TOTAL
TOTAL E&P PNG LIMITED

PAPUA LNG PROJECT

UPSTREAM ENVIRONMENTAL IMPACT STATEMENT

VOLUME 1: MAIN REPORT

Chapter 20: Commitments Register

TOTAL E&P PNG LIMITED

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Table 20.1 – Mitigation and Management Measures/Commitments 20–2

20. Commitments Register

This chapter collates the mitigation and management measures that have been identified in Chapters 11 to 18, to address potential impacts caused by the Project. The mitigation and management measures (commitments) in Table 20.1 were provided by technical specialists and/or are standard industry practice.

Table 20.1 – Mitigation and Management Measures/Commitments

No.	Discipline	Mitigation Measure/Commitment
Environmental Mitigation and Management Measures		
EM001	All disciplines	All sites proposed for development as part of the Project will be subject to a preconstruction survey to clearly identify acid sulfate soils, sensitive sites and habitats, e.g. roosting, breeding, nesting and threatened species sites, priority ecosystem services, archaeological sites, burial sites, sites of religious importance to be subject to specific mitigation measures.
EM002	Landform and soils; hydrology, fluvial geomorphology and sediment processes; terrestrial biodiversity	Progressively clear vegetation and rehabilitate cleared areas as soon as practicable to minimize the time cleared areas are exposed; and allow fauna to move away from areas to be cleared, where practicable.
EM003	Landform and soils; hydrology, fluvial geomorphology and sediment processes	Cut trees where practicable to retain the rootstock and maintain soil stability.
EM004	Landform and soils	Erosion and sediment control measures will be implemented for infrastructure components in accordance with good international industry practice to effectively manage stream and river flows, stormwater, surface erosion, sedimentation and scour, e.g., drainage diversion into surrounding vegetation, rip-rap aprons, rock armoring, energy dissipaters, sediment control ponds, mulch berms and sediment fences, where required, until the area has been effectively stabilized and/or rehabilitated.
EM005	Landform and soils; hydrology, fluvial geomorphology and sediment processes	Stabilize spoil stockpiles and areas of ground disturbance as soon as practicable after initial disturbance using, e.g., mulched vegetation, aggregates and soil binders.
EM006	Landform and soils; hydrology, fluvial geomorphology and sediment processes	Areas of higher risk of landslides e.g., steep gradients, previously disturbed land, likely to occur from the works, or likely to be exacerbated by the works, will be stabilized to reduce the landslide risk.
EM007	Landform and soils	Avoid disturbing acid sulfate soils, potentially in soil Complex 4 coastal soils, and Soil Complex 2 and 3 on alluvial flood plains, beach ridge and plains in the lower Purari River delta, wherever possible, otherwise handle, store, treat, manage and dispose of Acid Sulfate Soils according to good practice guidelines.
EM008	Landform and soils; surface water quality; and freshwater and estuarine biodiversity	Sewage effluents from Project facilities will be treated to meet the environment (waste discharge) permit before discharge, in accordance with applicable standards.
EM009	Hydrology, fluvial geomorphology and sediment processes	Backfill trenches as soon as practicable after disturbance, using material originally excavated from the trench as much as possible. The backfilled trenches should not exceed the preconstruction levels after the material has settled.
EM010	Hydrology, fluvial geomorphology and sediment processes	Minimize or avoid sidecasting during construction (e.g., for road, pipeline, well pad and CPF works). Any sidecasting that does occur will avoid defined stream channels.

Table 20.1 – Mitigation and Management Measures/Commitments (cont'd)

