at least annually and will be revised, if necessary, to update contractor management procedures and requirements. In addition, it will be updated at the time any new contractor becomes responsible for project activities.

7. SITE REHABILITATION AND LANDSCAPING MANAGEMENT PLAN FRAMEWORK

7.1. Purpose and Applicability

This framework is intended to guide ECG and its contractors in minimizing the area of disturbance, creating a stable landscape, and restoring land and vegetation of disturbed areas associated with the construction and maintenance of any project associated with the ECG. To help accomplish these goals, the ECG and/or contractor(s) will develop and implement a Site Rehabilitation and Landscaping Plan that meets the requirements of this framework for each project where construction or other activities would result in adverse impacts on vegetation or landscape if no restoration activities were undertaken. ECG will identify the party or parties responsible for preparing the plan (contractor or third party) and will be responsible for reviewing and approving the plan before it is implemented.

For new projects, ECG will ensure that plans are developed prior to undertaking any activities that involve clearing land or cutting vegetation. For the operations and maintenance of existing projects, ECG will develop a manual that will be applied to all scheduled and unscheduled activities.

This framework is designed to guide ECG and its contractors in minimizing land disturbance, promoting landscape stability, and restoring land and vegetation affected by construction and maintenance activities associated with ECG projects.

To achieve these goals, ECG and/or its contractors will develop and implement a Site Rehabilitation and Landscaping Plan for each project where activities could negatively impact vegetation or the landscape without appropriate restoration measures. Each plan must comply with the requirements outlined in this framework. ECG will assign responsibility for preparing the plan, whether to a contractor or third party, and will review and approve it before implementation.

For new projects, ECG will ensure that the plan is developed before any land clearing or vegetation removal begins. For existing projects, ECG will prepare a manual to guide all scheduled and unscheduled operations and maintenance activities.

7.2. Applicable Standards

At a minimum, the plan must ensure the project meets the requirements of national/local laws, international obligations of the host country, and good industry practice, including the requirements listed below. In all cases, site-specific engineering and scientific judgment may be used to confirm that standards are sufficient to prevent unacceptable impacts on the environment. If there are inconsistencies among or between requirements, the plan must adopt the more stringent one unless that requirement conflicts with national laws, in which case national laws apply.

7.2.1. Key Applicable Corporate Standards

This includes:

i. ECG Environmental Management Plan (EMP)
ii. Safety & Health Policy Guidelines and Procedures Manual
iii. Code of Conduct for ECG's Third-Party Contractors and Staff
iv. Corporate Project Implementation Manual (CPIM)
v. ECG Stakeholder Engagement Plan

7.2.2. Applicable National Legislation

This include:

i. Environmental Protection Act, 2025 (Act 1124)
ii. Environmental Protection (Environmental Assessment) Regulations, 2025 (L.I. 2504)
iii. National Environmental Quality Guidelines, 1998
iv. Environmental Impact Assessment Guideline for the Energy Sector (Volume 2)

7.2.3. International Conventions and Protocols

These include:

i. The Convention on Wetlands of International Importance especially as Waterfowl Habitat, 1971 (Ramsar Convention).

ii. The Convention Concerning the Protection of World Cultural and Natural Heritage, 1972 (UNESCO World Heritage Convention).

7.2.4. International Best Management Practices

The international best management practices relating to this framework include:

i. World Bank Group Environmental, Health and Safety (EHS) General Guidelines

ii. World Bank Group Environmental, Health and Safety (EHS) Guidelines for Electricity Transmission and Distribution.

iii. IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

7.3. Approach and Activities

The key objective of the rehabilitation and landscaping is to restore disturbed land and vegetation, so they are at least equivalent to their pre-existing condition, with self-sustaining vegetation and minimal visual disturbance.

The plan will be based in part on baseline conditions that existed prior to project disturbance, which would be described in the ESIA or other assessment documents. If this information is not available, those who prepare the plan will need to develop an understanding of baseline conditions.

The plan will include a comprehensive site layout and a detailed description of the location and area of disturbance. It will establish goals for ultimate land use and describe the details of how and when site restoration will be implemented and completed. Mitigation measures required by the ESIA or other relevant assessment documents will be the starting point, but additional measures will be adopted as needed to achieve the goals of the plan.

