

Esso Highlands Limited



Papua New Guinea LNG Project

**Environmental and Social Management Plan -
Production**

PGGP-EH-OPZZZ-000004

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ACRONYMS

ACRONYM	DESCRIPTION
DEC	Papua New Guinean Department of Environment and Conservation
ECA	Export Credit Agency
EHL	Esso Highlands Limited
EIS	Project Environmental Impact Statement
EMP	Environmental Management Plan
ESMP	Environmental and Social Management Plan
HGCP	Hides Gas Conditioning Plant
IESC	Lender Group's Independent Environmental and Social Consultant
IFC	International Finance Corporation
L&CA	Land and Community Affairs
LNG	Liquefied Natural Gas
MoC	Management of Change
OI	Operations Integrity
OIMS	Operations Integrity Management System
PNG	Papua New Guinea
SHE	Safety, Health and Environment
SMP	Social Management Plan
SSHES	Safety, Security, Health, Environmental and Social
U.S.	United States of America

1.0 INTRODUCTION

This Environmental and Social Management Plan (ESMP) has been developed for the production phase of the Papua New Guinea Liquefied Natural Gas (PNG LNG) Project (the Project).

This ESMP consists of one main document and nine supporting appendices, as illustrated in Figure 1-1. Two of the appendices are individual Environmental Management Plans (EMPs). The first of these covers the upstream facilities and pipelines while the second covers the LNG Plant site. The remaining seven are theme-based Social Management Plans (SMPs) that collectively cover all three locations and affected communities.

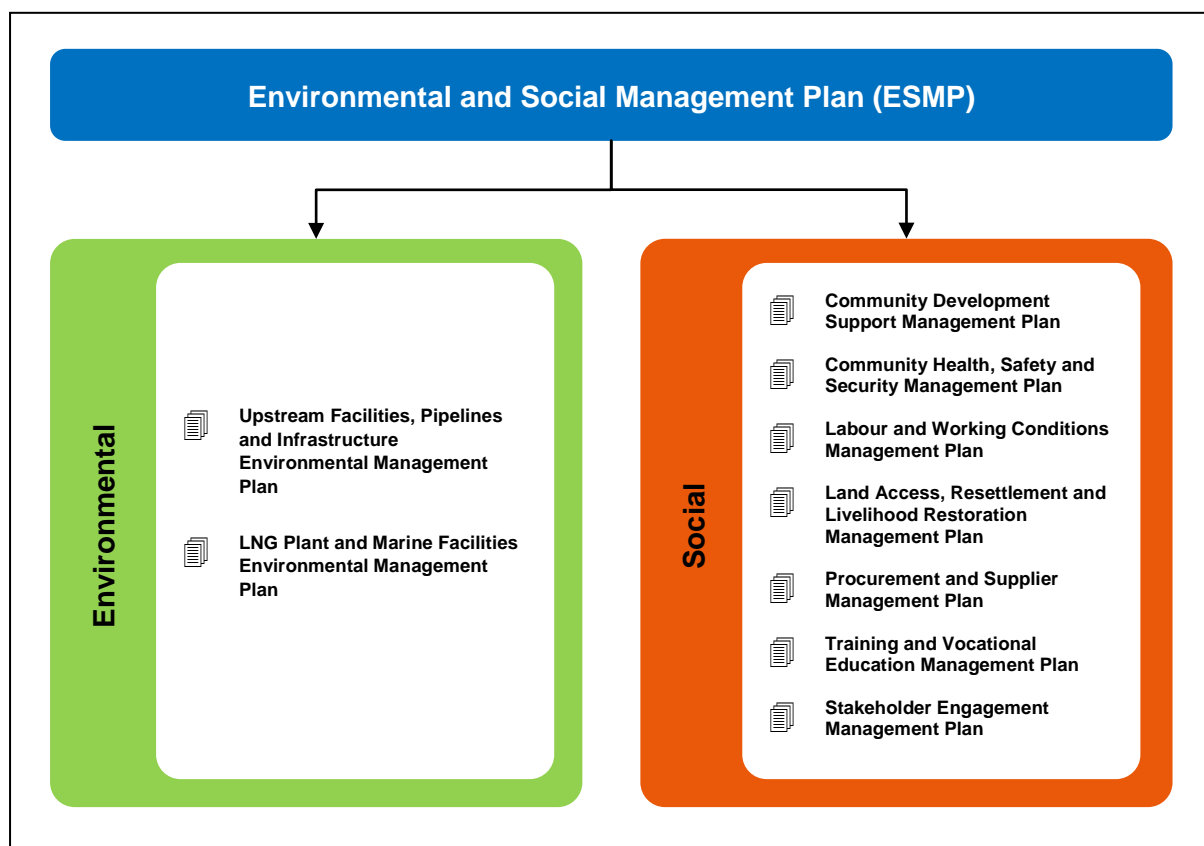


Figure 1-1: Environmental and Social Management Plan structure

This ESMP is a Milestone Commitment under the terms of the Loan Agreement and is available to the public on the Project website (www.pnglng.com/commitment).

1.1 Project overview

The Project involves the production of gas from the Hides, Angore and Juha fields, and associated gas resources in the Kutubu, Agogo, Gobe and Moran fields in the Southern Highlands, Hela and Western Provinces of Papua New Guinea.

Esso Highlands Limited (EHL), a subsidiary of Exxon Mobil Corporation, is the Project's operator. Co-venturers include Oil Search Limited, National Petroleum Company of PNG (Kroton) Limited, Santos Limited, JX Nippon Oil and Gas Exploration Corporation, Mineral Resources Development Company Limited and Petromin PNG Holdings Limited, and their affiliates.

Over the life of the Project multiphase fluids from the wells in the Hides, Angore (and later Juha) fields are gathered and transported via the Hides Spine to the Hides Gas Conditioning Plant (HGCP), where the fluids are stabilized and conditioned into two streams - gas and condensate.

Condensate is then transported through the HGCP-Kutubu Condensate Pipeline to the Kutubu Central Processing Facility, and from there, transported via the Oil Search Limited-operated crude oil export pipeline to the Kumul Marine Terminal in the Gulf of Papua.

Dry gas is transported through more than 700 kilometres of pipelines to the LNG Plant located north-west of Port Moresby on the Gulf of Papua. The gas is then processed and liquefied at the LNG Plant (approximately 6.9 million tons per annum) for export to customers in Asia. More than 250 billion cubic metres of gas is anticipated to be produced and sold during the 30-year life of the Project.

Upstream facilities and infrastructure, including all but the LNG Plant and its associated marine facilities, are located in an area termed the Upstream Project Area, which encompasses the drainage of the Kikori River Basin extending north-west into the drainage of the upper Strickland River in Papua New Guinea's Western Province. The LNG Plant and its associated marine facilities are located in Caution Bay on the Gulf of Papua.

An overview schematic for the Project and its location and elements are shown in Figure 1-2 and Figure 1-3.

The facilities and infrastructure comprising the Project are being constructed in a series of development phases, with Phase 1 commencing production in 2014 through to Phase 6. The development phases are summarised in Table 1-1. This ESMP applies to Phase 1 only.

Phase 1 of the Project includes the HGCP, Pipelines (onshore and offshore), Kopi Scraper Station and the LNG Plant. It also includes drilling eight wells from the Hides Reservoir (Wellpads B, C, D, E and G) and two wells from the Angore Reservoir (two wellpads). The Hides Spine is used to gather the well flowlines and transport the well stream fluids to the HGCP for separation and processing. Condensate is transported to the Kutubu Central Processing Facility via the Condensate Pipeline. The Gobe Production Facility and the Kutubu Central Processing Facility also tie-in to the LNG Project Gas Pipeline to provide associated gas to the LNG Plant.

EHL has developed this ESMP as part of the Safety, Security, Health, Environmental and Social (SSHES) management framework for the production phase of the Project. SSHES aspects associated with the Project are managed in accordance with Exxon Mobil Corporation's Policy and the Operations Integrity Management System (OIMS), both of which have been adopted by EHL.

The SSHES management framework applies to normal operating conditions, start-up and shut-down activities, and reasonably foreseeable abnormal operating conditions and emergency situations.

The SSHES management framework recognises that some construction phase activities will not have completed at the time of start-up. Mitigation measures developed to manage the potential risks and impacts associated with these activities will continue to be applied as appropriate until the relevant activity is completed.



Figure 1-2: Project location

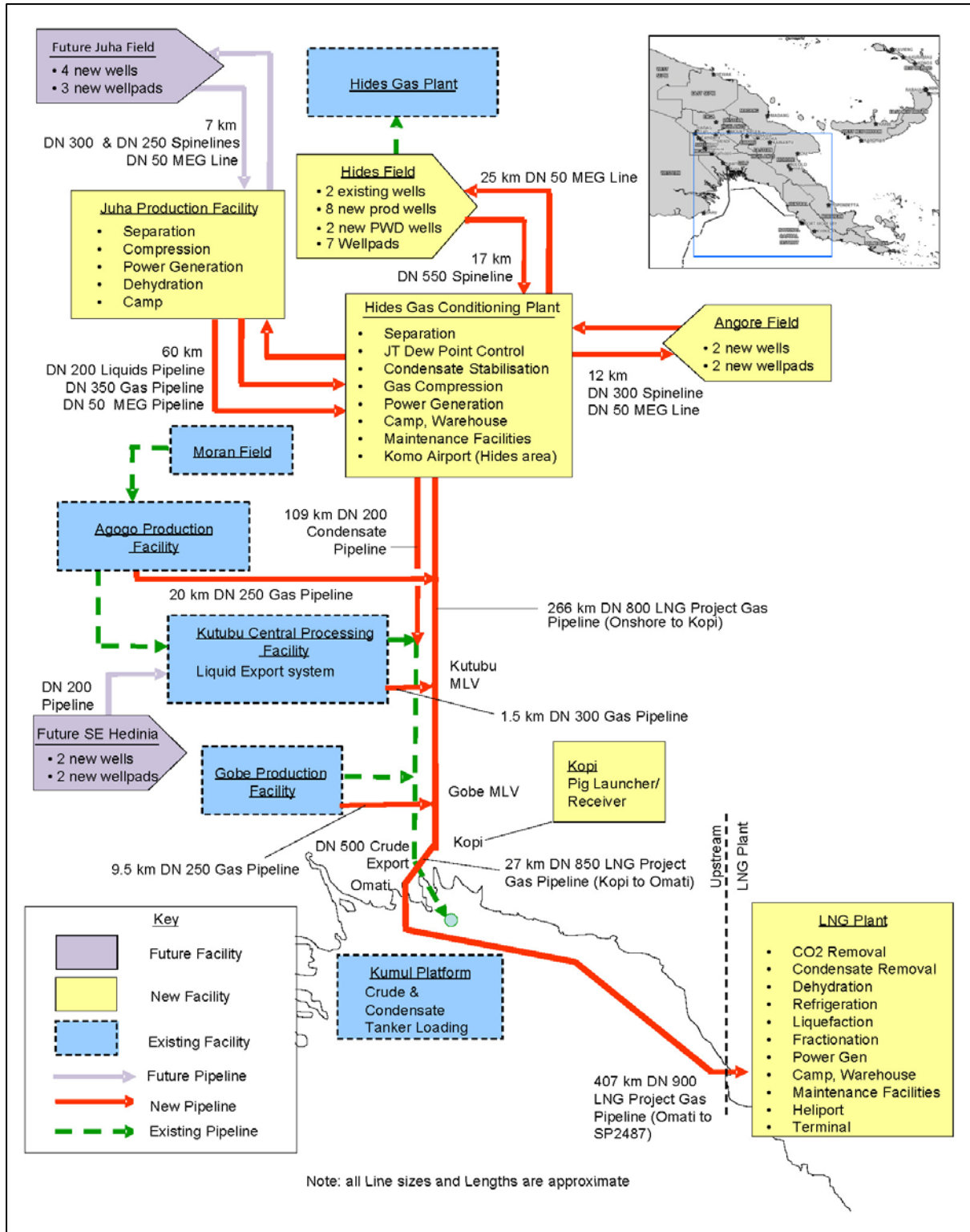


Figure 1-3: Project overview schematic

Table 1-1: Development phases

PHASE	EST. TIMING ¹
Phase 1: Initial Development: <ul style="list-style-type: none"> • Hides Gas: Wellpads B, C, D, E and G • Hides Gathering System and Spine • Hides-HGCP MEG Pipeline • HGCP • HGCP-Kutubu Condensate Pipeline • Angore Gas: Wellpads • LNG Project Gas Pipeline (Onshore/Offshore) • Kopi Scraper Station • LNG Plant and Facilities • Gobe Gas Pipeline • Kutubu Gas Pipeline 	2014
Phase 2: Angore flowlines and spine to HGCP.	2018
Phase 3: Hides Booster Compression.	2019
Phase 4 ² : Juha Gas Field Wellpads A, B and C; Juha Production Facility; and Juha well-head gathering system-pipeline between HGCP and Juha Production Facility.	TBD
Phase 5 ² : Agogo/Moran Gas.	TBD
Phase 6 ² : South-east Hedinia Gas.	TBD

1.2 Scope

This ESMP is primarily based on findings of the original Project Environmental Impact Statement (EIS), and more recently an environmental and social aspects process. It provides an overview of the environmental and social risks and impacts associated with production, maintenance and drilling activities for Phase 1. It outlines environmental and social management and mitigation measures, as well as monitoring requirements. All Project components are addressed within this ESMP, including Associated Facilities, as outlined in Figure 1-3.

Detail on the ecological features found in the Upstream Project area, plus management, mitigation and monitoring of impacts on biodiversity, can be found in EHL's Biodiversity Strategy.