No.	Discipline	Mitigation Measure/Commitment
Environmental Mitigation and Management Measures (cont'd)		
EM011	Hydrology, fluvial geomorphology and sediment processes	Water from trenches will be discharged in accordance with applicable water quality standards with erosion and sediment controls where relevant.
EM012	Hydrology, fluvial geomorphology and sediment processes	Maintain buffer zones between permanent surface water and Project infrastructure, except to carry out works associated with the construction of watercourse crossing or where facilities are proposed to be located within that buffer.
EM013	Hydrology, fluvial geomorphology and sediment processes	Minimize in-stream and stream bank disturbance during high rainfall.
EM014	Hydrology, fluvial geomorphology and sediment processes	Implement low speed limits through areas sensitive to vessel wash impacts.
EM015	Hydrology, fluvial geomorphology and sediment processes; freshwater and estuarine biodiversity; and surface water, marine water quality	Hydrotest water management will consider: ♦ The definition of volume and discharge rates and discharge locations. ♦ Chemicals additives selection, according to requirements defined in embedded design controls ♦ Reusing hydrotest water to minimize the discharge volume. ♦ Reducing the need for chemicals by minimizing the time hydrotest water remains in the pipeline. ♦ Monitoring hydrotest water discharges to the environment against applicable limits.
EM016	Surface water quality; freshwater and estuarine biodiversity	Training and test releases of firefighting foams at the CPF are to be contained within appropriate drainage water treatment networks.
EM017	Surface water quality	Vehicle wash down and fuel handling will be undertaken considering possible receptors e.g. streams, Purari River and the marine environment
EM018	Surface water quality; freshwater and estuarine biodiversity; marine water quality	An Emergency Response Plan will be developed to effectively manage the preparedness and response to emergency events. It will contain: ♦ Site contingency plans, that will consider fire management measures. ♦ An Oil Spill Contingency Plan, that will consider spill risks for construction, operation and decommissioning of facilities and associated infrastructure, and supply services on land and in aquatic and marine environments. ♦ A Blow Out Contingency Plan including well blowout control and contingency measures.
EM019	Surface water quality; marine water quality; marine biodiversity	Vessels will be required to have shipboard Oil Pollution Emergency Plans/Oil Spill Contingency Plans as per TOTAL requirements and *Marine Pollution (Ships and Installations) Act 2013*.

Table 20.1 – Mitigation and Management Measures/Commitments (cont'd)

No.	Discipline	Mitigation Measure/Commitment
Environmental Mitigation and Management Measures (cont'd)		
EM020	Hydrology, fluvial geomorphology and sediment processes; freshwater and estuarine biodiversity	Maintain hydraulic and biological connectivity during construction and operations in natural flow lines across linear infrastructure, such as pipelines and roads, and in relation to water extraction, e.g. dams, including: ♦ Install appropriately sized culverts, drains and structures to allow fish passage, according to good international industry practice standards. ♦ Rehabilitate waterways after construction and decommissioning to a sustainable, stable state, that reflects the original character, and maintains waterway flows and connectivity.
EM021	Freshwater and estuarine biodiversity	Minimize fish entrainment by water extraction equipment, e.g., screens.
EM022	Freshwater and estuarine biodiversity	Implement lower speeds past aquatic fauna when observed in the water.
EM023	Freshwater and estuarine biodiversity; marine water quality; marine biodiversity	Management controls will be developed for weed, pathogen and pest that pose a significant threat to biodiversity, including: ♦ Specific risk-based control methods, and procedures targeting Priority 1 and 2 weeds and pest fauna. ♦ A quarantine management program for moving people, equipment and supplies in accordance with PNG law. ♦ Tools for field personnel to identify Priority 1 and 2 weeds and pest fauna.
EM024	Terrestrial biodiversity	Maintain a minimum practical distance from sensitive features to minimize potential degradation and disturbance. Buffer distances shall be ecologically relevant, considering: ♦ Sensitive habitats, i.e. primary alluvial forest, mangroves, riparian vegetation along forest streams. ♦ Habitats that provides focal breeding, roosting or feeding sites for sensitive fauna, e.g. caves, rock shelters, rock outcrops, large trees with hollows, large trees with nests, bird-of-paradise display trees, forest pools, large fig trees (Ficus spp.) and vines of the family Aristolochiaceae. ♦ Sites that support populations of IUCN Threatened or rare and localized plant species.
EM025	Terrestrial biodiversity	Minimize damage to habitat surrounding planned footprints by safely felling trees into planned footprints or into less environmentally sensitive natural spaces between standing trees.
EM026	Terrestrial biodiversity	Avoid burning cleared vegetation, wherever practicable.
EM027	Terrestrial biodiversity	Project personnel, workers, contractors or third-party operators, while engaged in Project activities, will be prohibited: ♦ To light and use fire except for specific work requirements controlled under the 'Hot Works' permit procedure and in designated smoking areas. ♦ To hunt, fish, collect or disturb forest or wildlife resources. ♦ To possess hunting or fishing equipment, including firearms, bow and arrows, spears, rubber guns, slingshots and other hunting tools. ♦ To keep pets or to purchase, acquire or possess any wildlife or wildlife products.

