TOTAL
TOTAL E&P PNG LIMITED

PAPUA LNG PROJECT

UPSTREAM ENVIRONMENTAL IMPACT STATEMENT

VOLUME 1: MAIN REPORT

Chapter 19: Environmental and Social Management, Monitoring and Reporting

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TOTAL E&P PNG LIMITED

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19. Environmental and Social Management, Monitoring and Reporting

This chapter outlines how the Project's predicted impacts, identified in Chapters 11 to 18, will be managed and documented in the Project's Health, Safety and Environment and Social Management System. It describes the framework for environmental and social management, monitoring and reporting under which the Project will operate.

The Project Environmental and Social Management Plan (ESMP) will be developed and implemented within this framework, from which detailed management plans will be developed. The management plans will support further implementation of the mitigation and management measures, and will define the monitoring requirements to assess the performance and efficiency of the mitigations. Specific Project and contractor management plans will; therefore, provide additional prescriptive detail, objectives, specific measures, targets and responsibilities.

19.1 Policy, Legislation, Guidelines and Standards

The *Oil and Gas Act 1998* and the *Environment Act 2000* are the key pieces of legislation regulating the Project. These Acts govern the activities and standards for environmental protection and sustainability under which the Project will operate. Other applicable legislation, guidelines and standards are detailed in Chapters 1 and 2. These extend to the Project's suppliers and contractors.

The key Total E&P PNG Limited (TEP PNG) health, safety and environment (HSE) commitments that underpin the development and implementation of the Project's ESMP are defined in the following documents:

- TEP PNG Health Safety and Environment Charter (L0-CHT-MAN-01-R0).
- TEP PNG Biodiversity and Ecosystem Charter (L0-CHT-MAN-02-R0).
- TEP PNG Societal Policy (L1–POL–MAN–05).

The Project ESMP will be further developed when required to meet potential additional Lender requirements.

19.2 Environmental and Social Management System Overview

19.2.1 One-MAESTRO Overview

The Project's environmental and social management. is guided by TOTAL's health, safety and environment (HSE) framework, Management and Expectations Standards Toward Robust Operations (abbreviated to One-MAESTRO). One-MAESTRO is based on the Occupational Health and Safety Management System OHSAS 18001, the International Organization for Standardization ISO 14001 standard for environmental management systems, and industry best practice.

One-MAESTRO's principle elements are:

1. Management Leadership and commitment: Management at all levels demonstrates exemplary conduct, rigor, vigilance and professionalism regarding HSE in all activities.

2. Compliance with laws, regulations and group requirements: Comply with applicable laws, regulations, relevant industry standards, voluntary commitments and group requirements in all activities.
3. Risk management: Systematically identify hazards and assess the level of risk of any activities, and define and implement the required mitigating measures. Risk reduction measures will be periodically assessed.
4. Operational accountability: All employees and contractors are responsible for managing risks and limiting adverse impacts at their level.
5. Contractors and suppliers: Contractors and suppliers are assessed and selected by considering their HSE performance, expected to comply with the applicable HSE obligations and responsibilities, and to control inherent risks of contracted activities.
6. Competencies and training: Competencies are defined for all activities, taking HSE into consideration. Training and development plans are provided, and personnel competencies regularly assessed.
7. Emergency preparedness: Emergency plans are developed based on the outcome of a risk assessment, and an organization set up so that the plans and appropriate resources are constantly on hand. Plans are regularly tested and updated.
8. Learning from events: All incidents are reported and analyzed to determine their root cause. Corrective actions and preventive measures are defined, and the process appropriately documented and reported.
9. Monitoring, audits and inspections: Management regularly assesses the HSE performance through monitoring, audits and inspections. Any shortfalls against the set of objectives are analyzed and corrective actions or improvement plans defined, implemented and monitored.
10. Performance and improvement: The HSE management system effectiveness is monitored through key HSE performance indicators. Corrective and preventative actions are prioritized according to the risk level or associated impacts.

These principles are entrenched in the Project's environmental and social management system, providing guidance and a structured approach to managing environmental and social impacts, and to continually improve environmental and social performance.