EHL will update this production ESMP at least three months prior to each subsequent development phase (Project Phases 2-6).

1.2.1 Associated Facilities

The Project may continue to use or depend on associated facilities that are not funded as part of the project but whose viability and existence depend on the project, and whose goods and services are essential for the successful operation of the Project³.

The approach to managing the risks and impacts associated with the operation of these facilities will be the same as that adopted for the construction phase, that is, commensurate with risk and impact, as well as the degree of influence that can be exerted on the third party operator by the Project.

To assist this process, the Register of Worksites and Facilities that was developed for construction will be amended to reflect the reduced use of associated facilities, and used as a management tool.

¹ Indicates commencement of production.

² Project Phases 4-6: Currently under evaluation.

³ The management of risks and impacts in the Project's area of influence resulting from primary supply chains is addressed in the Procurement and Supplier Management Plan.

1.3 Objectives

This ESMP has been developed with the principal objective of preventing, reducing and mitigating Project-related environmental, social and community health, safety and security risks and impacts during the production phase.

Specific objectives of this ESMP are to:

- Describe actions required to implement the production-related management and mitigation measures made in the EIS
- Describe additional measures required to implement: production-related good international industry practice; Project Environment Permit conditions; applicable Lender Group environmental and social standards; and applicable environmental and social laws, as defined in the Common Terms Agreement for the Loan Facility Loans as issued on December 15, 2009
- Outline the roles and responsibilities of the environmental and social management organisation for the Production team
- Describe environmental and social expectations, including the process for incident management, as well as measurement and reporting of environmental and social performance indicators
- Outline the minimum requirements for assessment and audit; EHL and contractors' processes; and conformance applicable to production activities

EHL will comply with, and implement, the environmental and social management and mitigation requirements defined in this ESMP and its appendices, as applicable to production, maintenance and drilling activities. EHL is responsible for ensuring that contractors and subcontractors meet the requirements of this ESMP.

Contractors and subcontractors will, where deemed necessary by the Project, and in accordance with applicable Lender Group environmental and social standards and applicable environmental and social laws (defined above), prepare, submit for EHL review and approval, maintain and implement an EMP and SMP relevant to their approved scope of work. Contractor and subcontractor documents will be developed in accordance with this ESMP.

EHL is ultimately accountable for the implementation of the actions defined in this ESMP and its appendices. To the extent that contractors are engaged during production, EHL will verify that they provide sufficient resources to achieve effective implementation of the requirements established in this ESMP and in contractor environmental and social management documents, as applicable to each contract scope of work.

2.0 LEGAL AND OTHER REQUIREMENTS

It is EHL's policy to comply with applicable laws and regulations, and apply responsible standards where laws and regulations do not exist.

2.1 Papua New Guinean laws and regulations

Key laws and regulations of Papua New Guinea relevant to environmental and social matters are:

- *Constitution of the Independent State of Papua New Guinea 1975*
- *Organic Law on Provincial Governments and Local-level Governments 1998*
- *Environment Act 2000*
- *Environmental (Prescribed Activities) Regulation 2002*
- *Environmental (Procedures) Regulation 2002*
- *Environmental (Water Quality Criteria) Regulation 2002*
- *Fauna (Protection and Control) Act 1966*
- *Oil and Gas Act 1998*

The primary legislation governing environmental matters in Papua New Guinea is the *Environment Act 2000*. The *Environment Act 2000* is supported by the *Environment (Prescribed Activities) Regulation 2002*. Pursuant to the *Environment (Prescribed Activities) Regulation 2002*, an Environment Permit was issued by the DEC on September 9, 2009. Amendments to the Environment Permit were issued on October 29, 2009 and October 22, 2012. Consistent with the Environment Permit requirements, EHL has a Project Environmental Management Plan for production, which has been approved by the Papua New Guinean Department of Environment and Conservation (DEC).

2.2 EHL policies

ExxonMobil's Standards of Business Conduct form the framework by which ExxonMobil and its subsidiaries operate around the globe, and provide employees with the principles and an understanding of ExxonMobil standards.

The Standards of Business Conduct include foundation policies as shown in Table 2-1.

Table 2-1: The foundation policies of the Standards of Business Conduct

STANDARDS OF BUSINESS CONDUCT	
Ethics	Health
Conflicts of Interest	Environment
Corporate Assets	Safety
Directorships	Product Safety
Gifts and Entertainment	Customer Relations and Product Quality
Political Activities	Alcohol and Drug Use
International Operations	Equal Employment Opportunity
Antitrust	Harassment in the Workplace

Topics covered in foundation policies relevant to the scope of this ESMP are described in further detail below.

2.2.1 Ethics

The policy of Exxon Mobil Corporation is to comply with all governmental laws, rules, and regulations applicable to its business. Even where the law is less prescriptive, the Corporation chooses the course of highest integrity.

The Corporation cares how results are obtained, not just that they are obtained. Directors, officers, and employees should deal fairly with each other and with the Corporation's

suppliers, customers, competitors, and other third parties. The Corporation expects compliance with its standard of integrity throughout the organisation.

2.2.2 Safety

It is Exxon Mobil Corporation's policy to conduct its business in a manner that protects the safety of employees, others involved in its operations, customers, and the public. The Corporation will strive to prevent all accidents, injuries, and occupational illnesses through the active participation of every employee. The Corporation is committed to continuous efforts to identify, and eliminate or manage, safety risks associated with its activities.

Accordingly, the Corporation's policy is to:

- Design and maintain facilities, establish management systems, provide training and conduct operations in a manner that safeguards people and property
- Respond quickly, effectively, and with care to emergencies or accidents resulting from its operations, in cooperation with industry organisations and authorised government agencies
- Comply with all applicable laws and regulations, and apply responsible standards where laws and regulations do not exist
- Work with government agencies and others to develop responsible laws, regulations, and standards based on sound science and consideration of risk
- Conduct and support research to extend knowledge about the safety effects of its operations, and promptly apply significant findings and, as appropriate, share them with employees, contractors, government agencies, and others who might be affected
- Stress to all employees, contractors, and others working on its behalf their responsibility and accountability for safe performance on-the-job, and encourage safe behaviour off-the-job
- Undertake appropriate reviews and evaluations of its operations to measure progress and to foster compliance with this policy

2.2.3 Health

Exxon Mobil Corporation's policy includes:

- Identify and evaluate health risks related to its operations that potentially affect its employees, contractors or the public
- Implement programs and appropriate protective measures to control such risks, including appropriate monitoring of its potentially affected employees
- Communicate in a reasonable manner to potentially affected individuals or organisations, and the scientific community, knowledge about health risks gained from its health programs and related studies
- Determine at the time of employment and thereafter, as appropriate, the medical fitness of employees to do their work without undue risk to themselves or others
- Provide or arrange for medical services necessary for the treatment of employee occupational illnesses or injuries, and for the handling of medical emergencies
- Comply with all applicable laws and regulations, and apply responsible standards where laws and regulations do not exist
- Work with government agencies and others to develop responsible laws, regulations, and standards based on sound science and consideration of risk
- Conduct and support research to extend knowledge about the health effects of its operations
- Undertake appropriate reviews and evaluations of its operations to measure progress and to foster compliance with this policy

2.2.4 Environment

It is Exxon Mobil Corporation's policy to conduct its business in a manner that is compatible with the balanced environmental and economic needs of the communities in which it operates. The Corporation is committed to continuous efforts to improve environmental performance throughout its operations.

Accordingly, the Corporation's policy is to:

- Comply with all applicable environmental laws and regulations and apply responsible standards where laws and regulations do not exist
- Encourage concern and respect for the environment, emphasise every employee's responsibility in environmental performance, and foster appropriate operating practices and training
- Work with government and industry groups to foster timely development of effective environmental laws and regulations based on sound science and considering risks, costs, and benefits, including effects on energy and product supply
- Manage its business with the goal of preventing incidents and of controlling emissions and wastes to below harmful levels; design, operate, and maintain facilities to this end
- Respond quickly and effectively to incidents resulting from its operations, in cooperation with industry organisations and authorised government agencies
- Conduct and support research to improve understanding of the impact of its business on the environment, to improve methods of environmental protection, and to enhance its capability to make operations and products compatible with the environment
- Communicate with the public on environmental matters, and share its experience with others to facilitate improvements in industry performance
- Undertake appropriate reviews and evaluations of its operations to measure progress and to foster compliance with this policy

2.2.5 Labour and working conditions

ExxonMobil's Statement on Labour in the Work Place defines labour and working conditions expectations and outlines: the freedom of association and the right to collective bargaining; the elimination of all forms of forced labour; the abolition of child labour; and the elimination of discrimination in regard to employment and occupation.

ExxonMobil supports and embodies these principles and strives to go further in ensuring their efficacy, with the inclusion of specific language in contract documents and the provision of appropriate training related to human rights expectations and requirements.

2.2.6 Human rights

ExxonMobil's Standards of Business Conduct defines the global ethical conduct of the Corporation and its majority-owned subsidiaries. These Standards uphold the values of human rights, labour, the environment, and anti-corruption. The Board of Directors has adopted, and oversees, the administration of the Standards. No one has authority to make exceptions or grant waivers to the Standards. Disciplinary action is taken against any employee who violates these Standards. Employees are expected to review the Standards each year. While ExxonMobil is not a formal signatory of the United Nations Global Compact, its values represent key elements of the Standards.

ExxonMobil's approach to human rights is consistent with the policy framework outlined in the 2008 report of John Ruggie, the United Nations Special Representative on Business and Human Rights – *Protect, Respect and Remedy: a Framework for Business and Human Rights* (Ruggie, John, 2008).

2.2.7 Transparency

ExxonMobil is an active participant of transparency initiatives that apply universally to all companies — publicly traded, private and state-owned — with an interest in a country's

extractive industry, who protect truly proprietary information, and do not violate the laws of a host government or the company's contractual obligations.

For example, the Extractive Industries Transparency Initiative was established in 2002 to encourage governments to voluntarily disclose the revenues they receive from oil, gas and mining operations, with revenues verified by reports of company payments to governments. ExxonMobil has been engaged in the Extractive Industries Transparency Initiative since its inception, holding a board position to represent the international oil companies.

2.2.8 International operations

It is the policy of Exxon Mobil Corporation to comply with all governmental laws, rules, and regulations applicable to its operations outside the United States of America (U.S.) and to conduct those operations to the highest ethical standards.

Laws that apply to operations outside the U.S. include those of the countries where the operations occur, and may also include certain U.S. laws which govern international operations of U.S. companies and U.S. persons, broadly defined.

ExxonMobil is also committed to conducting business in a manner that is compatible with the environmental and economic needs of the communities in which it operates, and that protects the safety, security, and health of employees, those involved with operations, customers, and the public.

The Standards of Business Conduct and its foundation policies are put into practice through a disciplined management framework known as OIMS.

2.3 **Operations Integrity Management System**

ExxonMobil defines a management system as an organised means of ensuring that stated objectives are achieved and sustained. Further, the management system needs to exhibit five characteristics:

- Scope and objectives
- Processes and procedures
- Responsible and accountable resources
- Verification and measurement processes
- Feedback and improvement mechanism

It is important that all characteristics of a system are clearly documented to ensure the system survives changes in the organisation, personnel and operations. It is equally important to provide a common understanding of the management system requirements to the workforce and provide a basis for assessment and improvement.

The OIMS Framework establishes common worldwide expectations for addressing inherent risks. The term Operations Integrity (OI) is used by ExxonMobil to address all aspects of its business that can impact business performance.

The OIMS Framework includes 11 Elements. Each Element contains an underlying principle and a set of Expectations. Application of the OIMS Framework is required across all of ExxonMobil, with particular emphasis on design, construction and production. For example, a constructive community relationship is an OIMS expectation.

Managers are responsible for ensuring that management systems satisfying the Framework are in place and used as a normal part of business activities. The scope, priority and pace of management system implementation should be consistent with the risks associated with the business.

OIMS is certified as equivalent to *ISO 14001:2004 Environmental management systems - Requirements with guidance for use (International Organization for Standardization, 2004)* by Lloyd's Register. Certification is periodically reviewed by Lloyds Register and maintained current. The Elements of OIMS are shown in Figure 2-1.