Table 20.1 – Mitigation and Management Measures/Commitments (cont'd)

No.	Discipline	Mitigation Measure/Commitment
Environmental Mitigation and Management Measures (cont'd)		
EM028	Terrestrial biodiversity, Freshwater and estuarine biodiversity; marine biodiversity; cultural heritage	All Project personnel, workers, contractors and 3rd party operators will be educated during inductions and safety training about: ♦ Fire risks, including the heightened risk during extreme drought years and smoking. ♦ Wildlife values. ♦ Weed, pathogen and animal pest hygiene and control measures. ♦ Identification of cultural heritage, cultural heritage awareness, measures for avoiding impacts and the Chance Finds Procedure.
EM029	Terrestrial biodiversity; air quality	Actively or passively rehabilitating bare sites as soon as possible to promote a stable self-sustaining landscape, e.g.: ♦ Allow forest edges to naturally regenerate or create appropriate conditions to facilitate natural regeneration, e.g. rip the substrate, replace topsoil, apply mulch. ♦ Rehabilitate Pandanus habitats, e.g. recreate mounds, reinstate the intertidal surface between Pandanus mounds. ♦ Rip compact surfaces across the slope, as appropriate, to facilitate revegetation and minimize erosion. ♦ Spread stockpiled topsoil, organic matter and cleared vegetation over the rehabilitation area to promote natural regeneration. ♦ Use native vegetation to revegetate sites when active rehabilitation measures are required.
EM030	Terrestrial biodiversity; hydrology	Dispose of excess spoil material from Project earthworks in designated spoil disposal sites
EM031	Terrestrial biodiversity	Use a suitably-trained fauna handler to relocate fauna, where practicable, before vegetation clearing.
EM032	Terrestrial biodiversity	When a significant impact remains on IUCN Threatened species or rare and localized plant species, translocation and propagation shall be considered when ecologically feasible.
EM033	Terrestrial biodiversity	Develop traffic and transport management controls that include: ♦ Posting speed limits on Project roads via posted speed limit signs. ♦ Requiring vehicles to keep to posted speed limits. ♦ Keeping vehicles and mobile machinery to marked trafficable areas and work sites.
EM034	Terrestrial biodiversity	Install ramps, e.g., unexcavated or backfilled earth plugs, in the pipeline trench at regular intervals and at other high-risk locations to permit fauna to exit.
EM035	Terrestrial biodiversity	Visually inspect open trenches and excavations in the morning and evening and use a suitably-trained fauna handler to remove trapped wildlife, where practicable.
EM036	Landform and soils; terrestrial biodiversity	Where possible, separate and stockpile cleared topsoil (with the inherent seed bank and any coarse woody debris) to use for future rehabilitation.

Table 20.1 – Mitigation and Management Measures/Commitments (cont'd)

No.	Discipline	Mitigation Measure/Commitment
Environmental Mitigation and Management Measures (cont'd)		
EM037	Freshwater and estuarine biodiversity; marine physical and sediment processes; marine biodiversity	Where required, implement adaptive management to minimize dredging impacts on sensitive habitats and species.
EM038	Marine biodiversity	Where required, implement adaptive management to minimize the Project's impacts on lobster migration.
EM039	Underwater noise	Provide for a 'soft start' for impact hammer piling activities to allow nearby transitory and resident fauna the opportunity to move out of the noise exclusion zone before sound levels reach maximum levels.
EM040	Underwater noise	If noise-sensitive aquatic species are sighted during the piling activities, initiate shut down procedures and stop the operations until the animal is observed to leave the noise exclusion zone or a set period has passed.
EM041	Air quality	Implement dust control, where required.
EM042	Air quality	Use low sulfur fuel, as far as practicable.
EM043	Air quality	Waste incineration shall: ♦ Use appropriately designed incinerators commensurate with proposed inventory. ♦ Be considered for waste that will effectively combust. ♦ Be operated within the required specification and by competent personnel.
EM044	GHG	Implement standard practices to minimize fuel consumption, e.g., reduce speeds and idling times, maintain good road conditions, reduce site gradients, optimize vehicle tire pressure and maintain vehicles.
EM045	GHG	Implement fugitive emissions measurement controls.
EM046	Noise	Limit construction work, where practicable, to daytime hours.
EM047	Landscape and visual amenity	Avoid directly lighting areas at night and minimize fixed night lighting for safe operations, e.g., direct lighting away from the Purari Airstrip House, and the surrounding forest.
EM048	Landscape and visual amenity	Where practicable, retain a vegetation buffer to screen infrastructure and facilities.

