



End of Jetty - construction nearly complete



HGCP under construction



Nabors 702 Rig at Wellpad B

REPORT OF THE:

INDEPENDENT ENVIRONMENTAL & SOCIAL CONSULTANT

ENVIRONMENTAL & SOCIAL COMPLIANCE MONITORING

PAPUA NEW GUINEA LNG PROJECT

Site Visit: October 2012

Prepared for

Export-Import Bank of the United States

Export Finance and Insurance Corporation

Japan Bank for International Cooperation

Società Italiana di Assicurazione dei Crediti all'Esportazione

Export-Import Bank of China

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ACRONYMS

API	American Petroleum Institute
BD	Business Development
BOD	Biological Oxygen Demand
Borealis	The Project's Information Management Platform
BSA	Benefits Sharing Agreement
CBI	Chicago Bridge and Iron
CBIC	Chicago Bridge and Iron & Clough JV (EPC4)
CCJV	Clough Curtain Brothers JV (C1)
CEA	Cumulative Effects Analysis
CHMP	Cultural Heritage Management Plan
CI	Conservation International
CIC	Contractor Interface and Compliance
CIC	Community Issues Committee (at EPC5B)
CIP	Contractor Implementation Plan
CJ JV	Chiyoda JGC JV (EPC3)
CLS	Core Labor Standards or "Enabling Rights"
COD	Chemical Oxygen Demand
CP	Cathodic Protection
CPF	Central Processing Facility (Kutubu – OSL)
CPUE	Catch per Unit Effort
CRP	Communal Resource Plan
CSS	Community Support Strategy
CSSAP	Community Support Strategy Action Plan
CTA	Common Terms Agreement
CTF	Construction Training Facility
DEC	Department of Environment and Conservation
DLIR	Department of Labor and Industrial Relations
DLPP	Department of Land and Physical Planning
DPE	Department of Petroleum and Energy
EHL	Esso Highlands Limited
EIS	Environmental Impact Statement
ELC	Environmental Law Centre
EMDC	ExxonMobil Development Company
EMP	Environmental Management Plan
EMPC	ExxonMobil Production Company
EPC	Engineering – Procurement - Construction
EPT	Ephemeroptera (mayfly), Plecoptera (stonefly), and Trichoptera (caddisfly)
ESIA	Environmental and Social Impact Assessment
ESMP	Environment and Social Management Plan
ESMS	Environmental and Social Management System
FOC	Fiber Optic Cable
GFE	Gobe Field Engineering
CIC	Community Issues Committee
GoPNG	Government of PNG
HGCP	Hides Gas Conditioning Plant
HH	Highlands Highway
HRM	Human Resource Management
HWMA	Hides Waste Management Area
IBBM	Institute of Banking and Business Management
ICT	Information and Communication Technology
IESC	Independent Environmental and Social Consultant
IFC	International Finance Corporation

iHDSS	Integrated Health and Demographic Surveillance System
ILG	Incorporated Land Groups
ILO	International Labor Organization
ILO 1998 Declaration	ILO Declaration on Fundamental Principles and Rights at Work (1998)
ILS	International Labor Standards
IMR	Papua New Guinea Institute of Medical Research
iPi Catering	integrity...Proactive...innovative Catering
IR	Industrial Relations
IPIECA	International Petroleum Industry Environmental Conservation Association
IWSF	Interim Waste Storage Facility
KP	Kilometer Point
KPI	Key Performance Indicator
LBBSA	License-Based Benefit Sharing Agreement
LBSA	License Area Benefits Sharing Agreement
L&CA	Land and Community Affairs
MCH	Maternal and Child Health
MCJV	McConnell Dowell CC Group JV (EPC5B)
MOC	Management of Change
MOF	Marine Offloading Facility
MOH	Medical & Occupational Health
MoU	Memorandum of Understanding
MSDS	Material Safety Data Sheet
MTPA	Million Tons per Annum
MWMA	Mobile Waste Management Areas
NAQIA	National Agriculture Quarantine and Inspection Authority
NCD	National Capital District
NCDC	National Capital District Commission
NGO	Non-Governmental Organization
NLB	Northern Logistics Base
OCN	Other Country National
OGP	International Association of Oil and Gas Producers
OIMS	Operations Integrity Management System
OSL	Oil Search Limited
Para.	Paragraph
PCS	Pre-Construction Survey
PMA	Program Monitoring Activity
PNG LNG	Papua New Guinea Liquefied Natural Gas Project
PNG TUC	Papua New Guinea Trade Union Congress
POEA	Philippines Overseas Employment Agency
PoO	Point of Origin
PIG	Project Infrastructure Grant
PS	Performance Standard
PVT	Personal Viability Training
Q	Quarter
QMP	Quarantine Management Program
RAP	Resettlement Action Plan
RoW	Right-of-Way
RPF	Resettlement Policy Framework
RPNGC	Royal Papua New Guinea Constabulary
SELCA	Socio-Economic, Land & Community Affairs
SMP	Social Management Plan
SSH&E	Safety, Security, Health and Environmental

STI	Sexually Transmitted Infections
TOR	Terms of Reference
TSHD	Trailing Suction Hopper Dredger
TSS	Total Suspended Solids
UBSA	Umbrella Benefits Sharing Agreement
UNEP-WCMC	United Nations Environmental Program – World Conservation Monitoring Centre
VG	Valuer General
WAA	Waste Accumulation Area
WAP	Workplace Assistance Program
WMA	Wildlife Management Area
WPAR	Well Pad Access Road
WWF	World Wildlife Fund
WWTP	Wastewater Treatment Plant
YTD	Year to Date

EXECUTIVE SUMMARY AND CONCLUSIONS

This report represents the eighth post-financial close field visit to Papua New Guinea (PNG) made by D'Appolonia S.p.A. of Genoa, Italy serving in the role of the Independent Environmental and Social Consultant (IESC) for the Papua New Guinea Liquefied Natural Gas (PNG LNG) Project with Esso Highlands Limited (EHL) as the Operator (a subsidiary of ExxonMobil Corporation) on behalf of Export Credit Agencies (ECAs) and commercial banks providing Project financing (Lenders). The purpose of this visit has been to monitor conformance with Project environmental and social commitments made during actual Project development. This visit was conducted from October 15 – 25, 2012 in PNG.

The commitments made by the Project for environmental and social management are defined in three documents. The Environmental and Social Management Plan (ESMP) is the main document defining EHL's environmental and social commitments. An additional document termed the Lender Environmental and Social Requirements (LESR) was prepared to supplement the ESMP and provides a single point of reference to all information and documents that do not form part of the ESMP, but are required to demonstrate compliance with Lender Group requirements. At the time of Financial Close in February 2010, it was not practical for EHL to fulfill all of the Lender requirements to finalize aspects of environmental and social management. Therefore, a third document termed Environmental and Social Milestones (Milestones Schedule) was prepared as Appendix H3 to the Common Terms Agreement (CTA) to reflect twenty additional time-bound commitments. These three documents together define the roadmap to achieve Lender compliance as defined in the International Finance Corporation (IFC) Performance Standards (PS) and Equator Principles and are the benchmarks against which the IESC audits the Project.

EHL has begun the process of commercializing the undeveloped petroleum resources in the Hides, Angore and Juha fields and the associated gas resources in the currently operating oil fields of Kutubu, Agogo, Gobe and Moran in the Southern Highlands and Western provinces of PNG. The gas will be conditioned for transportation by pipeline to an LNG facility twenty kilometers northwest of Port Moresby on the coast of the Gulf of Papua. There, the gas will be liquefied and the resulting LNG product (approximately 6.6 million tons per annum) loaded onto ocean going tankers and shipped to gas markets overseas. At the time of this visit, all of the main EPC contractors were working in the field, although EPC1 and EPC2 are close to completing their work and have largely demobilized.

The Project is now past the halfway point of the construction phase. For the most part, all of the systems are in place for the effective management of social, health & safety, environmental and labor issues. Accordingly, this report has not attempted to provide the level of detail as presented in previous reports and has focused mainly on the issues to be resolved associated with the transition to operations.