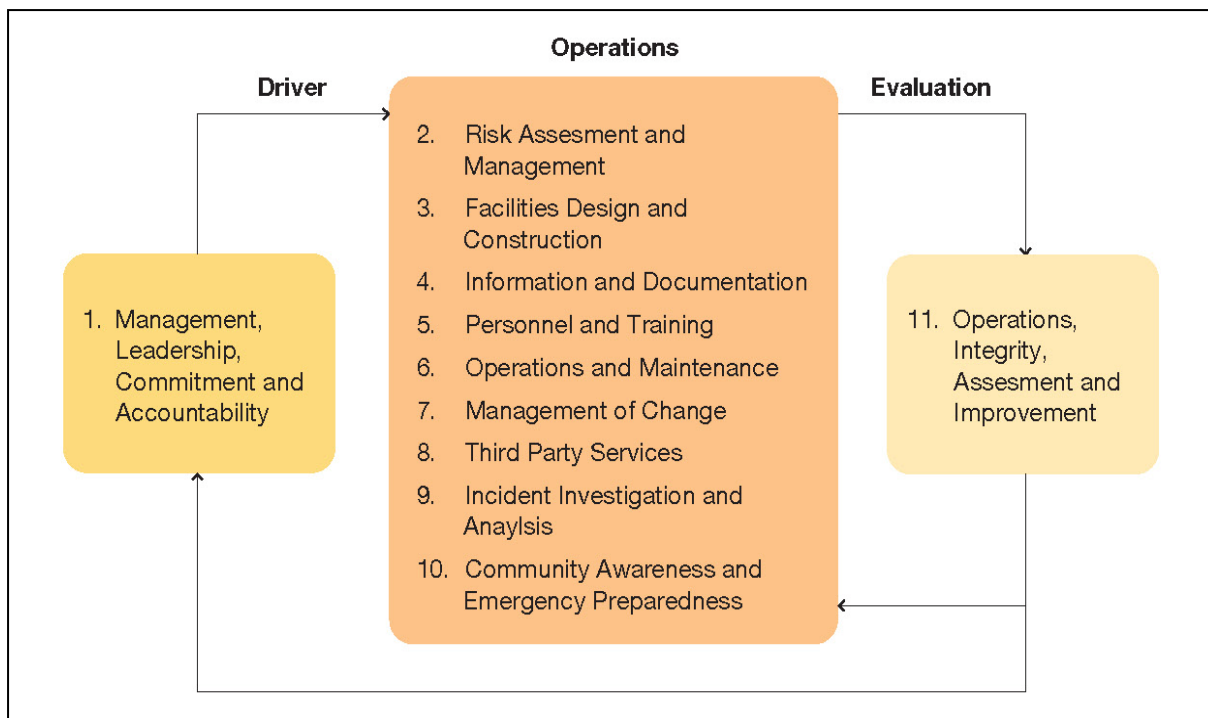


Figure 2-1: Operations Integrity Management System elements

2.3.1 Production Company Operations Integrity Management System

The Production Company has developed a suite of Systems that identifies what needs to be done to meet OIMS requirements.

Each of the Production Company OIMS Systems are described in Table 2-2.

Table 2-2: Description of Production Company Operations Integrity Management System

OIMS ELEMENT	SYSTEM		PURPOSE	SYSTEM OBJECTIVES
	NUMBER	TITLE		
1 Management Leadership, Commitment, and Accountability	1-1	Management Leadership and Commitment	To provide a mechanism for management to: <ul style="list-style-type: none"> • Guide the standardised execution and improvement of OIMS • Demonstrate visible commitment to OIMS throughout the lifecycle of a Unit 	<ul style="list-style-type: none"> • Management systems for OI are established, and managers and supervisors demonstrate commitment and personal accountability to them through active and visible participation • OIMS roles and responsibilities are established, accepted and exercised. The workforce actively participates in OIMS and lessons learned are shared. Interfaces between organisations are defined • Achievement of established targets and ongoing improvement with respect to OI performance is evaluated and stewarded
	1-2	OIMS for Operations By Others Operations	To effectively influence the Operations By Others Operator to manage assets through OI principles and processes.	<ul style="list-style-type: none"> • The Operator implements and maintains integrity management processes that address safety, security, health, and environment, and incorporates all regulatory requirements • The Operator places priority on consistently conducting operations in compliance with their OI management processes • The Joint Interest organisation will work to influence the Operator to close significant structural or performance gaps related to their OI management processes

OIMS ELEMENT	SYSTEM		PURPOSE	SYSTEM OBJECTIVES
	NUMBER	TITLE		
2 Risk Assessment and Management	2-1	Risk Assessment and Management	To facilitate the identification, evaluation, understanding, and control of safety, security, health, environmental and social risks in a structured and prudent manner. This System provides information for decision making to prevent or mitigate the undesirable consequences of potential incidents.	<ul style="list-style-type: none"> • Safety, security, health, environmental and social risks are identified, consistently categorised, and eliminated, mitigated, or otherwise managed. Risks are managed to acceptable levels subject to Unit management approvals commensurate with the level of risk • Structured risk assessments for projects and ongoing operations are performed by qualified personnel with the active involvement of individuals familiar with the activities assessed • Hazards and risk learnings are appropriately shared across the Unit and with other ExxonMobil organisations • The results of the risk assessment, management, and stewardship process are documented to confirm timely close-out of approved follow-up action items. Time limits for resolution of action items are extended only with prior management approval
3 Facilities Design and Construction	3-1	Project Execution Management	To ensure facilities projects are appropriately managed with structured processes and procedures.	<ul style="list-style-type: none"> • Project management procedures are documented, well understood, and executed by qualified personnel • A pre-start-up safety review is performed, documented, and followed up for applicable projects

OIMS ELEMENT	SYSTEM		PURPOSE	SYSTEM OBJECTIVES
	NUMBER	TITLE		
	3-2	Managing Design Practices, Standards, and Deviations	<ul style="list-style-type: none"> • Ensure the design and construction of new or modified facilities use design practices and standards that: • Meet or exceed applicable regulatory requirements • Embody responsible requirements where regulations are not adequately protective or do not exist • Address other important OI considerations, including Human Factors, security, and Environmental Aspects • Ensure a process is in place for evaluating the application of new or updated design standards with OI implications for existing facilities • Ensure that deviation from the approved design standards, or an approved design, is permitted only after review and approval by a designated authority with adequate documentation of the technical basis and risk considerations related to the deviation 	<ul style="list-style-type: none"> • Approved design practices and standards are used in the design and construction of new or modified facilities • New or updated design standards with OI implications for existing facilities are evaluated for applicability • Deviations from standards and specifications are documented and approved
	3-3	Quality Assurance	To ensure thorough quality assurance processes are in place to confirm that facilities projects are executed in conformance with established technical requirements specifically related to design, procurement, construction, commissioning and start-up.	<ul style="list-style-type: none"> • Quality assurance processes confirm that facilities and their associated equipment and materials meet design specifications and that construction is in accordance with applicable standards
4	Information/ Documentation	4-1	Information Management	<p>To facilitate the identification, management, and timely access to current and accurate information to help ensure the actions and decisions impacting OI are made using the correct information. This System focuses on integrity-critical documentation (i.e. documents and drawings) and other pertinent records relating to OI.</p> <ul style="list-style-type: none"> • Integrity-critical documents and drawings are identified, accessible, accurate, and appropriately safeguarded • Pertinent records are defined and appropriately maintained

OIMS ELEMENT	SYSTEM		PURPOSE	SYSTEM OBJECTIVES
	NUMBER	TITLE		
	4-2	Compliance with Laws, Regulations, and Permits	To facilitate compliance with applicable laws, regulations, permits, licenses, and other legally binding requirements or agreements affecting OI, including the communication of these requirements to key personnel. Also included is compliance with standards, policies, and practices that are applied when no laws exist.	<ul style="list-style-type: none"> Information on applicable laws, regulations, permits, licenses, other legally binding requirements or agreements, codes, standards, and practices is identified and kept current, and resulting requirements are documented and communicated Compliance with applicable laws, regulations, permits, licenses, other legally binding requirements or agreements, codes, standards and practices is maintained
5 Personnel and Training	5-1	Personnel Selection, Placement, and Competency Verification	To help ensure that personnel have experience, knowledge, and any other skills necessary to meet the requirements of the specific positions.	<ul style="list-style-type: none"> Competency requirements for key positions are specified and documented. Personnel placements meet criteria defined in the System Personnel resources are available and qualified to meet the staffing criteria at all times
	5-2	Personnel Training	To help ensure that personnel are trained in the knowledge and skills necessary to meet the requirements of their specific positions.	<ul style="list-style-type: none"> Personnel are trained to perform their assigned tasks, and the training includes OI risks and regulatory requirements
	5-4	Personnel Safety Management	To provide the structure for implementing, maintaining, and continually improving personnel safety performance for employees and contractors, both on and off-the-job, and thereby achieve an incident-free workplace.	<p>The ultimate goal of managing personnel safety is to achieve an incident-free workplace where "Nobody Gets Hurt". Specific, measurable objectives that contribute to this goal are:</p> <ul style="list-style-type: none"> Reduce at-risk behaviour (both on and off-the-job) and manage hazards associated with the work environment to significantly reduce OI risks Hazard identification and correction programs are comprehensive and widely used across the business unit
	5-5	Health Management	To provide the structure for identifying and managing health exposures.	<ul style="list-style-type: none"> Protect the health of personnel on company premises, and the public in proximity to our operations, from adverse effects that may result from our operations Protect personnel on company premises from environmental and health hazards prevailing in the environment

OIMS ELEMENT	SYSTEM		PURPOSE	SYSTEM OBJECTIVES
	NUMBER	TITLE		
6 Operations and Maintenance	6-1	Operating and Maintenance Procedures	To ensure procedures for operations and maintenance are identified, developed, used, and maintained according to the requirements of this System, and quality assurance processes for replacement equipment and materials are in place. Procedure training is addressed by OIMS System 5-2 Personnel Training, and verification of competency on procedure use is addressed by OIMS System 5-1 Personnel Selection, Placement, and Competency Verification.	<ul style="list-style-type: none"> Operating and maintenance procedures are identified, developed, classified (i.e. integrity critical, normal or work aid), approved, available, and in use at all locations Improvements to operating and maintenance procedures are identified and communicated Alarm systems in continuously manned control rooms are appropriately responded to or managed Quality Assurance plans are in place to ensure that equipment and materials obtained and repair activities conducted for ongoing operations and maintenance meet designated specifications
	6-3	Well Management	To provide the structure for well-work planning and operations as well as ongoing well integrity activities.	<ul style="list-style-type: none"> Well-work programs are documented, understood, and effectively executed Well integrity activities are in place to effectively address OI risks for all well types and well status
	6-4	Work Management	To ensure the work activities at Unit-operated or controlled sites are undertaken in a structured and controlled manner to reduce the risk of incidents. This System provides a structure for managing the risks associated with the work to be performed and confirming that interfaces with the work activities are appropriately considered.	<ul style="list-style-type: none"> Work Permits are executed to protect personnel, equipment, and the environment from mechanical and operational risks Controls are in place for the temporary disarming, deactivation, or unavailability of critical equipment Operational interfaces at the worksite and the impact of shift handover on work activities are managed
	6-5	Environmental Management	To provide a framework that meets Corporate environmental business planning expectations, establishes the requirements for environmental management, and enables the Unit to conduct its business in a manner that is compatible with the balanced environmental and economic needs of the communities in which it operates.	<ul style="list-style-type: none"> Environmental aspects are identified and assessed as part of asset level EMPs. Significant aspects are addressed and controlled consistent with policy and regulatory requirements Environmental management is fully integrated into the Unit's business planning and stewardship process. Environmental performance, including emissions, discharges and waste, is tracked and stewarded to meet performance goals Sites are assessed to determine the extent of contamination prior to long-term shut down or abandonment of facilities and appropriate remedial action is planned and implemented

OIMS ELEMENT	SYSTEM		PURPOSE	SYSTEM OBJECTIVES	
	NUMBER	TITLE			
	6-6	Facility Integrity Management	To ensure the operational integrity of critical equipment is maintained over the complete life cycle of the equipment without significant failures that would (1) result in uncontrolled emissions, fires, explosions, or incidents that might pose serious danger to people, the environment, or assets, or (2) significantly impact equipment availability and reliability. This is accomplished through programmed condition monitoring, preventive maintenance, inspection, and testing of the equipment and proper documentation of such.	<ul style="list-style-type: none"> • A systematic, risk-based approach is used to identify critical equipment and develop equipment strategies • Integrity programs for the operational integrity of critical equipment are developed, approved, and executed at all locations • Critical equipment undergoes programmed condition monitoring, preventive maintenance, inspection, and/or testing, or other measures are in place to minimise the impact of failure. 	
7	Management of Change	7-1	Management of Change	To establish principles of change management that: <ul style="list-style-type: none"> • Manage permanent, temporary, and emergency changes to equipment, procedures or process conditions • Provide for a thorough evaluation of the proposed change • Consider factors for the identification and control of potential OI risks associated with the proposed change • Communicate the proposed change to personnel whose job tasks may be affected by the change and who may require training prior to putting the change in service 	<ul style="list-style-type: none"> • Permanent, temporary, and emergency changes are managed effectively • Change is evaluated against an established set of criteria and necessary endorsement/approval levels are established
8	Third Party Services	8-1	Contractor Selection and Management	To provide a systematic approach for the selection of third party suppliers of services, and subsequent management of interfaces to achieve continuous improvement in contractor OI performance.	<ul style="list-style-type: none"> • Contractors are qualified, evaluated, and selected based on their ability to perform work in a safe, secure, and environmentally sound manner at the best total value • A Pre-Mobilisation process is in place to effectively communicate and develop interface plans; proactive actions are taken to address contractor supervisor and crew competency issues • Effective management of interfaces occurs between the Unit and contractors • Contractor performance is monitored, feedback provided, and deficiencies corrected

OIMS ELEMENT	SYSTEM		PURPOSE	SYSTEM OBJECTIVES
	NUMBER	TITLE		
9 Incident Investigation and Analysis	9-1	Incident Management	To facilitate the proper management of incidents so that valuable information and lessons learned are available to improve operations and prevent the recurrence of similar incidents.	<ul style="list-style-type: none"> • Safety, security, health, environmental, regulatory compliance, process safety, and equipment related incidents (with safety, security, health, environmental and/or social consequences) are reported, investigated, analysed to identify the root cause(s), and documented • Corrective actions are identified and implemented to prevent recurrence, and lessons learned are communicated within and outside of the organisation, as appropriate
10 Community Awareness and Emergency Preparedness	10-1	Community Awareness	<p>To establish and maintain community confidence and trust in Unit activities through consultative and collaborative interactions and relationships. This System seeks to establish the Unit as a responsible corporate citizen and good neighbour that:</p> <ul style="list-style-type: none"> • Protects the safety and health of its workforce and the community • Protects the environment in which it operates • Engages host communities on an ongoing basis in open, forthright and proactive external communications, as appropriate • Focuses community involvement and creates realistic expectations by consulting communities in the design and implementation of community relations programs, as appropriate • Engages host government officials regularly in dialogue so as to foster improved relationships and greater trust • Provides opportunities to create mutual understanding and respect through workforce involvement in host communities • Reviews community relations programs and practices annually to maximise the effectiveness of the Unit's social investment through continuous improvement 	<ul style="list-style-type: none"> • Recognise and respond to community concerns and impacts to establish and maintain public trust and confidence in the operational integrity of Unit operations and facilities • Anticipate community concerns and develop response plans, as appropriate