Table 20.1 – Mitigation and Management Measures/Commitments (cont'd)

No.	Discipline	Mitigation Measure/Commitment
Social Mitigation and Management Measures		
SM001	Economic displacement and livelihoods	Development of Project Land Access and Livelihood Development Plans (LALDP) consistent with the goals, objectives, principles and processes described in the Land Access and Resettlement Framework (LARF) and continuously drawing on lessons learned from the land access and resettlement activities. The LALDP will adequately cater for the respective interests of the Project Affected Persons (PAPs) in accordance with criteria for eligibility and the PAPs' choice of type of compensation (e.g. cash or in-kind). The LALDP will: ♦ Describe processes for appropriate disclosure of information, consultation and the informed participation of Project-affected persons with the aim of obtaining their free, prior and informed consent. ♦ Provide a compensation framework with compensation for loss of assets at replacement cost. ♦ Design livelihood programs which aim to improve or at least restores the livelihoods and standards of living of displaced persons which choose to remain in the Project area of influence; and ♦ Include special provisions for identified vulnerable individuals or groups. ♦ physical displacement of primary residents is required; include provisions to improve living conditions among displaced persons which have chosen in-kind compensation through provision of replacement housing. ♦ Provide a monitoring framework for the implementation of LALDP.
SM002	Economic displacement and livelihoods	The Project will, in consultation with local communities, government and civil society, design and deliver a diversified livelihood program that provides eligible Project-affected people which choose to remain in the Project area of influence with opportunities for improving their existing livelihoods and that contributes to the diversification of skills with the aim of triggering income generating activities. Livelihood programs will consider how Project-affected persons can be involved in Project employment opportunities (direct and indirect) and how skills learned on the Project can be applied to other sectors in the local area.
SM003	Economic development and employment	Establish a set of local employment and procurement policies that: ♦ Ban employment applications 'at the gate'. ♦ Includes measures to protect the workforce, in particular to identify and avoid child labor and forced labor. ♦ Gives priority to Project-affected persons and members of Project-affected communities (and in particular women) for local employment opportunities. ♦ Maximizes the employment and training of national citizens including persons from Project-affected communities. ♦ Includes measures for gender-fair hiring and workplace policies.
SM004	Economic development and employment	Institutional capacity building: Provide support to capacity building programs aiming to enhance national and local government capacity to foster diversified economic growth and their capacity to deliver local public services.
SM005	Economic development and employment	Community owned company capacity building: Provide support to governance and capacity building programs to improve business development and planning.

Table 20.1 – Mitigation and Management Measures/Commitments (cont'd)