Environmental and Social Management System (ESMS) – Transition to Operations

The PNG LNG Project is somewhat unique from other projects in that the current plan is to turn over the part of the onshore pipeline (Kutubu to Omati) to EHL Operations before the onshore pipeline from the HGCP to Omati is completely constructed (turnover currently planned for Q2 2013). This will allow for gas available from OSL to be provided to the LNG facility for the purpose of commissioning the gas turbine units, required for the generation of power necessary to complete construction and commissioning of the LNG facility. Accordingly, plans and procedures need to be in place for this transitional phase prior to full turnover to Operations. We believe EHL recognizes this situation and is in the process of developing a Pipeline Right of Way Management Plan to define the transitional environmental, social and physical requirements until the Operations ESMP is fully developed. EHL is currently planning to have a draft version of the Operations ESMP for IESC review available by the end Q2 2013 and have it finalized by Q3 2013.

Environmental Management – Waste and Wastewater

With the beginning of landfilling at the Hides Waste Management Area (HWMA), the Project has now entered the arena of “best” practice. Waste metrics from all EPCs are now reported to senior management on a monthly basis (quantities both landfilled and store, recycling options, etc.) to allow for identification of trends and improved management. There are effectively no deficiencies to report regarding waste management.

Wastewater treatment still requires attention. Although the Project has undertaken a major cross-contractor initiative to correct deficiencies with respect to WWTPs, only EPC3 continues to achieve effluent standards on a nearly routine basis. Many of the EPCs have experienced common problems: failure of mechanical

components, often by clogging of intakes; improper testing; issues with startup of new facilities or facilities that have been transported; and qualifications of operators. The overall process to improve WWTPs continues to be a work in progress.

Erosion and Sediment Control

A dedicated effort to minimize erosion is evident across the Project. The overall situation has improved since March 2012 and we were not able to identify any glaring deficiencies. In particular, evidence of significant improvements in the control of erosion was encountered at the Komo Airfield, the location of the most serious problems in March 2012. This is a subject that will require continuous attention, as there is always room for improvement.

Pollution Prevention – Breakout of Foam Used in Drilling

A unique aspect of the PNG LNG Project is the loss of foam used to drill through the cavernous Darai Limestone, which extends from the surface to as deep as about two kilometers along Hides Ridge. In preparation for the possibility of a breakout of foam at the start of drilling at Well Pad B, baseline water quality data were obtained from nearby streams and a comprehensive stakeholder engagement program was undertaken to inform and educate local communities as to the possibility that foam might unexpectedly appear at the ground surface. Foam breakouts did occur in August at locations between about three and four kilometers from Well Pad B. Chemical measurements confirm the foam is not hazardous and the foam itself did not prove to be an issue with the local communities. The overall situation was well managed.

Ecological Management and Biodiversity

Avoidance of impacts on focal habitats continues, and impact mitigation is occurring through implementation of the Ecological Management Plan. A new Biodiversity Advisor has joined the Environment team. Footprint management is being actively monitored, as temporary and permanent footprint dimensions are becoming more final. On the ground, conservation action has not yet occurred at Lake Kutubu and the Project is now considering how best it can achieve enhancement of the existing protected area via their Offset Delivery Plan (ODP). The ODP and Framework for Offset documents have been drafted and will be reviewed by the IESC separately from this field visit report. The suite of Program Monitoring Activities continues to evolve, and a detailed project-wide Monitoring Plan will be finalized Q1 2013.

Recommendations focus on: the importance of giving conservation efforts in the Lake Kutubu protected area sufficient priority; footprint reduction opportunities; areas for focus in the Project's approach to biodiversity offsets; identifying effective ecological monitoring indicators; the importance of integration with the Operations ESMS; and defining levels of non-conformance to adequately demonstrate the Projects performance in meeting the requirements of PS-6.

Induced Access

Operations continue to determine their needs for permanent access on a case-by-case basis and these are reviewed by the IESC each visit. The closure of shoofly access roads between public roads and the pipeline RoW was observed, critical to restricting access to areas opened up by the Project.

Recommendations focus on: continuing the case-by-case need for permanent access approach; the ability of the Project to demonstrate long-term effectiveness of measures intended to mitigate indirect impacts (such as fire, pests, weeds/disease and hunting) through targeted monitoring indicators and integration into the Pipeline RoW Management Plan and Operations ESMS; and assessing induced access scenarios related to decisions potentially outside of the Projects control.

Reinstatement

Observed reinstatement actions are being implemented effectively, and pipeline RoW natural re-vegetation is generally progressing well despite challenges such as unseasonably heavy rains during September. On the Hides Ridge, spoil dump reinstatement plans are being progressed and natural growth reinstatement being monitored when dumps are deemed closed. Mangrove restoration is being attempted at the pipeline landfall at the LNG Plant, and specialist advice sought to improve planted growth survivability.

Recommendations focus on: the required completion of reinstatement at Komo by contractor prior to handover to EHL; and further exploration of efforts for the successful restoration of mangroves at the pipeline landfall at LNG Plant.

Quarantine and Invasive Species Management

There has been closer liaison and collaboration between senior EHL and NAQIA managers, allowing each to better understand the other's requirements and priorities. All Contractors are now conforming to quarantine-related reporting requirements. There has been a YTD increase in NAQIA inspections when comparing 2011 to 2012 consignments. There has been a significant increase in fumigations required on EPC5A consignments over the same period, and a reduction for C1, EPC2 and EPC4.

The IESC can report a high level of weed management across the Project, benefitting from targeted awareness exercises and an increased frequency of visits by specialists from the external consultant Biotropica. One particular Priority 1 weed, *Ludwigia leptocarpa*, is proving a challenge along the pipeline RoW and roads used by Project vehicles, but eradication efforts are being increased. In addition to the washdown stations now operational at the Hides Ridge clean-line, two additional wash-down stations will be implemented around Benaria Ridge.

Recommendations focus on: encouraging further senior level engagement between EHL and NAQIA; and encouraging further improvements in Contractors performance where NAQIA inspections result in high levels of fumigations.

Freshwater and Marine Ecology

Monitoring results for the ecology of Caution Bay were received by the IESC after the October site visit that indicate some coral reef monitoring points in Caution Bay were impacted by pipeline construction. These impacts are consistent with the EIS predictions in that they appear localized. The other element of the EIS prediction was that the impacts would be temporary. Further monitoring will be required to validate this prediction.

Omati River and Caution Bay Fisheries Studies

The Q1 Omati River fisheries report has been completed; the Q2 draft report is being reviewed; data entry for Q3 is in process; and the field work for Q4 is being conducted in October. Fisheries monitoring in Caution Bay continues and the Q1 and Q2 reports have been received by the IESC, and data entry for Q3 is in process; and field work for Q4 is being conducted in October. So far the 2012 fisheries data have not been presented such that it is comparable to the 2011 surveys, which were more comprehensive. Nevertheless, some key findings have further characterized the fisheries and EHL expects to finalize their baseline surveys for Caution Bay and the Omati Delta with a standardized Catch per Unit Effort (CPUE) by the end of Q4 2012. The project is commended for committing to monitor fisheries through 2014, and maintaining well-trained village assistants. Several fisheries projects and participation incentives have been identified. Recommendations focus on standardizing catch/effort by time fished, fishing gear, fishing ground/target species, to quantitatively assess the effects of the Project.

Procurement and Supply

Since March, the IBBM Business Center has developed additional training modules on labor and other social and environment aspects of running a business; the program serves to build capacity among the Project's local supplier base to meet international requirements. The Center is now providing training on Human Resource Management, Employee Relations/Industrial Relations, and ISO standards including for example Occupational Safety and Health, Quality Management, food safety, auditing etc. Some 14,000 entrepreneurs have been assisted by the Center.

An issue with respect to procurement and supply has been extending Project stewardship to organizations and facilities primarily dedicated to serving the Project. During this visit the good management of the Tagari Borrow Pit operated by Cisco-Holloman for obtaining high-quality aggregate for the Komo airfield shows that the process is working well. Also during this visit, a Lanco camp (Komo Tukuba Development Corporation Camp) was visited and found to be well-managed. Third-party stewardship is now a process that is fully rolled out.

Land Access and Resettlement

Two years into construction, the L&CA team has finally coalesced into an effective unit that is delivering in its stated mission of securing and facilitating ongoing land access and is maintaining the Project's social license to operate. Its program to recruit high-caliber national staff and mentor them for senior roles in the Operations organization is progressing well.

The RAP documentation strategy agreed with the IESC at the August 2012 working meeting has been effectively implemented. Twenty-two (22) RAPs or CRPs have now been reviewed and approved by the IESC. For Stage 1 of the Project, probably only one more RAP will be required.