OIMS ELEMENT	SYSTEM		PURPOSE	SYSTEM OBJECTIVES
	NUMBER	TITLE		
	10-2	Emergency Preparedness and Response	To ensure the Unit establishes effective emergency preparedness, response, and business continuity planning and provides well maintained equipment and trained personnel to manage incidents. Emergency situations include those incidents that impact safety, security, health, and the environment. Business disruption includes a potential extended impact to a critical business process or operation.	To ensure effective response to emergency and business disruption events that threaten the safety, security and health of the public, contractors and employees, the environment, Unit asset integrity, and critical business operations [10.2.1]. Specific System objectives are: <ul style="list-style-type: none"> • Emergency response plan(s) and business continuity plan(s) are documented, resourced, accessible, current, and clearly communicated • Required exercises, simulations, and/or drills are conducted to determine the adequacy of the emergency response and business continuity plans
11 Operations Integrity Assessment and Improvement	11-1	OIMS Assessment	To direct the process of assessing how well the Unit is meeting OIMS requirements. This is done by evaluating the status and effectiveness of the Unit's OIMS management systems. Assessments confirm the proper implementation/execution of OIMS and aid in continuous improvement efforts.	<ul style="list-style-type: none"> • Assessments determine the degree to which OIMS requirements are met • A qualified team conducts assessments • Assessment findings are prioritised and stewarded to closure

2.4 International Finance Institution requirements

Debt financing was secured for the Project through various Export Credit Agencies (ECAs) and commercial banks. The ECAs and commercial banks (collectively referred to in this document as the Lender Group) apply certain environmental and social principles and standards, namely *The Equator Principles (The Equator Principles Association, 2006)* and the *Revised Council Recommendation on Common Approaches on the Environment and Officially Supported Export Credits (Organisation for Economic Co-operation and Development, 2007)* the 'Common Approaches'. Both refer to the International Finance Corporation (IFC) Performance Standards on Social and Environmental Sustainability (IFC, 2006) referred to as the 'IFC Performance Standards'. The Project is required to conform with all of the aforementioned requirements.

2.4.1 International Finance Corporation

The IFC Performance Standards are:

- Performance Standard 1: Social and Environmental Assessment and Management Systems
- Performance Standard 2: Labor and Working Conditions
- Performance Standard 3: Pollution Prevention and Abatement
- Performance Standard 4: Community Health, Safety and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management
- Performance Standard 7: Indigenous Peoples
- Performance Standard 8: Cultural Heritage

All of these IFC Performance Standards are applicable to the Project. In accordance with the Common Terms Agreement, the Project is also required to comply with:

- *General Environmental, Health and Safety (EHS) Guidelines (IFC, 2007)*
- *Environmental, Health and Safety Guidelines for Onshore Oil and Gas Development (IFC, 2007)*
- *Environmental, Health and Safety Guidelines for Liquefied Natural Gas (LNG) Facilities (IFC, 2007)*
- *Environmental, Health and Safety Guidelines for Waste management facilities (IFC, 2007)*
- *Environmental, Health and Safety Guidelines for Water and sanitation (IFC, 2007)*
- *Environmental, Health and Safety Guidelines for Ports, Harbors and Terminals (IFC, 2007)*

The IFC Performance Standards are each supported by a set of Guidance Notes. The Standards and Guidance Notes are discussed in further detail in the relevant EMPs and SMPs.

2.4.2 Commercial bank requirements: *The Equator Principles (The Equator Principles Association, 2006)*

The Equator Principles (The Equator Principles Association, 2006) represent a voluntary initiative developed by banks working in the project finance sector to develop a common set of environmental and social policies and guidelines that can be applied globally across all industry sectors.

The Equator Principles (The Equator Principles Association, 2006) are based on guidelines and performance standards of the IFC and cover ten topics as listed below:

- Principle 1: Review and Categorization
- Principle 2: Social and Environmental Assessment
- Principle 3: Applicable Social and Environmental Standards

- Principle 4: Action Plan and Management System
- Principle 5: Consultation and Disclosure
- Principle 6: Grievance Mechanism
- Principle 7: Independent Review
- Principle 8: Covenants
- Principle 9: Independent Monitoring and Reporting
- Principle 10: Reporting

2.4.3 Export Credit Agency requirements

ECAs are private or quasi-governmental institutions that act as intermediaries between national governments and exporters to issue export financing. Many ECAs have environmental and social policies that, by virtue of their connection with national governments and specifically those that are members of the Organization for Economic Co-operation and Development, revert to the Common Approaches.

Relevant individual ECA policies are as follows:

- *Environmental Procedures and Guidelines (Export-Import Bank of the United States, 2008)*
- *Guidelines for Confirmation of Environmental and Social Considerations (Japan Bank for International Cooperation, 2002)*
- *Guidelines on Environmental and Social Considerations in Trade Insurance (Nippon Export and Investment Insurance, 2006)*
- *Environment Policy (Export Finance and Insurance Corporation, 2005)*

As is the case for private lenders, the Common Approaches apply the guidelines and performance standards of the IFC.

2.5 **Common Terms Agreement**

Common Terms Agreement for the Loan Facility Loans requires that that the Project complies in all material respects with the environmental and social milestones (if any) as set out in Schedule H-3 (Environmental and Social - Environmental and Social Milestones).

Milestone 6 of Schedule H-3 requires that that Operator develop an Operations Environmental and Social Management Plan. This ESMP fulfils this requirement.

3.0 ORGANISATION AND COMMITMENT

Effective leadership and management support is embodied as a key expectation in OIMS System 1-1 Management Leadership and Commitment. Therefore, managers and supervisors in the production phase will credibly demonstrate their commitment to operational integrity through active and visible participation in the implementation of OIMS requirements.

Pursuant to OIMS System 1-1 Management Leadership and Commitment, EHL managers and supervisors will demonstrate commitment and accountability to OI, including the implementation of this ESMP, through active participation. As such, EHL will charter an OIMS Management Committee to provide management perspective, set expectations, and allocate resources for the implementation and continuous improvement of OI within the organisation. The OIMS Management Committee will steward EHL's OIMS goals and objectives, including goals and objectives pertaining to environmental and social management as set out in this ESMP. The OIMS Management Committee will periodically review environmental and social performance indicators as discussed in Section 6.4.

The Managing Director is expected to assign owners for the individual OIMS Systems. Individual owners will have a working knowledge of OIMS, especially as it relates to their specific System. Line Management's overall responsibilities for the execution of OIMS System 1-1 Management Leadership and Commitment (initial implementation, ongoing execution and continuous improvement of OIMS) are as follows:

- Accept responsibility for the implementation, execution, stewardship, and effectiveness of OIMS, and involvement of employees and third parties at all levels
- Include OI considerations in ongoing business decisions, strategies and actions
- Demonstrate commitment to OIMS through active and visible participation in its implementation and improvement, including OI, risk, security, and similar assessments of their own and other business units
- Ensure processes are in place for the workforce to actively engage in the OI processes
- Ensure processes are in place to identify and communicate significant learnings, including "best practices" from industry, within and between business units and with other Corporate functions
- Maintain their OI knowledge, including leadership skills and behaviours, at a level commensurate with their job responsibilities
- Communicate their commitment to OIMS principles and strategies with employees, contractors and others as appropriate
- Promote an open and trusting environment and understand how their behaviours impact others
- Ensure the integration of security program requirements, including the threat environment and security countermeasures, with other business programs

EHL has developed, and will maintain, an appropriate organisational structure and sufficient resources to support effective implementation of the EMPs and SMPs. These plans (presented as appendices in this ESMP) are integral to production and will be reviewed to ensure their ongoing relevance.

Figure 3-1, Figure 3-2 and Figure 3-3 illustrate production phase organisational structures. As the needs of the Project change over time, a number of roles may be replaced by others more appropriate to the Project's needs at the time.

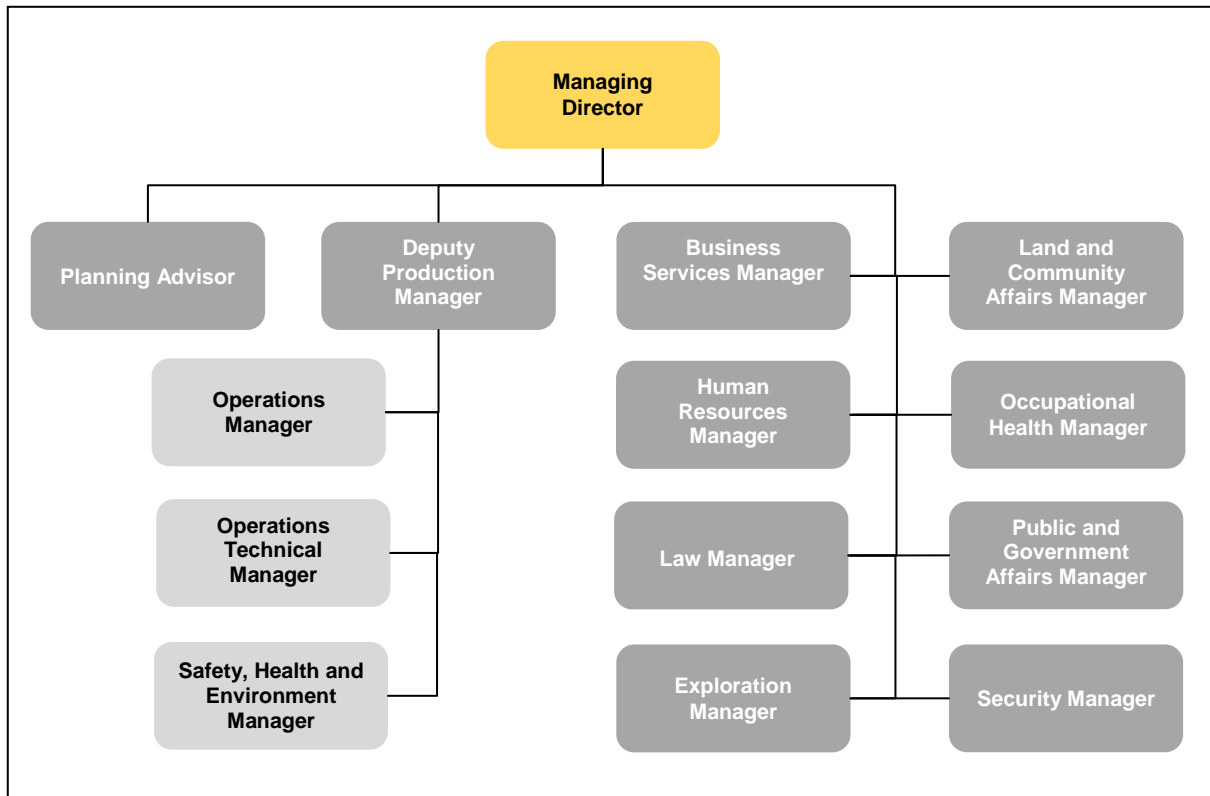


Figure 3-1: Esso Highlands Limited organisation chart for commencement of production