19.2.2 Feedback and Improvement

One-MAESTRO's principles operate under a 'plan, do, check, act' cycle to continually improve processes and practices. The steps are:

- Plan – define the policy and conduct planning to effectively consider, in the context of the operation, the hazards and risks, legal and other requirements, the company's objectives and targets, and the requirements for management programs.
- Do – execute the plan and take steps, such as training and awareness, in an organized manner to implement the management programs in line with the policy, objectives and targets.
- Check – conduct monitoring, auditing and inspections to verify conformance with the company's objectives, targets and management plan requirements.
- Act – follow a systematic performance review and take action to implement early preventive and corrective actions, and to standardize or improve the process.

Figure 19.1 illustrates this process.

This process follows the principles of adaptive management, in line with the IFC Performance Standard requirements (IFC, 2012), whereby management accommodates for uncertainty in mitigation and management planning, and allows it to be appropriately managed through feedback mechanisms.

The ESMP and monitoring procedures will be subject to periodic review and evaluation to identify any deficiencies. The ESMP will address the outcomes of commitments made in this environmental impact statement, the environment permit conditions when they become available, design refinements as Project development progresses, and any changes in regulatory requirements.

Unplanned incidents will also trigger an investigation and review of the ESMP; procedures will be revised, and management measures updated if necessary when deficiencies are identified.

19.3 Organizational Structure

19.3.1 TEP PNG

TEP PNG environmental and social management teams will oversee the Project's environmental and social responsibility, and will:

- Further develop and implement the Project's environmental and social management framework for the respective Project phases.
- Communicate expectations, including legal obligations, standards and targets that must be met, and the commitments of the workforce and contractors.
- Assist contractors to implement the Project's ESMP.
- Train or induct the workforce and contractors appropriately.
- Support and monitor the implementation of the management measures throughout all Project phases and activities.
- Monitor defined performance indicators and evaluate results against performance objectives.
- Systematically audit and assess environmental and social management to evaluate conformance, compliance and integrity.
- Review management measures and strategies, and revise, adapt and improve the ESMP when necessary.
- Maintain management systems and documentation.
- Undertake regulatory and Lender reporting as required.
- Interface with government bodies and other authorities regarding HSE requirements.
- Maintain community engagements in relation to Project activities, grievances, and mitigation programs.

19.3.2 Contractors

Multiple contractors will be involved in the various Project phases. All personnel and contractors are responsible for the quality of their work, conformance and compliance with the applicable ESMP and legislation requirements, managing risks and limiting their impacts. The contractors undertaking activities on behalf of TEP PNG will be contractually obligated to implement and comply with the ESMP and all relevant legislative requirements. The environmental obligations