Resettlement processes have evolved and changed significantly during the past three years. These changes have not been reflected in the RPF. As the RPF will be in force for the life of Project loans, it is timely to consider implementing a Management of Change process for the RPF to reflect current Project practice. This should occur before the Resettlement team is demobilized.

All committed house construction has now been completed, with the exception of one landowner who has been unable to decide on the location where he wants his house built.

The Resettlement team will commence making compensation top-up payments to achieve full replacement value (IFC PS 5 requirement) during the first half of 2013. As there are now well over 6,000 extant compensation agreements, this is a not insignificant logistical undertaking. A schedule for this activity should be prepared for IESC monitoring purposes.

Livelihood Restoration

The July 2012 RAP Monitoring and Evaluation report presented some positive findings regarding resettled families perceptions about their food security and nutrition in the Project Upstream area. These indicated that 44% of families considered that their food security and nutrition had improved, 29% considered it had stayed the same and 27% that it had deteriorated. Wages employment and increased opportunities for informal trading were seen as contributory factors in addition to Project livelihood restoration assistance.

The fisheries livelihood programs for Omati and Caution Bay are progressing steadily. There have been some minor setbacks with localized demands for payment to attend training. The IESC was pleased by the linkages that have been established with national programs and institutions (e.g. University of the PNG, National Fisheries Authority) and closer cooperation with provincial governments.

Community Impacts Management

The IESC had two principal 'community impacts' observations arising from the October 2012 visit. These related to the following issues:

- safety and amenity of resettler families who were unfortunate enough to relocate along what is to become the access road to the Spiecapag Camp 6; and
- ongoing water management and exit strategy.

Further discussion can be found in Section 5.6.2.

Community Security

Project construction is now moving into some of the more challenging areas from a security perspective. The pipeline route from Homa-Paua northwards is characterized by a history of land disputes and tribal conflict. The Angore area, in particular, has experienced frequent tribal fighting since the mid-1990s claiming more than 50 lives. The Project has worked hard to involve the DPE, Hela Province Police Command and local leaders in developing a strategy prior to commencing land access negotiations. Project engagements with communities have also helped clarify key issues that need to be addressed to facilitate settlement of the lands dispute, promote peace and good order and enable resettlement and construction to proceed.

Community Support Strategy

The Community Development Support Program is continuing to progress steadily and is starting to make some in-roads in the Hides and Komo areas. The early introduction of Community Development Support activities as part of land access negotiations in Angore and Benaria appears to have contributed to local goodwill and willingness to engage with EHL. The Community Support team was focusing on the following:

- Ensuring that the roll-over of Community Development Support activities to the Operations/Production phase is effectively managed, including provision of training to Operations management on Community Development Support functions;
- 5-year forward planning and budget setting (in accordance with ExxonMobil internal planning processes); and,

- Developing exit strategies and replacement activities for current Community Development Support activities.

The next milestone for the Community Support team is the third-party, mid-term review of its community development support program.

Stakeholder Engagement and Consultation

IESC discussions with communities neighboring major facilities highlighted a need for more attention to be given to 'outside of the fence' community preparation for workforce demobilization. As noted in the March 2012 report, the Stakeholder Engagement team has an important role to play in making communities aware of the timeframes for demobilization as well as the anticipated impacts on families and communities. Reference should be made to the IFC Good Practice Note on Managing Retrenchment on the kinds of support that can be offered.

Grievance Management

The grievance management system is working satisfactorily. The number of grievances received in Q3 2012 (n=109) was slightly below the quarterly average for the previous year (121 complaints/quarter). A concerted effort had been made to close out the backlog of grievances. The Project was meeting or exceeding its internal target to close 75% of complaints received within 30 days. Efforts to publicize complaint avenues are continuing.

Labor and Worker Conditions

Project wide Issues

Since our March 2012 field visit EHL has made a final transition towards a mature Industrial Relations Strategy. EHL is now sufficiently equipped to proactively identify and consistently manage the many labor and industrial relations issues (labor unrest, strikes, work stoppages, etc.) that are bound to regularly manifest themselves in a Project of this size. In general, labor related incidents are decreasing, partly due to local communities and their leadership coming to grips with the Project and what it has to offer in terms of employment and income generation, as well as workers adopting more and more to a workplace identity.

Initially the IR Strategy was rolled out across the Project in September 2011, while allowing EPCs to adopt the strategy as appropriate given local circumstances and contract conditions. Up until now EHL's Contractor Interface and Compliance team has carried out three IR Strategy Reviews at the EPC Contractor level (September 2011, February and August 2012), analyzing performance per EPC and IR strategy enablers. These reviews show that implementation of the EHL IR strategy has improved and that Contractor performance against the strategy in percentages rose from around 50% and below in September 2011 to the high 80s and 90s in August 2012. The main outstanding issues at the time were preparations for demobilization and worker's councils. During the October visit IESC reviewed the methodology followed by EHL, and determined it to be solid and valid.

In February 2012 EHL convened an internal, multi-stakeholder demobilization workshop and consequently by the end of April issued a Project-wide demobilization strategy that incorporates Project best practices which was then rolled out to the various EPC Contractors. With this Project-wide strategy as guidance EPC Contractors are now developing strategies of their own, a process that is in varying stages of implementation. EHL aims to provide for a well-organized and consistent demobilization process of the national workforce to minimize demobilization related impacts and work stoppages, e.g. through demobilizing OCNs and non-local PNG nationals first and to align Project and GoPNG community support activities with demobilization events. The demobilization strategy covers the national workforce only; OCNs will be demobilized as per contract; equipment and assets demobilization is coordinated by Procurement; EPCs will close out and handover to Production; and handover of Project infrastructure (airport, bridges, training centers etc.) will be managed separately.

During the March 2012 field visit IESC recommended that EHL review Contractor compliance with PNG labor legislation, mainly in terms of working hours, including breaks, days of rest, rotation schedules, etc., and consequently to review the exemption status of its Contractors. EHL itself had labor law exemptions in place for two minor issues since March 2012, but could not provide information on the exemption status of its Contractors. Prior to the October field visit EHL had carried out an update on Project compliance with PNG labor law and had asked its EPC Contractors and Subcontractors to review their own policies, procedures and practices based on a directive from EHL Procurement and based on GoPNG requirements.

EHL provided IESC with a full status overview of its EPC Contractors and Subcontractors, specifying whether a submission had been made to DLIR (or already compliant and therefore N/A), whether an exemption had been granted (or already compliant and therefore N/A), and whether the exemption had been officially announced (or already compliant and therefore N/A).

Contractors have been requested to (more coherently) implement ExxonMobil's corporate Operations Integrity Management System (OIMS), as per contractual obligation, which includes improved risk assessment of issues such as fatigue management, safety, and security. EHL announced that it would continue to assist its Contractors with their submissions and continue to work with DLIR on the exemptions.

Workers' and Women's Grievances mechanism are now in place at all EPC Contractors, although quality and effectiveness still vary. Finally, Personal Viability Training is being rolled out across the Project.

Employment Opportunities through Lancos and PNG Workforce Development

Total Project workforce now numbers close to 19,600. Due to specific aspects in this phase of construction expats have temporarily outnumbered PNG nationals since May this year (10,595). The ratio of PNG nationals in the Project Total Workforce is now 46% (9,003) of which Lancos have provided 70% to the Project. Demobilization at various EPC Contractors has commenced, primarily laying-off the unskilled, local workers, whereas the need for more specialist, skilled workers - mostly OCNs, has increased due to completion of several technical components at EPC3 and EPC4 and because the Project is mobilizing for Operations. On the other hand, the Project is still hiring more PNG nationals every day (5% increase in Q3), so the trend merely demonstrates a slowdown in the acceleration of recruiting PNG nationals, rather than an absolute decrease.

Recruitment Policies and Procedures

Previous IESC reports have identified potential recruitment issues associated with OCNs. In the March report the IESC noted that EHL had been following up on these observations and had carried out several measures to verify that OCN recruitment practices are consistent with Project policy. EHL had found that the response from the EPC Contractors was mostly positive and provided no reasonable basis for concerns on forced or child labor.

EPC Contractors select their recruitment agencies according to their legitimacy as stipulated in the procurement contracts with the Project and on the basis that they are legally licensed to conduct business in their country of origin. As it is difficult to distinguish actual versus advertised business practices, IESC had recommended for EHL to request its Contractors to review recruitment practices of their suppliers of OCN workers informally on the basis of a 'civil society reputation check' through, for example, NGOs, trade unions or worker's rights experts to verify any rumors of illegitimate activities by these agencies.