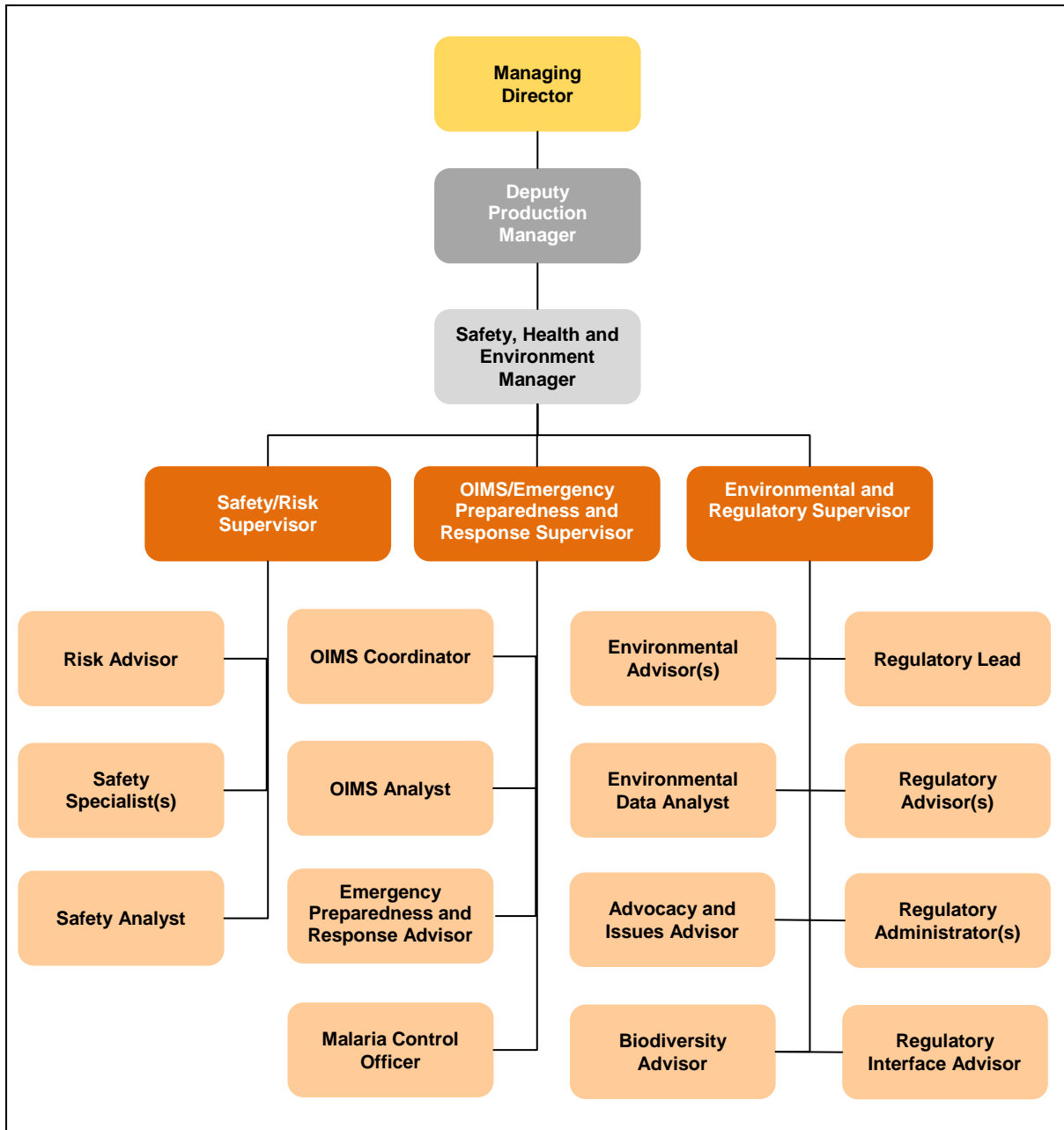


Figure 3-2: Safety, Health and Environment organisation chart

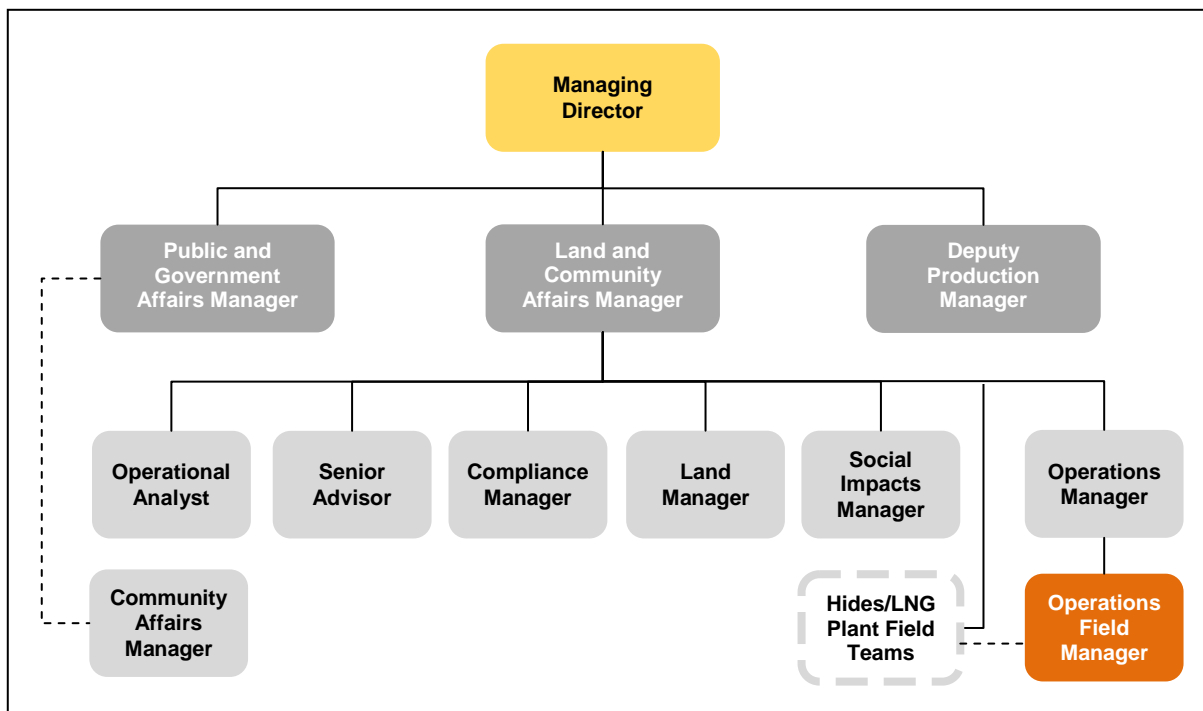


Figure 3-3: Land and Community Affairs organisation chart

Primary responsibilities for Land and Community Affairs (L&CA) department managers and field teams are summarised in Table 3-1. Further details are provided within the SMPs.

Table 3-1: Land and Community Affairs team responsibilities

COMPLIANCE	LAND	COMMUNITY AFFAIRS	SOCIAL IMPACTS	FIELD TEAMS
<ul style="list-style-type: none"> • Lender Interface • External L&CA reporting • Business Controls • Internal Reporting • SMP Compliance • Monitoring 	<ul style="list-style-type: none"> • Land Access • Land Agreements, including ongoing payment commitments • Cash Management 	<ul style="list-style-type: none"> • Community Affairs • Field Liaison • Stakeholder Engagement • Grievances • National Content • Benefits tracking • Infrastructure Development Grant support 	<ul style="list-style-type: none"> • Community Investment • Business Development • Livelihoods Restoration • Resettlement Action Plans 	<ul style="list-style-type: none"> • Stakeholder Engagement • Community program implementation • Local business development

Some sample job descriptions are provided in Section 9.0 to demonstrate the type of roles that will apply during the production phase. As the needs of the Project change over time, a number of roles may be replaced by others more appropriate to the Project’s needs at the time.

4.0 ENVIRONMENTAL AND SOCIAL ASSESSMENT

4.1 Environmental and social overview

An overview of key environmental and social features associated with the Project is outlined below. Further detail is provided in the EIS.

4.1.1 Physical environment overview

The Project is comprised of three major components – the LNG Plant, the Pipelines (offshore and onshore) and the Upstream. The Upstream Project Area encompasses the drainage of the Kikori River Basin extending north-west into the drainage of the upper Strickland River in Papua New Guinea's Western Province. Limestone terrain, consisting mostly of rugged polygonal and doline karst, karst plains and plateaus with karst corridors, dominates the Upstream Project Area which ranges from sea level to 3,650 metres in altitude.

There are extensive volcanic areas in the north and north-west of the Upstream Project Area, with Mount Bosavi dominating the landscape to the west of Kutubu. South-west of Hides lies the blown-out crater of Mount Sisa, its lava flows responsible for the basalt soils of the agricultural lands in the area. The Doma Peaks, north-east and outside the Upstream Project Area, is a region of remnant volcanic cones and domes, volcano-alluvial fans and mudflows resulting from an eruption several hundred years ago.

The Upstream Project Area also encompasses large expanses of relatively undisturbed tropical forest across diverse geologies, geomorphologies, soils and habitats and consequently there is a great heterogeneity in biodiversity composition and ecology. A comprehensive description of the biodiversity of the Upstream Project Area is provided in the EIS.

Unlike the Upstream Project Area, which has large areas of intact habitat, the site of the LNG Plant has a long history of agricultural use and is comprised mostly of grazing land with only remnant terrestrial mangrove and woodland habitats.

4.1.2 Biophysical environment overview

4.1.2.1 Papua New Guinea Highlands and the Kikori River Basin

The Project footprint extends through several regions with distinct biodiversity characteristics that have high conservation value. These areas feature extensive tracts of montane, lowland hill and lowland forest environments which support a broad range of plants and animals, notably birds-of-paradise, cassowaries, fruit doves, tree kangaroos, microhylid frogs, fruit bats, vireya rhododendrons, ferns and orchids. Key biological aspects in the Papua New Guinea Highlands and the Kikori River Basin include:

- Kikori River Basin lowlands and the Moro region bioregions, which are important for waterbirds, swamp fauna and over-wintering migratory waders
- Hides Ridge, which supports a high-altitude beech (*Nothofagus* spp.) forest, dominated by epiphytes and ferns, with noteworthy ecological values - this forest is slow to regenerate and susceptible to die-back
- Caves featuring cave-dwelling bats
- Sinkhole swamps, the main breeding habitat in the karst area for tree frogs and other water-dependent frogs
- Swamp forests that support a range of specialist vertebrates including the Twelve-wired Bird-of-Paradise *Seleucidis melanoleuca*, the New Guinea Flightless Rail *Megacrex inepta* and a range of aquatic fauna
- Streams in the higher-altitude hill and mid-montane forest, which maintain populations of specialist vertebrates such as Torrent Frogs *Litoria wollastoni* and the Salvadori's Teal *Salvadorina waigiensis*
- Lowland rivers, which support crocodiles and freshwater turtles

Areas of conservation value within the Papua New Guinea Highlands and the Kikori River Basin include formally gazetted Wildlife Management Areas, consisting of the Lake Kutubu Wildlife Management Area and the Neiru Aird Hills Wildlife Management Area, along with World Wildlife Fund-designated conservation areas.

4.1.2.2 Gulf of Papua

The Gulf of Papua provides an important path for the Ornate Rock Lobster's *Panulirus ornatus* annual migration which tracks across the Gulf to the reefs of Yule Island and further east along the Papua New Guinean coast. This region also provides prawn spawning grounds, as well as habitat for marine turtles, cetaceans and dugongs.

4.1.2.3 LNG Plant site

The only intact, original vegetation remaining on the LNG Plant site is a strip of mangroves along the coast and at the mouth of the Vaihua River. Saltpans are present between the mangroves and cleared agricultural areas. The cleared areas are covered in pasture grasses and weeds. Some isolated patches of *Pandanus* and low trees on shallow drainage lines exist near the Vaihua River.

Key biological aspects at the LNG Plant site include on the offshore fringing reef, scattered coral reef bommies and seagrass beds; the coastal mangrove strip; and the potential presence of sensitive near-shore marine species, such as dugongs and turtles.

4.1.3 Social environment overview

4.1.3.1 Papua New Guinea Highlands and the Kikori River Basin

The Hela and Southern Highlands Provinces occupy approximately 25,700 square kilometres in the central western part of Papua New Guinea. The total population of the Province in 2000 was 546,265. Population densities are highest in the Tari Basin at about 190 persons per square kilometre, while areas around Lake Kutubu support about 40 persons per square kilometre. In the western part of the Komo-Margarima District, the population density is less than 20 persons per square kilometre.

The Gulf Province occupies some 13,500 square kilometres on the south coast of Papua New Guinea, where the estuaries of six major rivers converge into one large delta of islands, swamps and channels. The total population of the Province in 2000 was 106,898. Population densities range from 25 to 35 persons per square kilometre in the most densely settled areas, to less than ten persons per square kilometre in other areas.

Papua New Guinea is an overwhelmingly rural country, with almost 85 percent of the population living in a rural setting. Delivery of rural health care services is extremely difficult and recent national level surveys indicate that major health performance indicators are significantly worse in rural versus urban settings.

Key social aspects in the Papua New Guinea Highlands and the Kikori River Basin areas are: customary land ownership and use; predominant livelihood dependency on land and natural resources; high incidences of communicable diseases, including pneumonia, malaria, tuberculosis, diarrhoeal diseases, meningitis and, increasingly, Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome; maternal and child morbidity and mortality, under-resourced and largely ineffective rural health and education systems; limited health facilities, limited educational opportunities and limited infrastructure and transportation routes; project induced in-migration; and a significant number of archaeological and cultural sites.

4.1.3.2 Gulf of Papua

The Gulf of Papua supports a commercial prawn-trawling fishery. Prawn trawling grounds in the Gulf extend from the Fly River delta to the village of Lokea in the east. The area is also characterised by a variety and abundance of fish, such as barramundi, threadfin salmon,

jewfish, mud crab and lobster. These form the basis of a subsistence fishery, with some produce being sold at local markets.

4.1.3.3 LNG Plant site

The closest villages to the LNG Plant (known collectively as the LNG Plant site villages), are Papa and Lea Lea to the north and Boera and Porebada to the south. They lie within the three-nautical mile coastal zone where all fishing is restricted to customary fisheries. No commercial vessels are permitted to operate in this area.

The villages are inhabited by the Motu-Koita speaking people, who extend from Gaba Gaba (50 kilometres south-east of Port Moresby) to Manumanu (about 50 kilometres north-west of Port Moresby). Population density of the area is around ten persons per square kilometre.

Coastal people in the region are engaged in minor sales of betelnut, coconut, fish and other fresh food, and also derive income from wage employment and operating local small businesses. Sweet potato, banana and cassava are also important staple crops. Land potential is relatively poor due to a combination of poor soils, seasonal inundation and land degradation.

Artisanal fisheries provide regular supplies of fresh reef fish to Port Moresby and LNG Plant site villages.

4.2 Statutory environmental and social assessment process

4.2.1 Background

The key phases of the environmental and social assessment process were:

- Notification of Preparatory Work on Level 2 and Level 3 Activities submitted in May 2007 to the DEC under the provisions of the *Environment Act 2000*
- Environmental Inception Report issued in October 2007
- Preliminary and Full-scale Social Mapping and Landowner Identification studies (covering 1997-2007), under the provisions of the *Oil and Gas Act 1998*
- EIS finalised in January 2009
- Project Environment Permit issued by the DEC on September 9, 2009

Full details of the environmental and social assessment process are provided in the EIS.

4.2.2 Consultation and disclosure

Extensive consultation and disclosure was undertaken as part of the EIS process. The first formal step in this process was undertaken in November 2007, via the Project Awareness and Environmental Inception Report Road show. This step was to disseminate Project information and provide stakeholders with the opportunity to provide input to the scope of the EIS.