No.	Discipline	Mitigation Measure/Commitment
Social Mitigation and Management Measures (cont'd)		
SM006	Economic development and employment	The Project will maximize the procurement of Goods and Services from local companies including community owned companies. Major contractors will be required to demonstrate measures and staff organization they will implement to maximize national content. The Project will support eligible small-scale enterprises through capacity building programs and advisory/mentoring services aiming, e.g. to improve business plans, to strengthen management capabilities and to facilitate access to information on Project employment and business opportunities. At a local level, business development officers will be appointed to identify and assist eligible small and very small-scale businesses in the Project area.
SM007	Economic development and employment	Develop initiatives to enhance education and training of youths from the PAOI, e.g.: ♦ A scholarship program to provide opportunities for eligible students from the Project-affected communities to pursue their studies. ♦ Internships and/or training opportunities with the Project or its contractors specifically focusing on transferable, nationally recognized trade skill development.
SM008	Economic development and employment	Undertake a feasibility assessment in consultation with local stakeholders on delivering capacity and resilience building programs for Project-affected communities and clan/village leaders, e.g., on financial literacy training and conflict resolution training.
SM009	Economic development and employment	Investigate options to work with local partners to support the development of sustainable ward development plans in the PRL-15 area and along the export pipeline route.
SM010	Economic development and employment	Partner with development organizations to deliver an education and awareness program (or include such awareness in other community development programs) to enhance the understanding of women's rights, e.g., their right to work, their right to education, more equitable labor activities, and to tackle gender-based violence.
SM011	Education and workforce training	In areas at high risk of Project-induced in-migration in the PAOI, undertake a feasibility assessment in consultation with relevant stakeholders on initiatives to improve education infrastructure and capability, and to strengthen education outcomes. While having a focus on elementary and primary schools in the PAOI, secondary and vocational schools in the province might also be considered.
SM012	Community health and safety	In areas at high risk of Project-induced in-migration in the PAOI, undertake a feasibility assessment in consultation with relevant stakeholders on initiatives to improve health services and infrastructure, and to strengthen health outcomes.
SM013	Community health and safety	Partner with relevant organizations to develop a Health and Wellness Awareness Program for the Project workforce and Project-affected communities, particularly in high-risk, in-migration areas. Topics may include preventing and managing communicable and noncommunicable diseases, women's health, nutrition, hygiene and sanitation, and transport safety.
SM014	Community health and safety	In areas of high risk of Project-induced in-migration in the PAOI, undertake a feasibility assessment in consultation with relevant stakeholders on initiatives aimed at improving water, waste, sanitation and hygiene services (WASH).

Table 20.1 – Mitigation and Management Measures/Commitments (cont'd)

No.	Discipline	Mitigation Measure/Commitment
Social Mitigation and Management Measures (cont'd)		
SM015	Community health and safety	Develop a tuberculosis (TB) prevention and control program for the Project workforce, including measures to screen and confirm the medical status of TB prior to employment or assignment in the Project area. Project workers diagnosed with active TB will be demobilized to their point of hire, they will be advised to seek treatment and the government will be notified to follow-up with their immediate family members as part of the national TB program. After treatment, a medical evaluation and fitness to work certificate will be required to resume work.
SM016	Community health and safety	In consultation with relevant stakeholders, develop a community emergency preparedness and response policy and procedure that clearly define roles of stakeholders in the event of Project-related emergencies or accidents affecting the community.
SM017	Community health and safety	Provide healthy and culturally appropriate food choices at workforce accommodation.
SM018	Community health and safety	Restrict community access to Project sites.
SM019	Governance and leadership	Enhance compliance with business ethics: ♦ The Project and its contractors will require that all direct and contracted workers undertake anti-bribery, corruption, ethics and compliance training. ♦ The Project will establish an employee whistleblowing system, thereby providing a confidential mechanism to report, e.g. any cases of bribery and corruption, or labor rights infringements in the workforce.
SM020	Governance and leadership	Develop and implement targeted engagement activities with women in the Project-affected communities to help build their knowledge of the Project so that their views and rights are considered throughout its ongoing development.
SM021	Governance and leadership	The Project will work with traditional leaders and ward councilors to encourage community volunteers to participate in the Project's social monitoring and evaluation.
SM022	Conflict, law and order	In areas at high risk of Project-induced in-migration in the PAOI, undertake a feasibility assessment in consultation with relevant stakeholders on initiatives to encourage regulation and monitoring of in-migration.
SM023	Conflict, law and order	The Project will establish governance arrangements for the implementation and monitoring of community investment and development programs.
SM024	Conflict, law and order	Support sustainable initiatives to strengthen village law and order organizations (e.g., village courts, local police and churches).
SM025	Conflict, law and order	The Project will ensure private security personnel are screened and trained on the Voluntary Principles on Security and Human Rights.
SM026	Transport and access	Maintain designated crossing locations during construction of the onshore export pipeline and shore crossing to enable community access.