In October, EHL informed the IESC that this recommendation had certainly been noted and taken on board and may be applied in future Projects, but that it considers this recommendation not opportune for this moment in time. Contractors, such as MCJV (EPC5B) gave a similar message and explained that any change in the screening of recruitment agencies could only be undertaken at MCJV's corporate level. Spiecapag (EPC5A) on the other hand, informed the IESC that it had actually already considered cancelling their Contract with one India-based agency before IESC made the observations that recruitment agencies needed to be carefully evaluated. Getting their doubts confirmed through the IESC observations made it easier for them to take a final decision. In conclusion, the current state of affairs at the PNG LNG Project is that most OCNs are now directly hired by the EPC Contractors.

Worker-Management Relationship

At the time of the October visit the workers' council at the LNG Plant site, which represents not only CJJV workers, but also those of its sub-contractors had been in existence for more than one year. During the March visit IESC had observed strained relations between CJJV and the then workers' council, mainly due to discontent over procedures for running workers' council meetings, contractor response to workers' absenteeism, continued ban on cell phones etc. IESC also noted that workers' council members lack mature negotiating skills and were not receiving capacity building, such as for example offered for the 'safety champions' training program. In October IESC found that the election frequency of the workers' council remained unchanged at the request of workers themselves and are still held every three months. Most do not want to commit for a longer period than three months, whereas the motivated and effective members get re-elected for a second term anyway, thus guaranteeing some level of continuity. Relations

between the newly elected workers' council and CJJV have much improved. The workers' council itself now delivers the chair, secretary and agenda for meetings and CJJV considers the current workers' council to be much more proactive and constructive.

At the very end of the March field visit violence had broken out among CCC workers at the LNG Plant site. During the October visit the IESC was informed that the initial response to this event had been to fire all those involved, but that due to constructive mediation from the side of LABA after the strike, a more fair resolution was chosen. Under the guidance of EHL, LABA, CCC and CJJV made an effort to identify the real instigators of the incident and consequently only 20 - instead of all 140 - were dismissed. The Council of Porebada had expressed its gratitude to LABA for intervening, as most of the workers involved were from this community.

During the October field visit EPC4 reported once more that no workplace related incidents have occurred since their firm, yet fair handling of the September 2011 incident (see IESC November 2011 report). EPC4's high performance is in part due to CBIC implementing best practice in terms of: supervisor training, a workers' Code of Conduct, grievance and disciplinary procedures, and advanced cultural awareness training. Whereas CBIC in March still reported that any remaining problems were due to community issues and not workplace related, in October CBIC reported that it had received a letter from major clan leaders, apologizing for all the unrest over the past two years and that most violence was inexcusable. Clan leaders requested to meet with CBIC and expressed their wish to set up a Community Issues Committee, similar to the one in Komo.

During the March visit EPC5A did not have a workers' council or any alternative mechanism in place, or any plans in that direction. In October EPC5A said that they were now considering the possibility of having a workers' council set up at Angore due to longer term Project engagement - other than the pipeline exclusively. EPC5A already did have a general workers' grievance mechanism in place, which however was much tailored to the context of PNG workers and not to that of OCNs. It also failed to log and report on OCN grievances for EHL monitoring purposes and thus OCN grievances remained invisible. Until the IESC October visit the OCN grievance mechanism in place at the pipeline was informal and not documented. In practice it consisted of OCNs communicating their grievances through an OCN in a supervisory or management position of similar or neighboring nationality, who would then take it up with either Spiecapag's Construction Manager or Project Manager. During the October visit Spiecapag's Project Manager indicated that these informal procedures would be formalized, put down in writing and that these would be communicated to OCNs.

At EPC5B, OCN meetings are no longer taking place on a bi-weekly basis, because of a change to working night shifts due to completion pressure. This is a change that started May this year. Night shifts are mostly carried out by experienced OCNs. Meeting frequency went down as a consequence of these night shifts and OCN meetings are now mostly held at off days, e.g. when work is impossible due to weather conditions, etc. The EPC5B Camp Committee consisting of EHL, MCJV, iPi, Lanco staff and workers' representatives (one male and one female) had the latter replaced by other worker's representatives due to conflict and distrust among workers, which has improved workers' trust considerably.

The IESC also met with the Komo 'Community Issues Committee' and with a selection of local PVT trainees. CIC members told of two major grievances, one of which was related to MCJV's recruitment transparency. They claim that a considerable number of the PNG nationals that are directly hired by MCJV (mostly PNG nationals that are not of local origin) could have been found and hired through the local Lancos as well, had MCJV been more transparent about their job openings. The other complaint revolved around inadequate communication between CIC and MCJV management - a breakdown in communication may be starting according to CIC members. All grievances and issues go through the MCJV Community Affairs officer, whom they believe to be too junior to get these effectively addressed by MCJV management. CIC and MCJV management representatives are supposed to meet bi-weekly, but these meetings never seem to materialize, according to the CIC.

Conditions of Work

As mentioned above under 'Project Wide Issues', the IESC had recommended that EHL verify Project compliance with PNG labor law with a focus on working hours, R&R, etc. EHL has now put a management system in place for monitoring exemption needs and exemption status of its EPC Contractors.

During previous visits the IESC had identified most indicators for possible non-compliance with working-hours-related legislation along the pipeline. Spiecapag (EPC5A), however, has been found compliant

according to a PNG legal firm. Nevertheless, Spiecapag has introduced some changes in its R&R for OCNs: Columbians moved from a 20/2 to an 18/3-rotation schedule and South East Asians from a 20/2 to a 20/3-rotation schedule. Workers' requests for working more than 20 weeks are categorically denied.

At the LNG Plant site, CJJV (EPC3) has addressed an issue that has been contentious for some time now and has led to several strikes, the request for an appraisal system. CJJV now offers its workers a bi-annual appraisal system; two consecutive positive appraisals lead to an increase in wages and/or promotion. CJJV has asked the same of its subcontractors.

Demobilization

Demobilization is recognized as a critical worker issue that has significant consequences for local communities. Following the issuance of a Project-wide demobilization strategy in April, EPC Contractors are in the process of developing their own strategies guided by its principles.

At the LNG Plant site, CJJV (EPC3) expects to have a first draft of its demobilization strategy ready by the end October. Meanwhile, CJJV is instructing its sub-contractors on delivering references for demobilized workers and EHL and LABA are rolling out a 'Bright Future' training course (based on PVT) for all Plant site workers to enhance post-Project self-reliance. The LNG Plant site umbrella Lanco, LABA had reviewed the demobilization strategy of the Hides umbrella Lanco, HGDC.

In the Hides, area C1-EPC4 coordination on demobilization and mobilization appears to be working well. Demobilization is taking place peacefully and transfers are carried out seamlessly, without any loss of income and benefits for workers. EPC4 is taking over complete teams - fuel farm, fencing, etc. The Hides umbrella Lanco HGDC has its demobilization strategy in place and offers demobilized workers not only pay packages, but also reinstatement packages, training etc. Some problems are evident, however, as HGDC related that the process of working out the MoU details with EPC5A has been difficult and that communication is problematic. Although demobilization will eventually take place, HGDC is already looking into other Project-related opportunities such as developing a bottled potable water line "Mountain Ridge" with the objective of supplying the Project with drinking water.

At the Komo Airstrip, MCJV (EPC5B) is preparing for the transfer of its skilled workers to EPC4 and Drilling. Due to various delays, the demobilization peak has shifted from August-October 2012 to February-April 2013.

Along the pipeline, Spiecapag (EPC5A) is engaged in ongoing demobilization and mobilization, but has now committed to formalizing a demobilization strategy.

Gender

During the October field visit IESC was further updated on Project initiatives and developments in the field of gender, i.e. women-in-employment and women-in-impacted communities. The EPC Contractors now have women's grievance mechanisms in place. On the work floor EHL seeks to engage its PNG LNG workforce, through for example the 'Women in Energy Network' - a network launched in 2011 that promotes women leadership in the energy sector. EHL is also rolling out the Personal Viability Training (PVT) program across the Project, which typically engages more women than men and increases women's self-reliance and autonomy.