For all project activities that involve land clearing, vegetation removal, or other major landscape disturbance, the plan should introduce rehabilitation strategies including:

i. Keeping the construction disturbance footprint as small as possible.

ii. Rehabilitating disturbed areas not required for ongoing use in as timely a manner as possible (so-called “concurrent reclamation”).

iii. Salvaging topsoil and subsoil for use in site rehabilitation and storing it so it maintains its value as a growth medium (e.g., limits to pile sizes, erosion controls).

iv. Covering disturbed areas, including road and earthworks batters, with subsoil and topsoil as needed, prior to seeding or planting grasses or other native species.

v. Implementing sediment and erosion controls as required by the Runoff and Erosion Control Plan until rehabilitation is completed;

vi. Screening buildings and other new visual objects with trees or other measures so they “blend” into the landscape.

vii. Using native (and local) species of grass and other plants for all reinstatement and landscaping works, with local seed sources used where practical. The plan should define the preferable and required plant species, based on flora baseline surveys, and identify appropriate sources, which may include seed collection in nearby areas to serve future rehabilitation.

viii. Monitoring rehabilitated areas regularly during and after construction until vegetation is self-sustaining for at least three years. Undertake remediation as needed, which may include watering during dry periods, installing protective sleeves, or other measures to support plant survival and establishment.

ix. Maintaining site vegetation and landscaping on project sites throughout life cycle of the project.

The plan must define rehabilitation completion criteria for determining whether and when a disturbed area is completely rehabilitated. The plan should define realistic but achievable goals, including at least general guidelines on desired percentage of ground cover, tree or shrub height, canopy cover, complexity of different kinds of vegetation communities based on the land use prior to clearing, pre-existing health and integrity of the landscape, and land use requirements.

The plan will involve consultations with civil engineers and landscape architects during the design phase, where applicable, as well as engagement with local stakeholders to ensure their concerns and preferences are considered in the development and implementation of rehabilitation and landscaping measures.

For projects where disturbance will be in or near protected areas or areas valuable for biodiversity or cultural resources, the plan will need to be developed in consultation with competent authorities and other qualified experts.

7.4. Monitoring, Recordkeeping, and Reporting

The plan must call for periodic inspection or monitoring of the construction footprint and project activities against the requirements of the plan. For verification and monitoring, the plan will need to specify:

i. The locations and activities that will be monitored

ii. The measurable or observable criteria by which implementation of rehabilitation and landscaping management will be judged successful, and when they will be considered complete

iii. The timing and frequency of inspection and monitoring

iv. The required qualifications of persons who will conduct the monitoring and inspection

v. Records that must be kept and the person responsible for keeping the records

vi. Reports that will be prepared, to whom the reports are to be submitted for review, and the length of time records will be kept. This could include summary reports and/or detailed technical reports, and could be submitted to ECG management, government agencies, or lenders

The plan must describe what actions will be taken, and by whom, if inspection or monitoring results show that satisfactory natural regeneration is not occurring, or the rehabilitation management practices do not meet applicable requirements, including the requirements of the plan itself.

The plan will also identify the level within ECG to which violations of requirements and/or failures of mitigation measures to achieve their goals must be reported. In addition, the ECG Legal Services Directorate should provide advice on the length of time that records must be kept, including after construction is completed.

7.5. Implementation

The plan must identify and describe the responsibilities of all parties, including ECG, contractors, and competent authorities. The plan must also identify the roles and responsibilities of individual positions within ECG and contractors. This should be shown in an organogram that includes as much detail as possible, down to the individual person or position.

Oversight activities of contractors and ECG will be laid out in detail in the plan, including the frequency and scope of oversight activities. In all cases, ECG remains ultimately responsible for implementation of the plan by contractors.

7.6. Training

The plan must identify training requirements for ECG staff and managers and/or contractors, including who will be responsible for conducting the training and who must be trained in what skills. Training will focus on the assigned responsibilities of the trainees and will cover technical and administrative skills needed to perform assigned responsibilities, identification of response actions required in case of incidents, and topics related to occupational health and safety, including personal protective equipment required to conduct assigned activities.

7.7. Relationship to Other Plans

Other plans that are, or may be related to, the Site Rehabilitation and Landscaping Plan include:

i. Waste Management Plan

ii. Hazardous Materials Management Plan

iii. Water Quality Management Plan

iv. Runoff and Erosion Control Plan

v. Stakeholder Engagement Plan

7.8. Revision

The plan will be reviewed by the contractor and/or ECG at least annually, whenever there is a significant change in project or site conditions, when it is determined that any mitigation measure is or may be insufficient to achieve its purpose, and where non-compliance occurs with regard to the conditions of approval. It will be revised when necessary to update or improve rehabilitation and landscaping management, and when it is determined necessary to ensure compliance with applicable standards and good industry practice.