Consultation for the draft EIS was then undertaken with affected communities and other stakeholders, including the DEC and non-government organisations, in November 2008, during the Project Community Awareness and Mitigation Road Show.

In accordance with the *Environment Act 2000*, the DEC undertook further public consultation in relation to the EIS in April 2009.

Details of all consultation undertaken for the EIS are contained in the EIS Consultation and Disclosure Plan.

4.3 Environmental Impact Statement

The EIS encompasses nine volumes, which are grouped into three subject areas:

- Volume 1 of the EIS is the Executive Summary, which is written for non-technical readers. It provides an overview of the Project impact assessment process and stakeholder consultation. A summary is available in English, Tok Pisin and Motu

- Volumes 2 and 3 (the main report) are based on specialist studies and document the potential biophysical and socio-cultural impacts of the Project. These chapters describe the Project's proposed mitigation and management measures, along with residual impacts and benefits to be derived from the Project. They also outline the stakeholder consultation program
- Volumes 4 to 9 are a series of specialist studies upon which the main report is based and are included as appendices to the EIS. This includes the Social Impact Assessment (Appendix 26)

Twenty-six specialist studies were completed to assess potential impacts of the Project. In addition, considering the Upstream Project Area corresponds with a large portion of the previously proposed PNG Gas Project, specialist studies conducted for the earlier Project are either included as appendices to the EIS or referenced where appropriate.

4.4 Construction phase Environmental and Social Management Plan

The construction phase ESMP was primarily based on the findings of the EIS, its supporting studies and experience from recent oil and gas projects.

Included in the scope of the ESMP were the environmental and social aspects relevant to the Project, an overview of the environmental and social risks associated with its construction and an outline of environmental and social management and mitigation measures and monitoring requirements.

The construction ESMP was applicable to the construction and drilling execution of Phase 1 of the Project and comprised an overarching document and a set of discipline-specific EMPs and SMPs.

4.5 Production phase risk and impact assessment and development of mitigation measures

Development of this ESMP involved an integrated environmental and social aspects assessment, involving a multi-disciplinary team with respective technical, production, public affairs, risk management and social and environmental expertise. The assessment jointly considered environmental and social aspects and drew on a number of sources including the following:

- EIS (including Social Impacts Assessment)
- Project Risk Register – production relevant risks
- Project Security Incident Risk Assessment Tool
- Root causes of community and security incidents
- Project Grievance Register
- Environmental and Social Compliance Monitoring reports by the Lender Group's Independent Environmental and Social Consultant (IESC)
- Non-conformances and recommendations

The environmental and social aspects assessment process is described in the Corporate Environmental Aspects Assessment Guide.

5.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT

5.1 Impacts and mitigation measures

As required by OIMS, environmental and social management and mitigation measures were identified through the environmental and social aspects assessment process. These measures are contained in a production environmental and social risks and impacts matrix, and form the basis of the management plans.

5.2 Environmental and social mitigations register

Environmental and social management and mitigation measures implemented by EHL are identified in a register.

Each mitigation measure contained in the register is described in an EMP or SMP, and will be assigned to a responsible individual or team (EHL or contractor).

The register is used by EHL to track and document the implementation of each mitigation measure. It is updated as necessary to incorporate new mitigation measures that arise as production progresses, including alternative or additional measures identified during production and lessons learned from field programs. Mitigation measures may also be removed from the register when the corresponding risk or impact is considered to be no longer applicable or relevant to production. Where mitigation measures need to be carried over from the construction phase to ensure they are completed in the early stages of production, they have been included in the appropriate production phase environmental or social management plan.

5.3 Information management

An information management system will be used to manage environmental and social data sets. The system will facilitate data storage, management and retrieval for monitoring performance, compliance, grievance management, livelihood restoration, stakeholder engagement and general reporting.

6.0 MONITORING AND EVALUATION

6.1 Purpose

Monitoring and evaluation will be conducted to assess the effectiveness of the EMPs and SMPs. More specifically, it will serve to confirm (or otherwise):

- That the mitigation measures designed to manage risks and impacts are being implemented
- That the mitigation measures are achieving intended outcomes, or on track to achieve intended outcomes
- Actual versus predicted impacts (as described in the EIS)
- Compliance with applicable laws and regulations

The type, extent and frequency of monitoring will be commensurate with risk and potential impact. Monitoring will incorporate a range of approaches and methods depending on the object or phenomena of interest and are likely to include field observations; site inspections; surveys; sampling and measurement; and verification methods.

Monitoring data will be recorded in information management systems.

Monitoring results will be evaluated to measure the Project's performance generally against pre-determined outcomes or benchmarks, as described in the EMPs and SMPs. Where observed impacts vary from predictions, information gathered in the field will be used to determine if remedial actions are required. Follow-up surveys may be undertaken to assess impacts and demonstrate compliance with applicable legal and other requirements. Where improvement opportunities are identified, implementation of such measures will be monitored to ensure effectiveness.

Periodic reviews of evaluation results will be conducted to determine whether mitigation or control measures, programs and policies can or should be adjusted to achieve better or more effective outcomes. The frequency of the reviews will be determined on a case-by-case basis and will take into account risk and potential impact.

Monitoring and evaluation schedules will also be periodically reviewed, and the methods, frequency and scope of the inspections adapted in response to inspection results, changing circumstances and lessons learned.

Monitoring and evaluation activities will be undertaken by suitably qualified personnel, with specific monitoring and evaluation training provided to these personnel as required. Reviews and assessment findings will be prioritised and stewarded to closure in a timely manner.

The activities of contractors and applicable third parties will be included in the monitoring and evaluation programs.

6.2 Assessment and review

EHL will undertake assessments and/or reviews, where deemed necessary, and in accordance with OIMS requirements. Assessments and reviews may include third party waste facilities, Resettlement Action Plans and contractors or suppliers.

The IESC will conduct periodic monitoring reviews of the Project, largely based on the social and environmental mitigation measures set out in this ESMP. Such reviews will be undertaken in accordance with a predetermined protocol as agreed with EHL. EHL, contractors and subcontractors will cooperate with the IESC in the execution of monitoring reviews. Upon completion of reviews, the IESC will provide EHL and the Lender Group with a draft report. The draft report will be discussed between the IESC, EHL and the Lender Group, following which the IESC will provide EHL with a final report, which in turn will be disclosed on the Project website. EHL will steward findings of the reviews.

6.3 Non-conformance and corrective action

A database(s) will be established and used for tracking and stewardship of non-conformances identified as part of monitoring, assessment and audit activities.

The database(s) will include: details of environmental and social non-conformances; details of all environmental and social field observations; remedial/corrective actions required; assigned actions/timings of responsible parties; and the status of remedial/corrective actions.

It will also include details regarding incidents, as defined in Section 7.0. EHL will ensure the database(s) remains current and relevant items are made available to the IESC/Lender Group upon request. These requirements apply equally to contractors and subcontractors where appropriate.

EHL has assigned three levels of non-conformance and an additional observation level, as presented in Table 6-1.

Table 6-1: Non-conformance levels

LEVEL	DESCRIPTION	DISPOSITION
Field Observation	A potential non-conformance situation where an observation, intervention, and/or corrective action is required in order to prevent non-conformance.	Field observations will generate a corrective action request or a recommendation for further action. A field observation that is not closed-out in a timely manner or repeat field observations may escalate to a non-conformance.
Severity Level I	A non-conformance is a situation not consistent with ESMP requirements, but not believed to involve damage or reasonable expectation of damage to the environment or community or individual. It is typically aligned in terms of potential consequence with EHL definitions for Severity Level <0 and 0 Incidents.	Severity Level I non-conformances will generate a corrective action request or a recommendation for further action.
Severity Level II	A non-conformance situation that typically includes observed damage or a reasonable expectation of damage to the environment or community or individual. It requires expeditious corrective action to prevent an occurrence or reoccurrence. It is typically aligned in terms of potential consequence with EHL definitions for Severity Level 1 Incidents.	Severity Level II non-conformances will generate a corrective action request and a formal non-conformance notice. Level II non-conformances may result in stopping activities associated with the particular work scope.
Severity Level III	A critical non-conformance situation, typically including observed significant damage or a reasonable expectation of significant damage to a sensitive environment or community or individual. It requires expeditious corrective action to prevent an occurrence or reoccurrence. It is typically aligned in terms of potential consequence with EHL definitions for Severity Level 2 and 3 Incidents.	Severity Level III non-conformances will generate a corrective action request or a recommendation for further action and will result in stopping activities associated with the particular work scope.

As referenced in Table 6-1, the categorisation of non-conformances is aligned with EHL's incident levels (Severity Level <0, 0, 1, 2, 3) as defined in EHL's incident management process. This enables consistency with EHL notification and reporting to EHL and the IESC/Lender Group.

EHL reports non-conformances that are identified during the assessment and audit processes to the IESC/Lender Group.

Severity Level III non-conformances are notified to the IESC/Lender Group within three business days. A report is provided within five business days.

Severity Level II non-conformances are reported to the IESC/Lender Group and DEC in summary form as part of the biannual/annual Environmental and Social Report.

Severity Level I non-conformances and field observations are reported to the IESC/Lender Group as a numeric total, as part of the biannual/annual Environmental and Social Report.

All documentation relating to non-conformances is made available as part of periodic audits undertaken by the IESC/Lender Group.

6.4 Performance indicators

Performance indicators are used to measure and track the performance of the mitigation and control measures described in the EMPs and SMPs. Indicators can be divided into two groups – leading indicators and lagging indicators. Leading indicators are those that can be used to identify potential problems/risks prior to the occurrence of an incident or development of an adverse situation, whereas lagging indicators are those that characterise situations or events that have already occurred, and that may be used to verify or change existing policies, programs or practices. The EMPs and SMPs each contain performance indicators and assign reporting frequency for EHL. Performance indicators may also be developed for contractors if appropriate and incorporated into relevant contracts and management documents. The EHL OIMS Management Committee will periodically review the performance indicators in accordance with OIMS System 1-1: Management Leadership and Accountability as discussed in Section 3.0.

7.0 INCIDENT MANAGEMENT AND NOTIFICATION

7.1 Incident management

EHL has an established incident management system that defines the requirements for managing incidents, including near misses. This system also supports the emergency preparedness and response system and is guided by OIMS System 9-1 Incident Management.

An incident is defined as a specific event, sequence of events, or extended condition that has had an unwanted or unintended impact on safety, security, health, the livelihood of people and/or an impact on property, on the environment, or on legal/regulatory compliance.

EHL employees and contractors are required to immediately report all incidents to EHL management, including lower severity incidents and near miss incidents. All incidents will be investigated in accordance with EHL guidelines. Investigations are performed to gather information, identify causes, and develop corrective action plans to prevent a reoccurrence.

The incident management process is comprised of the following elements, some of which occur concurrently during implementation:

- Incident classification
- Incident notification (internal and external)
- Injury/illness case management (e.g. diagnosis/treatment/surveillance)
- Incident investigation, including causal analysis and identification of corrective actions
- Incident reporting (internal and external)
- Tracking of corrective actions to closure
- Sharing lessons learned (internal and external)

7.2 Incident classification

Classification is an important element of the incident management process, as the level of effort and pace of subsequent incident management activities is directly related to the severity level of the incident.

Accordingly, the probable classification of an incident is defined early in the incident management lifecycle (when all information may not be known). To be effective, the classification process requires current, factual knowledge about the incident. Where facts are scarce and/or evolving, and depending upon known circumstances at the time, EHL may define the most likely severity level (i.e. a credible worst case scenario) when performing notifications. In such cases, adjustments to the initial classification are made as the incident evolves and more information becomes available.

EHL uses a standardised process to determine the classification and the associated severity level of an incident. Once the classification and severity level are determined, the incident is communicated to the appropriate organisational levels to ensure management is aware of the incident, at a pace commensurate with the defined Severity Level.

EHL considers six primary exposure factors when classifying an incident. These are Health/injury, Security, Environment, Public disruption, Reputation, and Financial.

EHL assigns a Severity Level of <0, 0, 1, 2, or 3 to each of these primary exposure factors, where <0 is the least severe and 3 is the most severe exposure. The overall incident Severity Level is then determined by the highest Severity Level assigned to any one of the six primary exposure factors. The overall incident Severity Level then determines the extent and pace of upward notification.

The financing agreements require EHL to perform notification/reporting to the IESC/Lender Group for serious incidents that have a material adverse impact on the environment, worker

health and safety, or a Project-affected community, which occurs as a result of Project development, construction or operations.

Serious incidents are consistent with the EHL defined Severity Level 2 and 3 incidents. Examples of what would be considered serious incidents for each of the six primary exposure factors are:

- Health/injury:
 - Fatality or serious debilitating injury to EHL personnel, contractors or the public
 - Fatality or serious debilitation to EHL personnel from a serious illness event
 - Infectious disease outbreak which significantly impacts operations or the public
- Security:
 - Homicides/kidnapping of EHL personnel and contractors
 - Forcible breach of facility perimeters by the public
 - Substantial disruption of work site activities which significantly impacts production
- Environmental:
 - Spills/releases of significant volume, or into environmentally sensitive areas
 - Significant impacts to public water supplies
 - Spills/releases requiring public evacuation
 - Significant/irreversible impact to legally designated protected areas, International Union for Conservation of Nature listed species or cultural heritage sites
- Public disruption:
 - Evacuation of the public due to operational incident
 - Unplanned significant disruption of public infrastructure/resources
 - Public disturbance providing a credible substantial threat to local peace/order, Project personnel, or nearby communities
- Reputation:
 - Longer term industrial actions which significantly impact operations
 - Enforcement actions by regulators
- Financial:
 - Extended periods of non-routine operational shutdown due to an operational incident
 - Significant loss due to damage/fire
 - Extended periods of operational shutdown due to natural disaster

EHL recognises social considerations may be an underlying cause or contributing factor to several of the defined exposure factors, or in some cases a defined incident may stimulate a social response from the public, which may increase exposure or otherwise create sensitivities related to incident response. EHL's experience from the construction phase indicates that unresolved social issues in the Papua New Guinea context can frequently and quickly escalate to a defined incident which, depending on the Severity Level, would trigger incident notification/reporting based on the defined exposure factors. Given the importance of effective management of social considerations, EHL actively monitors social issues through a structured grievance process, with the objective of avoiding/mitigating social issues that could escalate if not addressed in a timely manner.