EHL is currently engaged with five existing Key Women's Empowerment Community Investments. With these programs EHL aims to develop champion initiatives that help women fulfill their potential and drive economic and social change in their communities. All activities are in alignment with ExxonMobil's 'Women Economic Opportunity Initiative' - a Corporate Signature Initiative launched in 2005, but also with PNG National Action Plans and with the UN Millennium Goals.

Camp Management

Camp construction is progressing to schedule and is in its final stages, both at the LNG Plant site as well as in the Hides area. There is however a continued need for EHL to rigidly implement, monitor and evaluate all risk mitigation measures proposed in the risk assessment reports for personal-space-reduction at EPC3 and in the Upstream Area. EHL Medical and Occupational Health teams do undertake regular camp inspections at the various EPC Contractors, during which they monitor a range of topics - kitchen hygiene, camp clinics, etc.

During the March field visit the IESC had observed that EPC4 and C1 were either experiencing or expecting problems with available space/person. At the time EHL had issued a non-conformance on minimum space/person requirements for C1, as monitoring revealed that containers different than expected had been delivered (6-to-a-room). EPC4 was also foreseeing problems with living space in the camps. All space/person issues have been satisfactorily resolved through a rearranging of room layouts and only allowing for 5-to-a-room.

During the October visit the IESC paid specific attention to camp management at EPC3 and paid a visit to a Lanco owned and managed camp at the Moro airstrip. The camp is outside the fence and accommodates some MCJV workers and PNG nationals carrying out skilled labor. The basic observation of this camp is that it meets or exceeds Project standards for worker accommodation.

Health and Safety

The Project has a well-developed program to manage both occupational health and safety of workers, as well as a community health and safety program. The Health Group focuses on worker and community health issues, whereas the Safety Group focuses primarily on occupational safety of workers.

Worker Health: Occupational health is a “best” practice program. Occupational health progress is reflected by several indicators: clinical diagnosis improvements for malaria, tuberculosis and dengue implemented across the Project; significant reduction in malaria cases reported over the past 12 months – no case in the Highlands; and no food or water borne illness outbreaks in 2012 and 2011 in Project camps. Internal compliance audits show improvement in industrial hygiene compliance from 72% in 2011 to 92% in Q3 2012.

The March 2012 field visit identified an increase in fatigue and psychological health problems, manifesting mainly as stress due to long-term isolation and an ongoing sense of the security threat in PNG, mainly in the Highlands. Medical staff had indicated that they expected this situation only to worsen as work pressure and stress increases as construction targets approach deadlines. EHL has since initiated new management directives for its Contractors on ‘Workplace Fatigue’ and ‘Managing the Psychological Impact of Critical Incidents in the Workplace’. Also, the EHL Workplace Assistance Program (WAP), a counseling and referral service, is now accessible for Contractors including access to phone counseling for PNG Nationals (weekly) and for expats (monthly).

Worker Safety is also a “best” practice program and worker safety continues to be a primary focus of EHL and the EPC Contractors. Safety statistics presented by EHL show a continuing decrease in the Total Recordable Incident Rate (TRIR). In March 2012 this rate was 0.46 for the entire Project and in October 2012 this rate was further reduced to 0.39. The Lost Time Incident Rate (LTIR) is 0.03, which is excellent compared to other major projects. The Project achieved over 25 million hours LTI free from March through close of August 2012, but in September there were two fatalities, representing a total of six fatalities since the start of the Project. These fatalities have occurred in spite of a comprehensive worker safety initiative focusing on awareness of situations where fatalities could occur. SSHES (Safety, Security, Health & Environment) training is at a high level and there are currently more than 500 Safety Champions.

Community Health: EHL presented findings and a report of the Integrated Health and Demographic Surveillance System (iHDSS) baseline survey covering the four villages in the vicinity of the LNG terminal (Boera, Porebada, LeaLea, Papa) with preliminary results for the Hides-Komo area. The issue is that EHL does not have access to this baseline data for social management purposes. EHL has started a dialogue with its iHDSS partner, Papua New Guinea Institute of Medical Research (IMR) with a view to EHL being able to undertake some rapid, early data analysis, ahead of IMR’s final presentation of findings. This effort needs to be continued. The need for the Project to have early access to the iHDSS data to enable it to meet its ESMS commitments remains critical.

Water management has been a community health issue for the past several site visits and relates to:

- Impacts of construction (e.g. blocked streams, dried springs, turbidity/sediment release into water courses);
- Indirect impacts such as those caused by in-migration and localized increases in population density (e.g. increased demand for water, increased pollution load including E. coli);
- Aspirational (e.g. wish to benefit from the improved supply and convenience of a water tank).

Although the Project has supplied local communities with fresh water via tanks, the IESC is not convinced that the Project is yet at the 'exit' point in terms of its obligations with respect to mitigating construction phase impacts on water. Our recommendations are that the Project undertakes a water demand and supply review in the Komo-Hides to identify any gaps in the Projects coverage; involve the Community Development Support team in the design of an exit strategy; and look at ways to facilitate local supply of water tanks by others, such as Lancos.

An issue identified as a Level I non-conformance from the August 2012 field visit was community noise from Project activities at the Komo Airfield. EHL has undertaken a comprehensive review of this issue consistent with IESC recommendations and found that noise levels are actually within acceptable limits. The main source of noise proved to be a generator and noise-suppressing containment has been constructed around this source.

Cultural Heritage Management

Cultural heritage continues to be an important component of the Project. Preconstruction surveys (PCSs) with identification of cultural finds are still ongoing for C1 and EPC5A and chance finds are still being made at various locations. 117 chance finds have been turned over to National Museum; another 151 are about to be turned over. A long-term issue identified in previous IESC reports has been the analysis of artifacts from salvage work in the HGCP area transported to Port Moresby in late April 2011. EHL has come to an agreement with Monash University to receive the Hides area artifacts for analysis; this is a significant breakthrough as the interpretation and reporting that will be undertaken by the university are keystones of cultural heritage management. The export permit was granted shortly after the field visit.

1 INTRODUCTION

D'Appolonia S.p.A. (D'Appolonia), located in Genoa, Italy, has been appointed as the post-financial close Independent Environmental and Social Consultant (IESC)¹ for the Papua New Guinea Liquefied Natural Gas Project (PNG LNG or the "Project") being developed by Esso Highlands Limited (EHL), the designated Operator and a subsidiary of ExxonMobil Corporation and also representing a consortium of co-venturers including Oil Search Limited (OSL), Santos Ltd, JX Nippon Oil & Gas Exploration Corporation and PNG State and landowners as represented by Mineral Resources Development Company (MRDC) and Petromin PNG Holdings Limited. D'Appolonia's role as the IESC is to support the Export Credit Agencies (ECAs) providing Project financing, including the Export-Import Bank of the United States (USEXIM); Japan Bank for International Cooperation (JBIC); Export Finance and Insurance Corporation (EFIC) of Australia; Servizi Assicurativi del Commercio Estero (SACE) from Italy; Export-Import Bank of China (CEXIM); and Nippon Export and Investment Insurance (NEXI), as well as a group of commercial banks, collectively referred to as the Lenders or Lender Group.

The overall role of D'Appolonia as the IESC within the PNG LNG Project is to assess and report to the Lender Group on the compliance with the environmental and social provisions contained within the Environmental and Social Management Plan (ESMP), the associated Lender Environmental and Social Requirements (LESR) document, and Schedule H3 Environmental and Social Milestones Schedule to the Common Terms Agreement (CTA) (herein referred to as "Milestones Schedule"). Specifically within the IESC scope of work, the following requirements for an audit visit are identified:

- Evaluate the Project's compliance with Environmental and Social Laws, the Environmental and Social Management Plan and Applicable Lender Environmental and Social Standards ("Environmental and Social Requirements") and evaluate the Project's proposed corrective action regarding any failure by the Project to comply with Environmental and Social Requirements in all material respects;
- Evaluate issues identified during previous monitoring visits relating to compliance with the Environmental and Social Requirements;
- Evaluate the Project's environmental and social reports, described in Section 12.2(b)(vi) of the CTA; and
- Evaluate compliance by the Project in all material respects with the Milestones Schedule.