8. CULTURAL PROPERTY PROTECTION MANAGEMENT FRAMEWORK

8.1. Applicability and Objective

This framework outlines how ECG and its contractors will protect cultural heritage during construction, operations, and maintenance activities. In areas where cultural heritage may be present, ECG and/or its contractors will develop and implement a Chance Find Procedure that aligns with this framework and applicable standards. ECG will designate the party responsible for preparing the procedure for each project. A customizable example is provided in the annex.

For new projects or activities in culturally sensitive areas, the procedure must be in place before construction begins and remain active throughout construction and any operations involving ground disturbance. For ongoing operations, the procedure must be established prior to further disturbance. Additionally, the procedure will be developed or updated in response to a chance find or as required by competent authorities.

8.2. Applicable Requirements and Standards

At a minimum, the procedure must ensure the project meets the requirements of national and/or local laws, international obligations of the host country, and good industry practices, including the requirements listed below. In all cases, site-specific engineering and scientific judgment may be used to confirm that standards are sufficient to prevent unacceptable impacts on the environment. If there are inconsistencies among or between requirements, the procedure must adopt the more stringent one unless that requirement conflicts with national laws, in which case national laws apply.

8.2.1. Key Applicable Corporate Standards

These include:

i. ECG Environmental Management Plan (EMP)

ii. Safety & Health Policy Guidelines and Procedures Manual

iii. Code of Conduct for ECG's Third-Party Contractors and Staff

iv. Corporate Project Implementation Manual (CPIM)

v. Stakeholder Engagement Plan

8.2.2. Applicable National Legislation:

i. Environmental Protection Act, 2025 (Act 1124)

ii. Environmental Protection (Environmental Assessment) Regulation, 2025 (LI 2504)

iii. The Constitution of Ghana, 1992

iv. The Cultural Policy of Ghana, 2004

v. Public Property Protection Act, 1977 (SMCD 140)

vi. Ghana Museums Act, 1969 (NLCD 387)

8.2.3. International Conventions and Protocols

The International Conventions and Protocols to this framework include:

i. Convention on the Protection and Promotion of the Diversity of Cultural Expressions, 2005

ii. Convention Concerning the Protection of World Culture and Natural Heritage (World Heritage Convention), 1972.

iii. Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property, 1970

iv. Convention on the Protection of the Underwater Cultural Heritage, 2001.

v. Convention for the Safeguarding of the Intangible Cultural Heritage, 2003.

8.2.4. International Best Management Practices

The applicable international best management practices are:

i. IFC Performance Standard 8 (Cultural Heritage) and its accompanying Guidance Note

8.3. Approach and Activities

The need for a Chance Find Procedure will be determined through consultation with the competent cultural heritage authorities and based on findings from the ESIA or other relevant assessments. If these assessments indicate a potential risk to tangible cultural heritage, ECG or the contractor will develop a procedure, which will be integrated into the project's ESMMP.

The procedure will describe actions to be taken in the event that cultural heritage is discovered, which will include the following steps:

i. Stopping work immediately, limiting ongoing activities to those necessary to prevent damage or disturbance to the cultural heritage and ensure worker safety.
ii. Securing the site, using warning tape, stakes, signs, or other markers. The procedure should also specify when site protection may require observers or guards to prevent unauthorized access.
iii. Reporting the findings to site managers, ECG, local authorities/traditional councils, and competent heritage authorities. The procedure will define the type and level of detail required in reports.
iv. Engaging qualified professionals to assess and advise on the findings.
v. Defining actions and deadlines in the event that competent authorities are not responsive, with all actions consistent with the need to comply with national laws and to protect cultural heritage.
vi. Resuming work, only after recommendations from qualified professionals and formal approval from the relevant authorities, as outlined in the procedure.

The procedure should also outline actions to be taken in cases where there is uncertainty whether a discovery represents cultural heritage. In such cases, the procedure should require the same shutdown-startup procedure as for discovery of known cultural heritage as well as consultation with qualified professionals, who will advise whether cultural heritage has been or is likely to have been discovered.

