

Executive Summary

This Biodiversity Strategy is an Esso Highlands Limited document, prepared with the participation of Coffey Environments Pty Ltd.

This Biodiversity Strategy outlines how the Papua New Guinea (PNG) Liquefied Natural Gas (LNG) Project (the Project) has and will continue to manage terrestrial biodiversity in its Upstream Project Area. The Project involves production of natural gas and associated liquids from new and existing wells in the Southern Highlands and Western provinces of PNG. The liquids will be separated and transported via the existing crude oil export pipeline to the Kumul Marine Terminal in the Gulf of Papua for export, while the dry gas will be transported in a buried pipe from the highlands to the Gulf of Papua, then undersea to an LNG Plant near Port Moresby where it will be liquefied and shipped to customers in Asia. The Project is operated by Esso Highlands Limited, an affiliate of the Exxon Mobil Corporation, on behalf of itself and co-venturers. It will be developed in six phases over a period of 16 years, with first LNG deliveries scheduled for 2014.

The Project is primarily located in the Kikori River basin alongside the existing Oil Search oil production operation at Kutubu and gas production operation at Hides. Approximately one-third of the new onshore pipelines in the Upstream Project Area will be co-located within existing pipeline corridors. The Upstream Project Area is known for high biodiversity values and is the site of the Kikori Integrated Conservation and Development Project (KICDP, now called the Kikori River Program), a World Wide Fund For Nature¹ (WWF) conservation initiative supported initially by Chevron Asiatic Ltd and now by Oil Search Limited.

This Biodiversity Strategy draws extensively on the PNG LNG Project Environmental Impact Statement (EIS) and its Environmental and Social Management Plan (ESMP). These in turn relied on biodiversity impact and management analyses of field data collected by WWF in its KICDP operations and new surveys carried out by Esso Highlands Limited from 2005 to 2009. This Biodiversity Strategy is designed to align with PNG legislation, International Finance Corporation (IFC) Performance Standard 6 and ExxonMobil policy.

The preparation of this Biodiversity Strategy followed a process of first identifying high biodiversity values in the Upstream Project Area and then using the impact analysis in the EIS to identify the major potential risks to, or impacts on, these values. This then formed the basis for developing goals and objectives for the strategy, which then followed the generally accepted hierarchy of avoidance, mitigation and offsetting of residual impacts. Finally a Biodiversity Monitoring Plan is designed to gauge the success of the strategy.

Based on the surveys conducted over the past 15 years, biodiversity values are defined for the Upstream Project Area as a whole. These are: i) extensive intact forest, (ii) high floristic diversity, (iii) high faunal diversity, (iv) endemic species, (v) unique assemblages of species, (vi) species of conservation concern and (vii) biodiversity of importance to local communities for resource use and cultural and spiritual purposes.

The goal of this Biodiversity Strategy is to retain the biodiversity values of the Upstream Project Area on a regional scale for the long term. In order to achieve this goal, the following objectives have been defined: (i) to maintain the ecological intactness of the Upstream Project Area as a whole; (ii) to conserve the priority ecosystems; (iii) to protect focal habitats; and, (iv) to account for residual impacts. In order to achieve these objectives, avoidance, mitigation and monitoring of biodiversity values will take place at three levels: (i) the large scale, which is the entire Upstream Project Area; (ii) the medium scale, which is represented by particularly valuable areas called 'priority ecosystems'; and, (iii) the small local-scale which are sensitive habitats referred to as 'focal habitats'.

¹ WWF is known as World Wildlife Fund in North America.

Avoidance of impacts on values was carried out in the design phase of the Project and involved a consideration of several high-level routes both within and beyond the Kikori River basin and six alternative pipeline alignments within the Upstream Project Area. These routing analyses involved a 4-level approach: level 1 was to follow existing infrastructure corridors wherever possible; level 2 was managing safety, social and environmental constraints; level 3 was reducing interference with existing petroleum infrastructure and level 4 was cataloguing constraints for later micro-routing in preconstruction surveys. The priority ecosystems received particular design consideration and are discussed in detail. Avoidance of focal habitats is being achieved by preconstruction surveys for all proposed worksites.

Site-specific mitigation measures are contained in the ESMP, which includes 30 individual management plans. Relevant mitigation measures to the implementation of this Biodiversity Strategy are as follows: Ecological Management Plan; Weed, Plant Pathogen and Pest Management Plan; Induced Access Management Plan, Erosion and Sediment Control Management Plan; Reinstatement Management Plan; and Water Management Plan. In addition, the introduction and spread of alien species and diseases and enhanced access are managed under a project-wide Quarantine Plan, which is designed to reduce the probability of alien species entering into the country.

A Biodiversity Offset Delivery Plan will be developed following this Biodiversity Strategy. The plan requires consultation with stakeholders before particular projects or management systems are finalized. As consultation with stakeholders is yet to be undertaken, a final offset plan cannot be described at this point in the Biodiversity Strategy. Instead, this document presents the criteria that offset projects are required to meet, which need to be related to the identified values and residual impacts, and canvasses the management options for the Biodiversity Offset Delivery Plan. Biodiversity offsets undertaken by the Project will be tailored to PNG conditions where landholders are the dominant factor in conservation management.

Lastly, Esso Highlands limited is developing a Biodiversity Monitoring Plan to determine if the objectives of this Biodiversity Strategy have been met. It is complementary to the ESMP and will determine, in the longer term, whether the objectives of the Biodiversity Strategy have been met. While ESMP monitoring is construction-related, the Biodiversity Monitoring Plan will mostly be carried out during operations. Monitoring is aimed at the biodiversity values at the three scales. For each value at each scale, a set of targets is defined, each with an end-point. It is impractical to develop an individual monitoring system for each of the many high biodiversity values in the Upstream Project Area. Instead, a suite of five Programmed Monitoring Activities (PMAs) was conceived, each designed to gather information for indicators for many targets, so that a minimal number of data-gathering activities can inform the maximum number of targets. One of the PMAs involves remote sensing, three involve regular collection of field data and one involves regular compilation of data from elsewhere.