OneMAESTRO IMPROVEMENT PROCESS: PLAN, DO, CHECK, ACT

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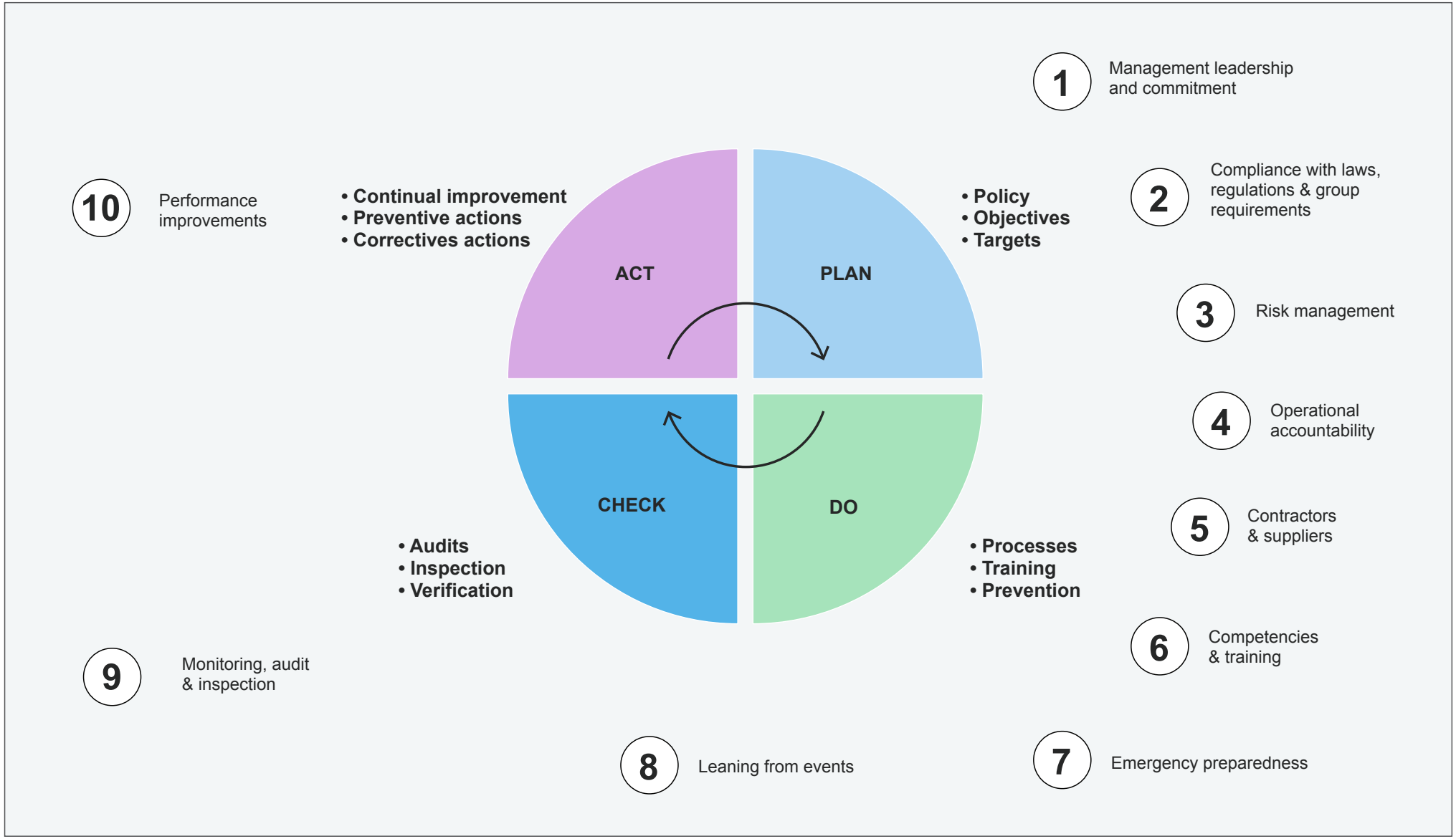
FIGURE 19.1



Source: TOTAL, 2018.

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consigned to TEP PNG will also flow contractually to the contractors. TEP PNG is liable for contractor conformance and adherence to the ESMP and will monitor the contractor's social and environmental performance to verify conformance with the ESMP and all legislative and environment permit conditions.

The contractor must have adequate resources available to allocate on an ongoing basis to effectively implement aspects of the ESMP applicable to their activities. The contractor's management plans and procedures will describe the resources, responsible parties of each management task, training and competency requirements, detailed mitigation measures, monitoring, reporting and communication requirements. The contractor will regularly report to TEP PNG on the performance of the contracted activities.

19.4 Environmental and Social Management Plan

The Project's ESMP is being prepared in the One-MAESTRO environmental and social management framework. The ESMP's objectives are to:

- Demonstrate compliance with regulations, and internal and Lender requirements.
- Provide supporting documentation for regulatory approvals.
- Document the implementation of the management system at the Project level.
- Assign responsibilities for environmental management so that all requirements are understood and completed, and actions and outcomes are appropriately documented and communicated.
- Provide consolidated guidance to line management on the implementation of Project-specific environmental and social management commitments identified in this environmental impact statement.
- Identify and communicate the legal obligations and expected standards in relation to contractors' environmental performance.
- Provide information on the mitigation and management measures, monitoring requirements and activities, objectives, performance indicators, corrective actions, and procedures for communication, evaluation and reporting.
- Manage the potential for unplanned events and incidents including prevention, response, reporting and corrective action.

Project ESMPs will be prepared for the construction, operations and decommissioning phases and will be submitted to CEPA. Each will address:

- Legal and other requirements.
- Roles and responsibilities.
- Competencies and training.
- Notification and reporting requirements.
- Management plans that make up the ESMP.
- Engagement and interactions.

Detailed management plans will be developed, based on the Project's environmental and social management framework, to implement the commitments and define the monitoring requirements.

The Project's approach to impacts mitigation consists of, avoiding impacts where possible, minimizing impacts when avoidance is impossible and when they remain, considering rehabilitation or restoration, and ultimately compensation/offsetting. Potential impacts may be addressed in one or more of the management plans, as impacts overlap various sensitivities.