8.4. Monitoring, Recordkeeping, and Reporting

The procedure will specify the types of reports required in the event of a discovery, the timeframe for their preparation, and the designated recipients. Reports must be submitted to site managers, ECG, the Local Authority or Traditional, and relevant competent authorities.

For projects in areas with a high likelihood of uncovering cultural heritage, ECG and/or the contractor will retain a qualified professional to advise ECG and conduct periodic site inspections to ensure no discoveries have gone unnoticed. The frequency and scope of these inspections will be determined in consultation with the competent authorities.

Additionally, the ECG Legal Services Directorate will advise on the required retention period for all related records.

8.5. Implementation

The procedure must identify and describe the responsibilities of all parties, including ECG, contractors, and competent authorities. The procedure must also identify the roles and responsibilities of individual positions within ECG and contractors. This should be shown in an organogram that includes as much detail as possible, down to the individual person or position.

Oversight activities of contractors and ECG will be laid out in detail in the procedure, including the frequency and scope of monitoring and other oversight activities. In all cases, ECG remains ultimately responsible for implementation of the procedure by contractors.

8.6. Relationship with other Plans

This procedure is part of the project ESMMP and is related to the Stakeholder Engagement Plan (SEP).

8.7. Training

The procedure must identify training requirements for staff and managers of ECG and/or contractors,

including who will be responsible for conducting the training and who must be trained in what skills. Training will focus on the assigned responsibilities of the trainees and will encompass technical and administrative skills needed to perform assigned responsibilities, identification of response actions required in case of incidents, and topics related to occupational health and safety, including PPE required to conduct assigned activities.

8.8. Revision

The Chance Find Procedure need to be flexible and subject to adaptation based on observed results. The procedure will be reviewed by ECG at least annually, and whenever there is a significant change in site conditions, or when it is determined that any mitigation measure is or may be insufficient to achieve its purpose. The revision of the procedure should ensure compliance with applicable standards and good industry practice, including IFC Performance Requirement 8.

EXAMPLE OF CHANCE FIND PROCEDURE

Applicability and objective

This procedure is intended to prevent damage to or loss of articles or artifacts with historic or prehistoric value. This cultural heritage chance finds procedure will be in place to stop works and require investigation by an archaeologist in case such articles or artifacts are encountered during project activities. ECG will consult with the relevant authorities *[Ministry of Environment and, Science, Technology and Innovation, Ministry of Tourism, Culture and Creative Arts, Ministry of Local Government and Rural Development]* to ensure this procedure is acceptable to them and that it complies with local and national regulations. Updates or amendments will be made by the contractors and approved by ECG where appropriate.

Procedure upon discovery

Suspension of work

Upon discovery of Physical Cultural Resources (PCR), the contractor will stop work immediately. In some cases, all work will need to be suspended, in others just the work in the immediate vicinity of the find will need to stop, in others still, all work within a certain radius of the find must cease. Work suspension will depend on the type of find and if there is any doubt all work will stop until a qualified archaeologist provides advice as to the extent of stoppage. After stopping work, the Contractor must immediately report the discovery to the ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor. The contractor may not be entitled to claim compensation for work suspension during this period.

In the event that ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor has reason to believe a discovery has been made but was not reported, he or she is entitled to suspend work.

Conditions and requirements for work stoppage:

With the approval of the ECG Environmental Officer, ECG Regional SHE Officer or Project

Supervisor, the contractor must demarcate and limit access to the site where the discovery was made. In some cases, ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor may decide that the item can be removed, and work may continue. (For example, where the item is a single coin of archaeological value). If the find is more significant, he or she will notify the Project Manager and a qualified expert about the find. The Project Manager should then issue a cease work order. With the advice of the qualified expert regarding the area of concern, the ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor or the contractor will secure the discovery site and take temporary site protection measures (warning tape and stakes, avoidance signs) until the responsible authorities and/or authorized experts take over. In case there are known or likely to be removable antiquities or sensitive that remain, a night guard should be present until the responsible authority takes over.

Chance Find Report

The contractor will submit a Chance Find Report to the ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor within one day of the find. This will record the following information:

i. Date and time of the discovery.

ii. Location of the discovery [including Global Position System (GPS) location].

iii. Description of the PCR (inclusive of pictures).

iv. Estimated weight and dimensions of the find.

v. Scientific, historic, or other value of the find.

vi. Temporary and/or permanent protection.

vii. Implications for the project.