Table 20.1 – Mitigation and Management Measures/Commitments (cont'd)

No.	Discipline	Mitigation Measure/Commitment
Social Mitigation and Management Measures (cont'd)		
SM027	Transport and access	Engage with communities potentially affected by barging operations about the barge movements and define a community development program recognizing the inconvenience that waterway communities may experience.
SM028	In-migration	Engage with communities and local-level governments to discourage the development of informal settlements along Project access routes and near Project facilities.
SM029	In-migration	Establish Project recruitment centers away from PRL-15 and construction areas to prevent in-migration.
SM030	In-migration	Demobilize all Project workers to their point of hire after their shift/employment is completed.
Cultural Heritage Mitigation and Management Measures		
CHM001	Tangible cultural heritage	Develop and implement archaeological clearance procedures related to all early works and construction activities. This will include: ♦ Establishment of a buffer area around identified sensitive sites near the planned Project facilities, prior to early works and construction activities, to avoid accidental or inadvertent impacts. ♦ Management of potential direct impact to any known site where impact is unavoidable, in consultation with local affected communities. ♦ A chance finds procedure for managing the discovery of ancestral remains, burial sites, and human remains. ♦ Other measures, e.g., on site-specific recording, marking, erosion prevention, relocation, clearance distances and monitoring. ♦ Provisions for notification of relevant parties in case of chance finds, and the notification of relevant parties in case of direct impacts to any known site.
CHM002	Tangible cultural heritage	Develop and enforce the Project Material Culture Policy, which prohibits Project workforce from obtaining items of material culture from local communities through purchase or by way of a gratuity.
CHM003	Tangible cultural heritage	Maintain traditional access to significant cultural places through consultation with relevant communities.
CHM004	Tangible cultural heritage	Appoint a Project cultural heritage officer during the construction phase to oversee the implementation of the chance finds procedure, to conduct training as appropriate and to act as key contact for Project workers and contractors on all matters related to cultural heritage.
CHM005	Intangible cultural heritage	Develop intangible cultural heritage workshops in collaboration with relevant Project-affected communities, with guidance and oversight provided by cultural heritage specialists.

Table 20.1 – Mitigation and Management Measures/Commitments (cont'd)

No.	Discipline	Mitigation Measure/Commitment
Stakeholder Engagement Mitigation and Management Measures		
SEM001	Stakeholder engagement	Through its stakeholder engagement programs and activities, the Project is undertaking a process of free, prior and informed consent (FPIC) with the Project-affected persons in the Project area in accordance with the International Finance Corporation (IFC) Performance Standard (PS) 7. For example: ♦ The Project will engage an independent organization to provide legal support to Project-affected persons regarding land access, so that they are fully informed of their rights and obligations, and that they enter into agreements willingly and without duress. ♦ The Project will document a mutually accepted process between the Project and Project-affected persons, and evidence of agreement between the parties as the outcome of negotiations.
SEM002	Stakeholder engagement	The Project will prepare an updated stakeholder engagement plan for the Project's construction, operations and decommissioning phases, according to TOTAL's general specifications and IFC PS1 and PS7. The updated stakeholder engagement plan will include the following key requirements: ♦ Regular engagement with Project-affected communities on Project impacts, action plans and grievance mechanism. ♦ Notification as early as possible to affected communities in advance of Project works, which describes the activities and how long they are expected to take. Particular focus is to be given to communities affected by Project-induced in-migration. ♦ A mechanism for enquiries and feedback. ♦ Ongoing grievance and issues management.
SEM003	Stakeholder engagement	As part of the Land Access and Resettlement Framework (LARF): ♦ Provide a framework for stakeholder engagement on land access and livelihoods including public consultation, disclosure and grievance resolution. ♦ Provide preliminary information to stakeholders (e.g., government, civil society) about the standards and procedures for the LARF.
SEM004	Stakeholder engagement	Once the Project begins construction, an independent consultant will be engaged to monitor stakeholder engagement and other activities.
Ecosystem Services Mitigation and Management Measures		
ESM001	Ecosystem services	Assess the efficacy of efficient biomass stove programs in coastal Papua New Guinea and, if warranted, support extension services to promote their use in the PAOI in Orokolo Bay.