The above Terms of Reference (TOR) requirements refer to an evaluation of Project "compliance", whereas the reporting requirements of the TOR state that the reporting will include a "list of non-conformance findings". Within this report the terms "compliance" and "conformance" are considered to be equivalent. In general, issues to be resolved are identified as non-conformances, but one of the requirements of the IESC is to identify any "material non-conformances" within the context of the CTA. The IESC believes that a "material non-conformance" within the context of the CTA would need to be a Lender decision, but for the purposes of this report a potential "material non-conformance" would be a Level III non-conformance or repeated Level II non-conformances as defined in the Section 2 Issues Table. It is emphasized that a Level III non-conformance is not necessarily equivalent to a "material non-conformance" and that extensive discussions among EHL, Lenders and the IESC would need to take place before any "material non-conformance" is identified.

IESC's review has included the environmental and social (E&S) and health and safety (H&S) management activities of EHL and the individual Engineering, Procurement and Construction (EPC) Contractors and infrastructure currently active in the field. Emphasis has been placed on evaluating conformance based on written information provided by EHL and observations made in the field including discussions with EHL and Contractor personnel. Most of the findings identified in this report have been based on field observations and interactions with the individuals actually responsible for the field implementation of the ESMP, as well as meetings with stakeholders.

¹ IESC Team members in the field: William J. Johnson (Earth Scientist/Cultural Heritage Specialist and acting Team Leader), Robert Barclay (Social Development Specialist), Amber Frugte (Labor Specialist), and Louise Johnson (Biodiversity and Natural Resource Management Specialist). IESC Team members not in the field: Giovanni De Franchi (Project Manager and Team Leader) and Mark Pedersen (Aquatic/Marine Specialist).

An activity that does not fall under the category of “monitoring” yet is within the context of the CTA is a requirement for the IESC to certify certain non-Project operations (section 14.2(m)(iii) of CTA). During this field visit D’Appolonia was asked to certify that the construction of a new wellpad for gas exploration on Hides Ridge within the footprint of the PNG LNG Project, but geologically beneath the PNG LNG gas horizon, is “not expected to prevent the Project from complying in all material respects with all applicable Environmental and Social Laws, the Environmental and Social Management Plan and Applicable Lender Environmental and Social Standards.” This additional activity does have the potential to impact the PNG LNG Project if the actions of the drillers cause local communities to retaliate against EHL and the act of drilling has the potential to impact the environment within the PNG LNG footprint. Nevertheless, none of these potential impacts relate to the ability of EHL to implement their ESMP for the PNG LNG Project. On that basis, D’Appolonia provided a letter of certification to EHL on November 5, 2012. Nevertheless, the IESC does consider that the construction of a wellpad to be more significant than the seismic exploration previously certified in a similar manner, as a wellpad is much more of a permanent footprint.

The IESC considers that exploration drilling on a wellpad constructed within the PNG LNG Project footprint to merit classification as an “associated facility” under Performance Standard 1, which states:

“Risks and impacts will be analyzed in the context of the project’s area of influence. This area of influence encompasses, as appropriate:

- i. The primary project site(s) and related facilities that the client (including its contractors) develops or controls, such as power transmission corridors, pipelines, canals, tunnels, relocation and access roads, borrow and disposal areas, construction camps;
- ii. Associated facilities that are not funded as part of the project (funding may be provided separately by the client or by third parties including the government), and whose viability and existence depend exclusively on the project and whose goods or services are essential for the successful operation of the project.
- iii. Areas potentially impacted by cumulative impacts from further planned development of the project, any existing project or condition, and other project-related developments that are realistically defined at the time the Social and Environmental Assessment is undertaken; and
- iv. Areas potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location. The area of influence does not include potential impacts that would occur without the project or independently of the project.”

The new wellpad is certainly within the “area of influence” of the Project as defined above. As any new gas will end up in the PNG LNG pipeline, the IESC considers that the new development would fall under the category of associated facility, for which stewardship from the Project is required that in turn would be subject to verification by the IESC. The IESC expects this to be a subject of future discussions.

1.1 CONSTRUCTION STATUS

The Project consists of three components:

- *LNG Plant and Marine Facilities Site* (plant and marine terminal facilities) at a location designated Portions 2487 and 2457 located approximately 20 km northwest of the capitol city of Port Moresby, PNG. A significant component of the marine facilities component is the jetty to be constructed as a trestle on pile foundations;
- *Upstream Offshore Pipeline (Marine Project Area)* extending 407 km that begins at the Omati River landfall and extends to the marine facilities located at the LNG Plant site;
- *Upstream Facilities and Onshore Pipeline* consisting of wells at the Juha, Hides, Angore, Agogo, and Southeast Hedinia fields, a new Hides Gas Conditioning Plant (HGCP), a new Juha Production Facility, expansion of the existing Agogo Production Facility, and expansion of the existing Kutubu and Gobe Production Facilities, which all tie into a main onshore pipeline 284 km from the Hides Plant to the Omati River landfall where it connects with the offshore pipeline.

The development of the above three components is well underway and all of the EPC Contractors are mobilized in the field. Their overall responsibilities and current construction status are as follows:

- *C1 – Upstream Infrastructure (Clough Curtain Brothers JV - CCJV)*: responsible for Kopi Shore Base; Southern Supply Route; Highlands Highway upgrades; HGCP access road and site preparation; Hides well pads and access roads; construction of the Hides Waste Management Area (HWMA); and associated work camps. Current activities relate to construction of the Wellpad Access Road and the wellpads themselves. The remainder of the HGCP site was handed over to EPC4 in Q3 2012 and the last remaining work at the Hides Waste Management Area is construction of the waste processing area expected to be completed by the end of Q1 2013. C1 has already started to demobilize;
- *EPC 1 – Telecommunications (TransTel Engineering)*: occupation primarily of sites already used by Oil Search for *communications towers*. This construction effort started Q1 2010 and at the time of the field visit the last communications tower at the HGCP site had been finished. Full completion of the EPC 1 work scope was expected for Q2 2012, but they have not demobilized and were reported to be working on a tower at Wellpad E;
- *EPC 2 – Offshore Pipeline (Saipem)*: This contract is for the 407 km of offshore pipeline that begins at the Omati River landfall and extends to the marine facilities located at the LNG Plant site, the construction of which is now complete. Saipem has for the most part demobilized, but at the time of the field visit was conducting pipeline dewatering and drying activities, as well as mangrove reinstatement at the LNG Plant site;
- *EPC3 – LNG Plant and Marine Terminal (Chiyoda JGC JV - CJJV)*: This joint-venture EPC contract between Chiyoda and JGC Corporation, both engineering and construction firms headquartered in Yokohama, Japan, is for construction of the 6.6 million tons per annum (MTPA) LNG plant, with two 3.3 million trains, including facilities for inlet processing, treating, liquefaction, storage, and the marine terminal. Construction continues to be ahead of schedule, reported to be 71.8% complete against a 66.9% planned completion at this stage. Jetty construction is nearly complete and expected to be 100% complete by the end of Q1 2013.
- *EPC4 – Upstream Facilities including Hides Gas Conditioning Plant (HGCP) and Well Pads (CBI Clough JV - CBIC)*: this joint venture of Chicago Bridge & Iron Company (CBI) from Amsterdam, Netherlands and Clough Limited from Perth, Australia is responsible for the design and construction of the production facility, the 960 Mcfd/day capacity HGCP, the HGCP Industrial Park, and the Rotator Housing Community. As noted above, C1 handover to EPC 4 is complete. Foundations are nearly done with the installation of 2,356 piles, including 124 piles for the foundations of a water disposal well to be used by Drilling. Civil works for the plant are about 50% complete: 10% of the structural steel has been installed; about 22% of the concrete has been poured and underground piping is about 20% installed;
- *EPC5A – Onshore Pipelines and Infrastructure (Spiecapag)*: Spie Capag SA of Colombes, France will develop onshore pipelines and infrastructure for the project. This effort includes the construction of a 32 – 34-inch gas pipeline for a distance of 292 km, 109 km of 8-inch condensate pipeline, and the Hides Spine and gas field flowlines and also including above ground facilities (e.g. mainline valve stations, meter stations, pig launcher/receiver stations, cathodic protection equipment), power and optic telecommunications cables. Infrastructure includes road upgrades, access road construction, bridge improvements, camps and associated facilities for waste management, vehicle washdowns, helipads, etc. Approximately 145 km of pipe has been hydrotested and dried. Tree felling has reached approximately KP 60. In terms of camps, the Kopi Shorebase Camp is still open. Along the pipeline ROW Camp 1 (KP 266) and Camp 2 (KP 226) are completely demobilized and the land reinstated; Camp 3 at Gobe (KP 191) is for the most part demobilized, but still open for work related to the Gobe Spur Line; and Camp 4 at Tamadigi (KP 145) is in the process of demobilizing. The main operational camp is the Moro Camp (KP 93) and site preparation has started at Camp 6 at Hegero (KP 64);
- *EPC5B – Komo Airfield (McConnell Dowell CC Group JV - MCJV)*: A joint venture of McConnell Dowell Corporation Limited (Victoria, Australia) and Consolidated Contractors Company (Athens, Greece) will construct the Komo airfield, which will be 10 kilometers southeast of the HGCP. The site is recognizably an airport, and major earthworks are now well advanced. Approximately one kilometer of the base course of pavement has been installed and a short distance of asphalt has been placed. Overall construction of the entire facility is approximately 55% complete. High quality aggregate is being obtained from Timalia Borrow Pit TB-1 and also from the Tagari Borrow Pit operated by Cisco-Holloman;