It is EHL's intention to perform the required notifications/reporting in alignment with the financing agreements, in both a timely and transparent manner. The size, complexity and nature of operations do periodically create challenging scenarios which require in-depth analysis to determine if IESC/Lender Group notification/reporting is required.

7.3 Incident notification

EHL will use a structured, management-led process to determine notification/reporting requirements in situations where the characteristics of an incident make notification/reporting requirements unclear.

Notification/reporting will be conducted in accordance with the following criteria. All of the criteria below must apply to trigger IESC/Lender Group notification/reporting:

- Serious incidents that have a material adverse impact on the environment, worker health and safety, or a Project-affected community
- Occurs as a result of Project activities, whether occurring inside or outside of established permanent facilities but at Project associated facilities/areas
- EHL dedicated aviation/marine/ground transportation which occurs outside of EHL associated facilities/areas
- Incidents considered work-related in nature; meaning there was an identifiable "industrial" event/exposure which occurred in, or was triggered by, the work environment and caused/contributed to the incident

EHL will consider courtesy notification for serious incidents that do not address all of the (applicable) criteria, particularly for incidents that are slow to evolve and/or may generate media reports that may come to the attention of the IESC/Lender Group.

The incident management system includes detailed guidance for performing notifications to internal stakeholders (e.g. field, asset, business unit, and corporate levels) and external stakeholders and/or designated Papua New Guinean authorities (e.g. Department of Petroleum and Energy, Department of Labour and Industrial Relations, DEC, Department of Health, National Maritime Safety Authority, Civil Aviation Safety Authority). Contact information for internal and external stakeholders is included in the incident management system and is aligned with corporate protocols, IESC/Lender Group requirements, and Papua New Guinean statutory obligations.

7.4 Emergency preparedness and response

EHL has a well-established and practiced emergency response system. This includes a detailed initiation and response structure that covers the Emergency Support Group, Incident Management Team, and specific incident response arrangements. The system uses the People, Environment, Assets and Reputation (PEAR) process to ensure that the safeguarding of all personnel (including the public) is always the top incident management priority, regardless of the situation. OIMS System 10-2 Emergency Preparedness and Response provides the overall framework for establishing requirements for plan development (EHL, site level and subject-specific plans), review and distribution, and training of appropriate personnel. Training includes participation in simulated exercises and feedback as part of a continuous improvement process.

The EHL emergency response plan focuses on strategic actions and issues. Site level plans are tactical in nature and include response procedures for defined emergency scenarios. In some instances, emergency scenarios will reference specialised response plans, an example is the Oil Spill Contingency Plan. This Plan provides detailed response procedures to mitigate a potential spill on land or in water. All of these plans follow a tiered approach in responding to emergency situations as outlined in Figure 7-1.

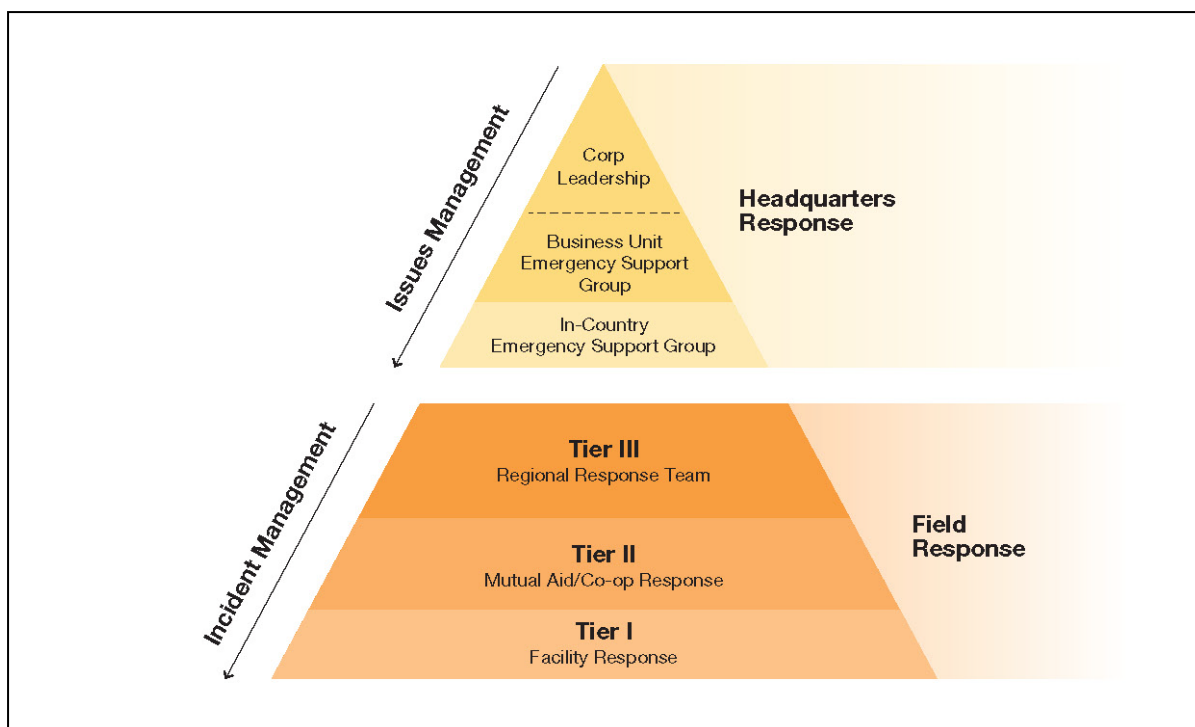


Figure 7-1: Esso Highlands Limited emergency response model

The tiered approach provides for the escalation of field (tactical) response efforts and is defined as:

- **Tier I:** Incident is small, is deemed under control, and may involve a response from a local company-managed resource
- **Tier II:** Incident is large or complex, is deemed under control, and involves mutual aid cooperative response and/or coordinated support from other company-managed worksites in-country
- **Tier III:** Incident is large or complex, is deemed to be not under control, and requires response by the appropriate company managed Regional Response team and specialised resources, some of which may be managed by third parties

8.0 REPORTING

8.1 Internal

Monitoring results from the implementation of this ESMP, including any non-conformances and associated corrective actions, will be periodically reported and made available to EHL line management and the Production Company as appropriate.

Where contractors are used, and depending upon the risk level of their work scope, they will provide EHL with a regular Environmental and Social Report. These reports will include both contractor and subcontractor data.

EHL internal reporting and contractor reporting will generally include:

- Details of pre-construction surveys in the reporting period and additional management and mitigations arising where applicable
- Details of environmental monitoring (sampling and analysis) and social monitoring during the reporting period
- Reporting of performance indicators applicable during the reporting period
- A summary and status of incident notifications
- A summary and copies of notifications and other reports made to Papua New Guinean Government agencies
- A summary and status of non-conformances and field observations documented as part of verification and monitoring
- A summary of assessment and audit reports
- A summary of grievance management (worker and community) applicable during the reporting period
- A summary of stakeholder engagement activities conducted during the reporting period
- The number of Papua New Guinean Government agency inspections (location, date, time and outcome)

8.2 External

EHL will prepare and submit a regular environmental report to the DEC. The structure, content and format of the report will be agreed with the DEC. As a minimum, the report will contain:

- Details of environmental monitoring (sampling and analysis) undertaken during the reporting period
- Details of stakeholder engagement activities undertaken during the reporting period
- A summary and status of incidents that occurred during the reporting period
- A summary and status of non-conformances, and corrective actions undertaken or planned

The DEC will also be notified of significant environmental incidents pursuant to the Environment Permit.

EHL will prepare and submit to the IESC/Lender Group a biannual/annual production Environmental and Social Report for the period following completion of construction and prior to operations, followed by annual reports thereafter. These reports will be made available via the EHL website. As a minimum, the report will contain:

- Details of environmental monitoring (sampling and analysis) and social monitoring undertaken during the reporting period
- Details of progress against the Biodiversity Strategy
- Reporting of environmental and social performance indicators applicable during the reporting period
- An outline of significant environmental and social activities during the reporting period

- A summary of verification, assessment and audit activities undertaken during the reporting period
- A summary and status of incidents, non-conformances, field observations and corrective actions undertaken
- A summary of grievance management (worker grievances and community grievances) applicable during the reporting period
- A summary of public consultation and disclosure activities applicable during the reporting period
- A summary of activities and performance against the Community Support Development Plan
- A summary of workforce statistics, procurement and supply chain statistics
- Details of livelihood restoration monitoring where applicable
- Details of additional land acquisition and compensation and resettlement where applicable

EHL will also comply with Papua New Guinean Government notification requirements pertaining to Project worksites and/or under permits and licenses held by EHL.

9.0 ROLES AND RESPONSIBILITIES

EHL Production teams assigned to the implementation of this ESMP include: Human Resources, Safety, Health and Environment (SHE), L&CA, Medicine and Occupational Health, Public and Government Affairs, Procurement and Security. The SHE Manager, who reports directly to the Deputy Production Manager, will own this Plan from an OIMS functional perspective. The SHE Manager and L&CA Manager hold the primary accountability for the implementation of the ESMP; however line management is responsible for its implementation. As the affiliate matures, ownership of OIMS Systems may be transferred to other managers as required for efficiency improvements.

9.1 Roles and responsibilities

For this ESMP, the two key roles are that of the SHE Manager and L&CA Manager, as summarised in Table 9-1. Each of the environmental and social management plans define key positions, roles and responsibilities specific to their content.

Table 9-1: Roles and responsibilities for key positions

POSITION	DESCRIPTION
SHE Manager	<ul style="list-style-type: none"> • Directly oversees the activities of the Environmental and Regulatory and Safety teams • Directs implementation and monitoring of this ESMP, the Biodiversity Strategy and the Regulatory Compliance Manual • OIMS Owner responsibilities for Risk Management, Compliance with Laws and Regulations, Personnel Safety, Occupational Health, Environmental Management, Incident Management, and Emergency Response • Facilitates the setting of environmental and regulatory goals and objectives and communicating specific regulatory compliance and environmental protection and performance strategies • Provides appropriate resources to support regulatory compliance and environmental activities
L&CA Manager	<ul style="list-style-type: none"> • Directly oversees the activities of the L&CA team • Coordinates SMP activities with other OIMS Systems necessary for successful management • Provides active leadership in the inclusion of socioeconomic considerations in the Environmental Business Planning process, including setting SMP strategies and objectives • Approves specific socioeconomic objectives identified as part of Environmental Business Planning • Has primary responsibility for the effectiveness of the SMPs • Communicates SMP improvement objectives and targets for the Unit • Reviews SMP performance trends on a regular basis and stewards performance against objectives and targets • Ensure adequate resources are available to meet SMP objectives • Monitors and stewards completion of budgeted socioeconomic initiatives

9.2 Competency

Key positions are identified through assessment criteria to ensure personnel have the relevant knowledge and skills for their positions. For example, personnel performing tasks that may involve environmental impacts will have the knowledge and skills necessary to perform their work in a manner consistent with the EHL Environmental Policy.

Ongoing training and skills assessment will be integrated into management plans to ensure staff remain competent in their roles and aware of Project social and environmental commitments.

Annual business plans will be used to: identify key environmental and social drivers; set objectives in focus areas; establish actions and set targets to measure progress.

During this planning, the list of key positions and required job competencies will be re-assessed and updated in accordance with organisational structure or operational changes. Organisational charts and individual job descriptions will be periodically reviewed.

10.0 TRAINING AND AWARENESS

EHL will ensure that EHL personnel responsible for the execution of the tasks and requirements contained within this ESMP are competent on the basis of education, training and experience as described in OIMS System 5-1 Personnel Selection, Placement and Competency Verification, and OIMS System 5-2 Personnel Training. EHL will ensure contractors and subcontractors provide assurance of their personnel's competence to EHL.

The EMPs and SMPs describe in detail the necessary training requirements.

EHL will use personnel with environmental and social training appropriate to their job description, specific work scopes and level of responsibility. Focused training will also be conducted to ensure that personnel are fully conversant with aspects of this ESMP relevant to their duties.

EHL will appropriately document environmental and social training activities through a training needs assessment, training matrix and training records as outlined in the following sections.

10.1 Training needs

An initial evaluation of workforce training needs associated with this ESMP will be conducted to enable EHL to develop and maintain a training matrix. The matrix details the training needs of each member of the organisation based on their job description and level of environmental and social responsibility and involvement. Indicative training levels are shown in Table 10-1.

Table 10-1: Indicative training and awareness levels

TYPE OF TRAINING	DESCRIPTION
Induction	Induction directed at visitors, providing a summary of key social and environmental aspects, controls and relevant instructions. This training is specific to each location and facility.
General awareness	Awareness and overview, directed at personnel who do not have direct duties in respect of the relevant EMP and/or SMP(s), providing a summary of key environmental and social aspects, controls and relevant instructions. This training is specific to each location and facility.
Management awareness	Awareness, directed at management and supervisory personnel, covering the key aspects of the relevant EMP and/or SMP(s).
Job-specific training	Job-specific training, given to personnel having direct duties in respect of the relevant EMP and/or SMP(s), providing a detailed review of specific components of the relevant EMP and/or SMP(s) and a detailed description of individual duties.