Arrival and Actions of Cultural Authority

It is expected that the responsible authorities will send a representative to the discovery site within a specific time frame, such as 24 hours, particularly if work has been suspended (details will be agreed

between the authority, ECG and the contractor). The representative of the authority will determine the action to be taken which could include such things as:

i. Removal of the PCR deemed to be of significance.

ii. Execution of further excavation within a specified distance of the discovery point.

iii. Extension or reduction of the area demarcated by the contractor.

These actions should be taken within seven calendar days of the representative arriving on site in the case of the suspension of works. The contractor may or may not be entitled to claim compensation for work suspension during this period (depending upon the contract conditions).

If the cultural authority fails to arrive within the stipulated period (for example, 24 hours), the ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor will have the authority to extend the period by a further stipulated time.

The responsible authorities would be in charge of protecting and preserving the site, with the support of the ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor. The authorities would be expected to evaluate the find using criteria relevant to cultural heritage including aesthetic, historic, scientific or research, social and economic values. Decision on how to handle the find could include changes in the project layout (in case of finding an irrevocable remain of cultural or archaeological importance), conservation, preservation, restoration, or salvage. Once the decision is made, the ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor will consult with ECG's Project Manager regarding how to implement that decision or otherwise protect the cultural heritage.

If the responsible authority does not send a representative to the site, and does not give other lawful orders regarding how the site and the find should be managed, the ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor will consult with qualified expert(s) for advice on how to proceed. This could include independent excavations, modifications to activities, or resumption of activities, with the decision based on criteria relevant to cultural heritage safeguards. In all cases, activities will comply with applicable laws and regulations.

8.8.1. Resumption of Work

Work may only resume upon approval from the responsible authorities or, if no response is received, based on the advice of qualified experts. In all cases, work must not resume if it would violate applicable laws or regulations

8.9. Monitoring, Recording and Reporting

As noted above, the contractor will have submitted a Chance Find Report within one day of the find and the ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor will have informed the authorities immediately. ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor will also report immediately to the Project Manager, who in turn will report to ECG management about the work suspension.

Once work is resumed, the ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor will prepare a Review Report and submit it to management. The Review Report will include the following information:

i. Date and time of the discovery.

ii. Location and description of the discovery.

iii. Actions taken to protect the cultural resource.

iv. Compensation and cost during this process.

v. Future implications for the project.

8.10. Implementation

i. ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor Responsibilities:

a. Secure the discovery site and take temporary site protection measures (warning tape and stakes, avoidance signs, etc.) until the responsible authorities or other qualified expert(s) take over.

b. Receive and review the Chance Find Report;

c. Notify the Project Manager and company's management.

d. Notify the responsible authorities within 24 hours of receiving the Chance Find Report.

e. Instruct the contractor to undertake such measures as are needed to protect the site and the find pending legal and/or expert advice.

f. Instruct the contractor to resume work once permission is granted by the responsible authority or so advised by qualified experts.

g. Prepare and submit a Review Report.

ii. Project Manager Responsibilities:

a. Issue a formal cease work order to the contractor.

b. Issue a formal order to resume work, with or without conditions.

c. Report to company's management about the find.

iii. Responsible Authorities' Responsibilities:

a. Be in charge of protecting and preserving the site.

b. Evaluate the find.

c. Decide how to handle the find.

iv. Contractor's Responsibilities:

a. Stop work immediately upon making a discovery.

b. Prepare and submit the Chance Find Report to ECG Environmental Officer, ECG Regional SHE Officer or Project Supervisor.

c. Manage workers so as not to disturb the site and the discovery while the site is secured.

d. Implement the ultimate decision concerning management of the finding.

Training

Each contractor will be required to adopt this Chance Finds Procedure or to develop its own procedure that is consistent with this procedure. The SHE Division will be responsible for the training and monitor the project team, contractor and their workers, on how to identify the types of PCR that may be present, and the actions to be taken if discoveries are made. Training will include their responsibilities under this Chance Finds Procedure.

Revision

This procedure will be reviewed by the contractor and ECG at least annually during project construction and following any discovery of cultural heritage and will be revised if necessary if it is determined that a change is needed to improve the effectiveness and efficiency of the procedure. During ECG operations, the procedure should be reviewed if new areas are to be disturbed or if required by competent authorities or ECG.