Figure 19.2 illustrates the Project environmental and social management framework, detailing the management plans that will form part of the CESMP. The management plans will be revisited and/or specific ones created when required, to meet additional Lender requirements. These plans will be completed according to the environment permit prior to the respective Project phases commencing. The CESMP will also be revised when required based on the outcomes of the pre-construction surveys.

The operator (TEP PNG) will manage the Project's environmental and social aspects included in the environmental and social management framework in the first instance with management obligations also passed on to the contractor as appropriate.

19.5 Monitoring, Auditing and Reporting

Monitoring is a key component of the management system and is required to determine the effectiveness of the design, and construction and operational measures implemented to mitigate predicted environmental and social impacts. Such monitoring will consider internal and regulatory requirements, including the environmental permit conditions.

The ESMP will include details of the performance indicators and monitoring approach including frequency. Detailed monitoring programs will be finalized prior to construction, and will be periodically revised and updated as necessary. Records management will also be defined.

19.5.1 Environmental Impact Monitoring

Compliance with applicable standards, and the effectiveness of the Project's design controls and commitments, will be monitored and assessed against measurable performance indicators. Environmental monitoring will target air quality and air emissions; noise and vibration; vegetation clearance, disturbance and revegetation; weeds, pests and pathogens; biodiversity; groundwater, surface water, discharges and sediment; contaminants, waste management, and any further monitoring the environmental permit conditions require.

19.5.2 Social Impact Monitoring

The effectiveness of the Project's social management initiatives (see Chapters 13 and 14) will be monitored and assessed against measurable socioeconomic performance indicators. Social monitoring will target training and employment, livelihoods, community health and safety, governance, archaeology and cultural heritage, grievances and any further monitoring the permit conditions require.

19.5.3 Auditing

Inspecting and auditing of contractor activities will form part of the management system, and will comprise self-assessment and assessment of the contractor at regular intervals by TEP PNG or external independent resources when required, for quality assurance and control, and to guarantee integrity.

The audit frequency will depend on the HSE level of risk of the contracted services, as defined in TEP PNG's HSE requirements for contractors. A corrective action plan will be established when non-conformance or non-compliance is identified.

FIGURE 19.2

Construction ESMP
Phase: Construction
Operations ESMP
Phase: Operations
Decommissioning ESMP
Phase: Decommissioning
Construction Environment and Social Management Plan (CESMP)
Social Elements
• National Content Plan
• Community Development Plan
• Project-induced In-migration Management Plan
• Community Health, Safety and Security Management Plan
• Livelihood Development Plan
• Cultural Heritage Management Plan
• Stakeholder Engagement Plan
• Land Access Plan
• Resettlement Action Plan
• Labor Management Plan
Environmental Elements
• Biodiversity Action Plan
• Invasive Species, Pathogen and Pest Management Plan
• Soil Management Plan
• Water Management Plan
• Air Emissions and Greenhouse Gas Management Plan
• Noise and Vibration Management Plan
• Hazardous Materials Management Plan
• Waste Management Plan
• Site Restoration and Rehabilitation Plan
• Traffic and Transport Management Plan
• Emergency Response Plan
- Site Contingency Plans
- Oil Spill Contingency Plan
- Blow Out Contingency Plan

19.5.4 Recording and Reporting

Social and environmental performance, and incident reporting will be undertaken according to the internal applicable requirements, and externally according to relevant statutory requirements.

TEP PNG will prepare an environmental and social performance report at a frequency agreed to with CEPA that will provide the information required to satisfy any conditions stipulated in the environment permit.

Monitoring, auditing and reporting documentation will be recorded and retained according to applicable document retention policies.

19.6 Project Evolution and Adaptive Management

Refining the Project design is an ongoing process that will evolve from front-end engineering and design through to detailed design, as with any complex development project. Some changes may also occur during the construction and operations phases. This process will consider where significant impacts remain, and explore additional opportunities for mitigation.

Design amendments and changes will be managed and tracked through a management of change process. Changes will be assessed with respect to potential environmental and social impacts, and the ESMP updated accordingly.

Major changes, if they occur, will be communicated to CEPA and other relevant authorities, and appropriate actions in terms of regulatory requirements will be determined with CEPA and those other authorities.

19.7 References

IFC. 2012. Performance Standard 6 biodiversity conservation and sustainable management of living natural resources. World Bank Group. Washington, D.C.