10.2 Environmental and social training requirements

Similar to safety, there is an environmental and/or social component to every job or work activity. Table 10.2 illustrates the type of environmental and social training that will be provided by job role.

Table 10-2: Typical environmental and social training

PERSONNEL	TOPIC	FREQUENCY
EHL production personnel	<p>Environmental and social awareness training:</p> <ul style="list-style-type: none"> EHL policy and environmental and social expectations and requirements General Project environmental and social expectations and requirements Project environmental and social objectives and general overview of environmental and social effects avoidance and mitigation measures Project environmental and social incident reporting Environmental and social sensitivity training of key issues (biodiversity, cultural heritage, waste management, etc.) 	<ul style="list-style-type: none"> Once (with refresher training as needed)
Production Environmental and Social Advisors, specialists or personnel identified as responsible for specific environmental and social-related tasks (EHL, contractor and subcontractor)	<p>Environmental and social issue training:</p> <ul style="list-style-type: none"> Training on the key management, and mitigation measures of the EMPs/SMPs Field monitoring, incident investigation and response Monitoring and evaluation skills <p>Other environmental and social issues dependent on roles and responsibilities.</p> <p>Typical topics include:</p> <ul style="list-style-type: none"> Stakeholder engagement and grievance management Community health Respect for indigenous cultures Human rights IFC Performance Standards Ground disturbance Surface water release Waste management Air emissions reporting Ecological and sustainable natural resource management Cultural heritage Social awareness Social interaction principles 	<ul style="list-style-type: none"> Ongoing, with training to be provided prior to start-up of identified tasks Updated if tools or procedures change Refresher frequency as required, based on environmental and social risks associated with the task
Site personnel (EHL, contractor and subcontractor)	<p>Environmental and social site awareness training:</p> <ul style="list-style-type: none"> Detailed site-specific training to understand the production expectations, requirements, and commitments. 	<ul style="list-style-type: none"> Once (with refreshers as needed)
Landowner and community service provider	<p>Depending on the capacity level of the service provider, Operations and Business Development groups may need to train the service provider to provide the services requested.</p> <p>Training topics are likely to include:</p> <ul style="list-style-type: none"> Identification and control of invasive species Identification and control of plant pathogens Erosion and sediment control 	

10.3 Resourcing

Both EHL and contractors will be responsible for delivering the appropriate levels of training required during the production phase. Table 10-3 provides an overview of the type of roles that will be responsible for meeting the Project's training needs during production.

Table 10-3: General environmental and social training roles and responsibilities

POSITION	RESPONSIBILITIES
Management	<ul style="list-style-type: none"> • Ensure competent and trained resources are available to execute production activities
Site Superintendent	<ul style="list-style-type: none"> • Ensure individuals have the required knowledge and skills to perform job tasks, while managing environmental and social risks • Develop training plans in conjunction with employees to meet identified training requirements and enable skills development. • Review training progress annually
Environmental and Social Advisors and Specialists	<ul style="list-style-type: none"> • Develop environmental and social training with support from specialist training resources
General personnel	<ul style="list-style-type: none"> • Complete training requirements • Provide feedback on training received
Training resources	<ul style="list-style-type: none"> • Develop environmental and social training programs with support from Environmental and Social Advisors and Specialists • Deliver training and evaluate training results
Course developer	<ul style="list-style-type: none"> • Ensure training content is technically accurate, practical and meets identified needs • Provide advice regarding needs analysis, program design, evaluation, and improvement
Contractors and subcontractors	<ul style="list-style-type: none"> • Where applicable, ensure the EMPs and SMPs detail the training requirements, responsibilities, and timing for environmental and social training consistent with this ESMP • Coordinate environmental and social training for their workers

10.4 Training programs and delivery

During production appropriate personnel will receive the Project’s environmental and social awareness training package. Both the training package and other forms of environmental and social awareness training will be delivered through a mix of on-the-job training, mentoring, self-study, classroom instruction, seminars, workshops, computer-based training and emergency response or similar drills.

Computer-based training will be used to track worker competency, training and re-qualification requirements. Training progress will be reviewed annually.

Contractors will also document their training activity, detailing the training needs of each member of their organisation.

It is anticipated that during Production phase, training requirements will change to more appropriately match Production needs at a given time. Therefore training packages and delivery will be regularly reviewed to reflect Production activities and job roles at the time.

11.0 MANAGEMENT OF CHANGE

EHL has developed local tools and procedures to meet the requirements outlined in the Production Company OIMS System 7-1 Management of Change (MoC). The tools and procedures are described in the EHL Management of Change Manual.

The principles of the MoC process are to:

- Manage permanent, temporary and urgent/emergency changes to procedures or process equipment
- Provide for a thorough evaluation of the proposed change
- Consider factors for the identification and control of potential OI risks associated with the proposed change
- Communicate the proposed change to personnel whose job tasks may be affected by the change and who may require training prior to implementing the change
- Ensure critical documentation remains up-to-date with changes as they are implemented.

11.1 Esso Highlands Limited Management of Change process

Any EHL Employee or EHL Contractor can identify or initiate the MoC process.

A MoC Screening Checklist will be the starting point for evaluating each MoC. The Checklist will provide a guide for the MoC coordinator to identify any reviews that may be necessary. It will also enable the change to be assessed and prioritised for completion.

11.2 Environmental and Social Management Plan interface

The EHL Management of Change Manual contains provisions to ensure ESMP requirements are considered as part of the evaluation process. It includes specific questions for the Change Coordinator to ensure that the change complies with SHE requirements which include, but are not limited to:

- Social and environmental assessment and management systems
- Labour and working conditions
- Pollution prevention and abatement
- Community health, safety and security
- Land acquisition and involuntary resettlement
- Biodiversity conservation and sustainable natural resource management
- Indigenous Peoples
- Cultural heritage

11.3 Lender Group Management of Change review process

If a change is identified as having a potential impact with regard to the ESMP, the appropriate Lender Group Classification Level will be determined. This Classification Level will serve as the basis for Lender Group notification and/or review. The process for Lender Group review and approval of Production MoCs is shown in Figure 11-1.

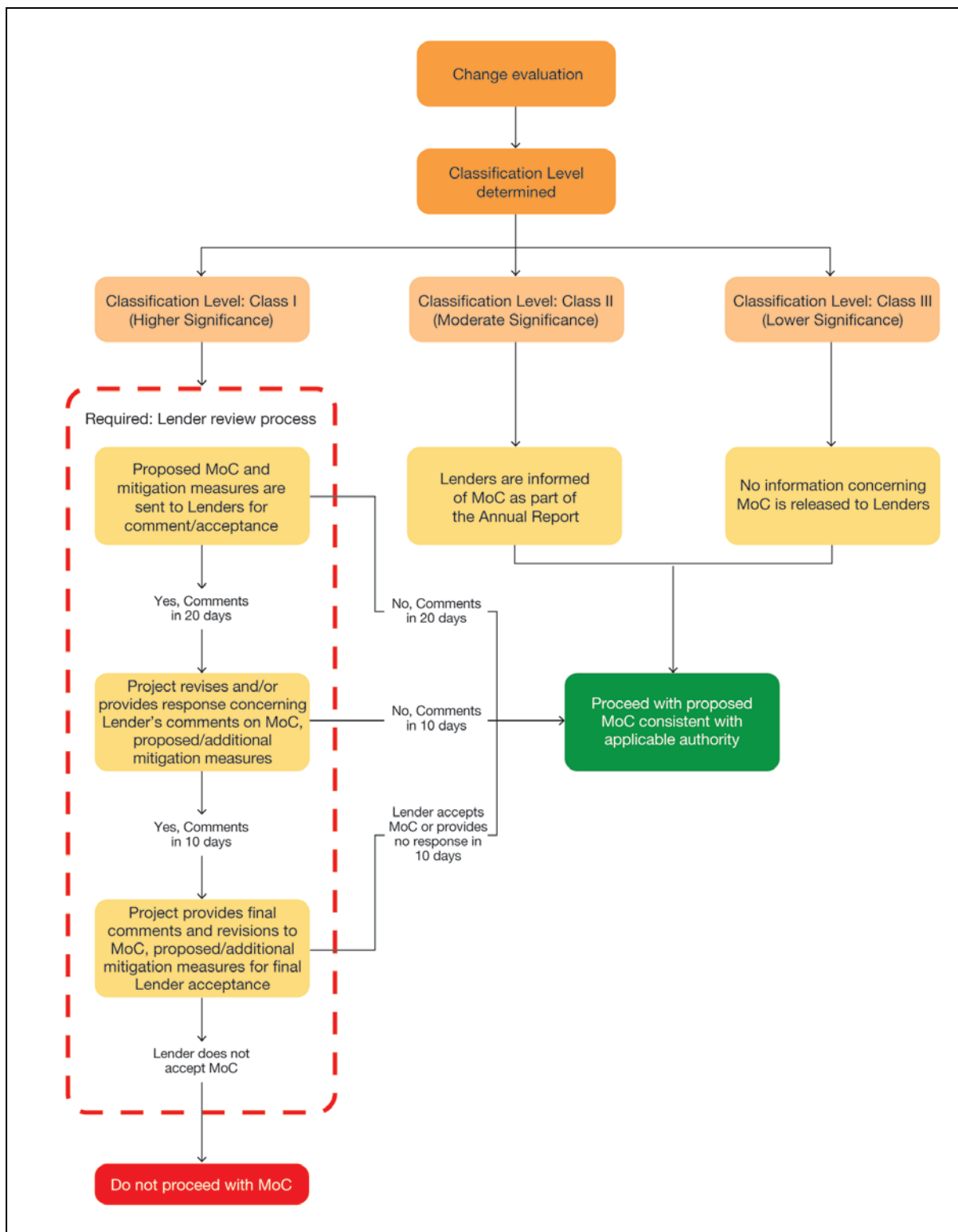


Figure 11-1: Lender Group Management of Change process

Classification Levels and the criteria for determining these are shown in Table 11-1⁴.

⁴ Classification Levels for safety, security, social, health and environmental aspects of proposed MoC will be evaluated using the EHL MoC risk matrix.

Table 11-1: Management of Change classification

CLASSIFICATION LEVEL	CRITERIA
Class I: Higher Significance	<p>Change includes activities with potential impacts on the environment, freehold or customary land, neighbouring communities, occupied dwellings, utilised social infrastructure, or cultural resources that are not detailed in the EIS or that are physically located outside the scope/study area of the EIS, Pipeline Route Confirmation Survey, and Department of Petroleum and Energy Operating Permit that are reasonably likely to have significant adverse impacts which are not mitigated by this ESMP.</p> <p>One or more of the following conditions are encountered or otherwise might be irreversibly impacted because of the proposed change:</p> <ul style="list-style-type: none"> • a. significant cultural heritage • b. critical habitat • c. protected species • d. permanent exceedances of emissions/effluent standards • e. physical relocation or economic displacement of households or other enterprises not covered by the principles and types of compensation measures addressed in the Resettlement Policy Framework <p>Change falls outside area of EIS and Department of Petroleum and Energy Operating Permit and will require substantial additional environmental and social assessment and mitigation measures to ensure that it does not irreversibly impact important resources.</p> <p>Change of Project Standards.</p>
Class II: Moderate Significance	<p>Change including activities with potential impacts on the environment, freehold or customary land, neighbouring communities, occupied dwellings, utilised social infrastructure, or cultural resources that are not detailed in the EIS or that are physically located outside of the scope/study area of the EIS, Pipeline Route Confirmation Survey, and Department of Petroleum and Energy Operating Permit that:</p> <ul style="list-style-type: none"> • a. Does not impact critical habitats but might impact natural habitat • b. Does not impact significant cultural/archaeological finds or social infrastructure, either because none exist in the impacted area or they can be avoided or approved mitigation measures implemented • c. Does not result in significant impacts to communities, possessors of land, or landowners that are not covered by mitigation, compensation or other measures previously adopted by the Project • d. Involves physical or economic displacement of people not covered by the principles and types of compensation measures addressed in the Resettlement Policy Framework • e. Does not require significant changes to this ESMP <p>Change requires additional but limited cultural heritage surveys, or environmental and social assessments.</p>
Class III: Minor Significance	<p>Change including activities within the scope/study area of the EIS, Pipeline Route Confirmation Survey, and Department of Petroleum and Energy Operating Permit.</p> <p>Change does not impact EHL's ability to meet the requirements of this ESMP.</p> <p>Change may require additional but limited environmental or social study or survey.</p>

For MoCs that require Lender Group notification (Class I or II), details of the MoC will be included in the biannual/annual Environmental and Social Report.

12.0 REFERENCE LIST

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13.0 APPENDICES

- Appendix 1: Environmental Management Plan – Upstream Facilities, Pipelines and Infrastructure
- Appendix 2: Environmental Management Plan – LNG Plant and Marine Facilities
- Appendix 3: Social Management Plan – Community Development Support Management Plan
- Appendix 4: Social Management Plan – Community Health, Safety and Security Management Plan
- Appendix 5: Social Management Plan – Labour and Working Conditions Management Plan
- Appendix 6: Social Management Plan – Land Access, Resettlement and Livelihood Restoration Management Plan
- Appendix 7: Social Management Plan – Procurement and Supplier Management Plan
- Appendix 8: Social Management Plan – Training and Vocational Education Management Plan
- Appendix 9: Social Management Plan – Stakeholder Engagement Management Plan