- *Drilling - Nabors Drilling International Limited:* The current workscope is to drill 10 high-rate gas wells (8-Hides; 2-Angore) with two produced water disposal wells. Rig 702 started drilling in July 2012 at Wellpad B with the completion of top hole air/foam drilling to the base of the surface limestone (~1650 m) with the running and cementing of 26” conductor casing and 18-5/8” surface casing at wells B1 and B2. Drilling had stopped due to a fatality that took place on September 30, but at the time of the field visit Rig 702 was ready to continue drilling with oil-based muds. The second rig (Rig 703) was in the process of being assembled at Wellpad C. The foundations for a water injection well near the HGCP had been completed at the time of the visit.
- *Associated Gas Development:* Oil Search-operated Associated Gas Project activities continue to progress. By the end of Q3 2012 earthworks and construction of foundations had started at Gobe and ongoing activity continued at multiple work fronts at Kutubu. Specifically at Kutubu, key achievements included the new TEG C unit commencing operations and the decommissioning and demolition of the old unit. Excavation of the new TEG D foundations commenced. Performance testing of the Commissioning Gas Unit, which represents a key piece of equipment required for the commissioning of the Project, is close to completion.

In terms of current workforce, as of the end of Q3 2012 EHL reports that about 9,000 PNG nationals are currently employed on the Project, representing about 46% of the total workforce now comprising about 19,600. Approximately 70% of the PNG national workers are sourced through Lancos. This total of PNG nationals is much above the original construction target of employing, approximately 3,500 PNG nationals out of a total workforce originally estimated at to peak at 12,000 (~30 percent). Women comprise approximately 5% of the workforce of which 90% are PNG nationals.

1.2 SOURCES OF INFORMATION

The main sources of information used to prepare this eighth IESC trip report are primarily those provided by EHL, but D'Appolonia also obtained information by means of interviews with local stakeholders including Lancos during the field visit in PNG as well as Project employees and contractor staff. The information provided by EHL has included presentations made to the IESC and additional documents consistent with the trip schedule provided in Appendix A.

1.3 REPORT ORGANIZATION

Subsequent sections of this report are organized as follows:

- Section 2.0 – Issues Table;
- Section 3.0 – Environmental and Social Management;
- Section 4.0 – Environment;
- Section 5.0 – Social;
- Section 6.0 – Labor and Human Resources;
- Section 7.0 – Health and Safety;
- Section 8.0 – Cultural Heritage.

The basic findings of the review are presented in the form of observations, comments and recommendations that are generally described according to topics within each section. The findings are summarized in the Issues Table provided in Section 2.0.

2 ISSUES TABLE

This Chapter tabulates a summary of the non-conformances raised in this report, consistent with our TOR as discussed in Section 1.0. The Table has been structured to provide a color-coding for strict non-conformances raised during each site visit, as well as IESC observations for situations that if left unattended could result in a non-conformance. Non-conformance is referenced with respect to Project commitments as included in the ESMP and associated Management Plans, the LESR, the Milestones Schedule, the Project Safety Management Plan, the Project Health Management Plan, the Project Regulatory Compliance Plan, and the Project Security Management Plan (collectively referred to as “Project documents” in the definitions below) and with respect to on-going compliance with Applicable Lender Environmental and Social Standards. As noted in Section 1.0 of this report, “Applicable Lender Environmental and Social Standards” means the environmental and social standards applied by the Loan Facility Lenders to the Project in the form attached to Schedule H-1 (Environmental and Social – Applicable Lender Environmental and Social Standards) of the CTA. The Project should note that compliance with the Applicable Lender Environmental and Social Standards is not limited to the pre-construction due diligence, but is an on-going process. The nomenclature of the color-coded categorizations are assigned based on non-conformance levels similar to the non-conformance levels defined in the ESMP, somewhat revised to reflect the point of view of the IESC and to address that certain non-conformances need to be framed in the context of the Applicable Lender Environmental and Social Standards. The following descriptions are provided:

- **High:** Level III critical non-conformance, typically including observed damage to or a reasonable expectation of impending damage or irreversible impact to an identified resource or community and/or a major breach to a commitment as defined in Project documents or the Applicable Lender Environmental and Social Standards. A Level III non-conformance can also be based on repeated Level II non-conformances or intentional disregard of specific prohibitions or Project standards. In some cases, Level III non-conformances or repeated Level III non-conformances may, but not necessarily, represent a material non-compliance with the CTA. This would be decided on a case-by-case basis;
- **Medium:** Level II non-conformance representing a situation that has not yet resulted in clearly identified damage or irreversible impact to a sensitive or important resource or community, but requires expeditious corrective action and site-specific attention to prevent such effects. A Level II non-conformance can also represent a significant breach of a commitment, or a risk of a significant breach if not expeditiously addressed, requiring corrective action as defined in Project documents or Applicable Lender Environmental and Social Standards. A Level II non-conformance can also be based on repeated Level I non-conformances;
- **Low:** Level I non-conformance not consistent with stated commitments as defined in Project documents, but not believed to represent an immediate threat or impact to an identified important resource or community. A Level I non-conformance can also represent a minor breach of a commitment requiring corrective action as defined in Applicable Lender Environmental and Social Standards;
- **IESC Observation:** A potential non-conformance situation that could eventually become inconsistent with stated commitments as defined in Project documents or the Applicable Lender Environmental and Social Standards.

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Environment and Social Management							
2 M4.2	Jul-Aug. '11	October '12	Central management responsibility for labor and industrial relations (IR) issues within the Project organization is insufficient to date. The Project could benefit from centralized and informed strategizing in terms of dealing with the multitude of labor and IR issues at a Project wide level - labor unrest, strikes, work stoppages etc.	IESC Observation	ESMP in general	Closed	This system is now in place
M8.1	October '12		Because a portion of the Project will become operational before the rest of the Project (handover of Kutubu to Omati section of the pipeline to Operations Q2 2013), plans and procedures need to be fully in place for this transitional period before the entire Project is operational. A Right of Way Management Plan under development is intended to cover the environmental and social requirements for RoW management for this transition period. EHL needs to verify that this plan fully covers all of the topics that will eventually be covered in the Operations ESMP and associated Management Plans.	IESC Observation	ESMP in general	Open	Because of this unique situation, we recommend that Transition be considered as a separate Project phase, different from Construction and Operations. We recommend that a gap analysis be conducted to determine if there are specific components of the Operations ESMP and associated Management Plans that also need to be in place. For example, the Emergency Response Plan outside of the ESMP needs to be developed and implemented in close coordination with local communities. This goes beyond community involvement as indicated in the current outline of the Right of Way Management Plan.
Environmental Issues – Waste and Wastewater Treatment							
M8.2	October '12		WWTPs at all of the EPC Contractors except EPC3 have shown persistent discharge compliance problems.	I	Water Management Plan	Open	IESC recognizes the significant efforts of the Project to face this challenging situation, but consider that it is an issue that has taken too long to resolve.
M6.1	March '12	October '12	'Outside the fence' waste prevention awareness needs improvement to avoid litter being discarded along the RoW and road-sides	IESC Observation	Performance Standard 6/ Waste Management Plan	Closed	Significant improvements were observed with respect to littering.
Environmental Issues – Noise							
M6.2	March '12	October '12	Noise levels recorded at the Pioneer and Main Camps for MCJV have persistently been recorded at levels higher than the daytime limit of 55 dBA.	I	Noise and Vibration Management Plan	Closed	After conducting a full review of the processes followed to measure noise using the services of an external consultant, the overall results are that the reported measurements were not done correctly and when they are done correctly there is no exceedance of the IFC standards.

² In order to better track project progress and accomplishments, the issues identified during each site visit are identified by a letter (M) and number (e.g. M1) that identifies the site visit (e.g.: M1 for the first visit, M2 for the second visit, etc.) followed by a digit that identifies the specific issue found (e.g. M2.4 refers to issue 4 found in visit 2).

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Environmental Issues – Erosion and Sediment Control							
M6.3	March '12	October '12	Although significant effort is being placed on erosion and sediment control at the Komo Airfield, significant improvements are needed. The freshwater ecological monitoring has found probable ecological impact downstream of the Komo Airfield, interpreted to most likely relate to increased turbidity or sedimentation, which is an indicator that the control systems are not effective.	IESC Observation	Erosion and Sediment Control Management Plan.	Closed	Erosion and sediment control always require constant attention. The situation at Komo is considered “closed” in the sense that erosion and sediment control measures have been implemented to the degree practical. The issue could be re-opened if the measures observed during this field visit are not properly maintained.
Environmental Issues – Biodiversity and Ecological Management							
M3.10	March '11		Reinstatement, erosion control and induced access control commitments along access roads in the ‘interim period’ after Spiecapag’s initial reinstatement efforts (during construction phase) and before operations, when EHL will assume full responsibility, are not defined.	IESC Observation	Performance Standard 6	Open	As construction progresses, responsibility for the management and stewardship of completed facilities and infrastructure is transferred, in some cases from one EPC Contractor to another, and in other cases from EPC Contractor to EHL. In general, a punch list system is utilized to manage this handover and acceptance process. IESC urges due attention be paid to the transition process and interim measures be taken where necessary to counter any transitional gaps that might potentially occur. Such measures should ensure that roles and responsibilities are clearly defined, and include monitoring to ensure effective mitigation is maintained during transition.

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M8.3	Oct '12		<p>As the pipeline RoW passes through the Lake Kutubu Wildlife Management Area, an internationally recognized Ramsar wetland area, the Project is required to “implement additional programs, as appropriate, to promote and enhance the conservation aims of the protected area” (PS-6, para.11).</p> <p>Milestone #16 was identified to highlight that additional work was required following Due Diligence to ensure the Project met PS6 with regard to their presence within the Lake Kutubu WMA.</p>	I	Performance Standard 6	Open	<p>Regarding the Milestone Schedule, the Project currently has the Completion Indicator “Operator finalizes design of programs in the Lake Kutubu Wildlife Management Area”. EHL now consider the conservation program at Lake Kutubu to be managed under delivery of the Offset Delivery Plan, The IESC concurs that the management of a Lake Kutubu conservation program falls within the remit of the offset delivery plan. In the interim, and to close out MS16, the Project needs to revert to the original milestone Completion Indicator “Operator has integrated programs in the Lake Kutubu Wildlife Management Area in the offset delivery plan”. Until the Indicator is reverted to its original, the Project is not in conformance with Milestone Schedule #16. Once the Completion Indicator is reverted, IESC can then re-consider completion of this Milestone.</p> <p>EHL continues to have dialogue with stakeholders at Lake Kutubu to help inform their conservation approach in the WMA. However, the draft Enhancement Program document, shared with the IESC (containing elements of proposed work to enhance conservation programs at Lake Kutubu), contains insufficient detail to identify the extent to which conservation aims will ultimately be promoted and enhanced. The IESC recognizes the importance of targeted feasibility studies and stakeholder engagement to ultimately develop the right conservation program at Lake Kutubu, but the IESC urges the Project to expedite the development and implementation of the enhancement program (and WMA management plan) within a tighter timeframe than that proposed in the draft Enhancement Program.</p> <p>The IESC seeks evidence that Lake Kutubu is being given sufficiently high priority status within the wider efforts being made to comply with PS6.</p> <p>(Report Reference Section’s 3.3 and 4.7.2.1)</p>

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M8.4	October '12		<p>Results of marine monitoring conducted in February – March 2012 were available in May 2012, but not provided to the IESC until February 2013. Accordingly, this observation is a modification from the situation reported based on information available in October 2012.</p> <p>Monitoring indicates some coral reef monitoring points in Caution Bay were impacted by pipeline construction.</p>	IESC Observation	Performance Standard 6	Open	<p>According to Appendix 28, The Environmental Monitoring Plan (EMP), Table 2, pre-construction marine water quality and ecology should be compared to construction and post-construction water quality and ecology. The EMP recognized that there could be some impact (up to 5% loss of habitat and resource value), but recovery was expected within 2-5 years. This situation is therefore an observation and not a non-conformance, as additional monitoring is required to verify conformance. It is expected that this verification will be made available by means of reporting with supporting quantitative data and representative photo evidence.</p>
Social Issues – Resettlement							
M6.5	March '12		<p>The RPF specifies that external, outcome monitoring will begin approximately six months following relocation and will be continued biannually for a sufficient period for the effectiveness of measures to be evaluated (RPF, Section 10.1.2). The IESC has not seen a report since August 2011.</p>	I	RPF, Section 10.1	Reduced to Level 1 (Aug '12)	<p>Status update in brackets:</p> <ul style="list-style-type: none"> - Additional M&E resource allocated so that breadth of monitoring can be expanded (achieved, October 2012) - M&E report coverage expanded to cover all active resettlement areas (preliminary findings presented October 2012; needs to be consolidated into a report).
Social Issues – Community Health and Security							
M6.6	March '12		<p>There has been a protracted delay in releasing the results of the Integrated Health and Demographic Surveillance System baseline socio-economic survey and baseline nutrition survey. It is now more than 9 months since the surveys were completed. The Project team could not provide any clear commitment as to when the results would be released. The iHDSS surveys were designed to provide a platform for both community health and broader social monitoring. A critical Project monitoring commitment has not been delivered.</p>	I	Community Health, Safety and Security MP	Reduced to Level 1 (October 2012) Open	<p>The follow corrective action had been completed:</p> <ul style="list-style-type: none"> - Complete iHDSS baseline report for LNG villages by September 2012 (completed October 2012). <p>Preliminary but incomplete findings were presented for:</p> <ul style="list-style-type: none"> - Complete baseline report for Hides Komo by November 2012; <p>The following corrective actions are required:</p> <ul style="list-style-type: none"> - Raise with IMR need for Project to have early access to iHDSS data as a management tool (not for public disclosure).

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M7.1	Aug. '12	October '12	The Project has recently started the "Hides-5 S&G Program" in the Project area, a survey studies program that comprises all preparatory works such as scouting, surveys, topographical mapping, preliminary geotechnical data acquisition and preliminary community affairs work, excluding well pad/road construction or drilling. The IESC has received a Certificate from the Project for this activity in connection with the CTA that certifies that the Hides-5 S&G Program is not expected to prevent the Project from complying in all material respects with all applicable Environmental and Social Laws, the Environmental and Social Management Plan and Applicable Lender Environmental and Social Standards.	IESC Observation	Various Project Health and Safety Plans Community Health, Safety and Security MP	Closed	Information has been provided and D'Appolonia has issued a Certificate
Social Issues – Procurement and Supply							
M6.7	March '12		The Project makes substantial efforts to offer technical support and capacity building to its supply chain. Although these efforts include stringent occupational safety and health protocols, the Project could benefit from improvements in terms of assessing, monitoring and reporting on the basic requirements of IFC Performance Standard 2 concerning supply chains.	IESC Observation	Procurement and Supply Management Plan Labor and Working Conditions Management Plan	Open	This observation replaces Observation M4.10 from the July-August 2011 field visit. Compliance with PS2 with respect to supply chains involves verifying and monitoring the occurrence of child or forced labor or lack thereof. A verification process for (new) PNG suppliers should be developed (see Section 5.9.2.1).
Labor and Human Resources - Labor and Worker Conditions							
M6.8	March '12	October '12	With respect to Project compliance with PNG labor law, especially in the field of working hours and R&R and the possible need for exemptions, legislative texts need further interpretation, but for now it appears that it is not certain that all Contractors are compliant with PNG labor law. EHL received its labor law exemptions on two minor issues in place since March 2012, but EHL has not carried out an update on the exemption status of its contractors.	IESC Observation	Labor and Workers Conditions Management Plan	Closed	EHL has now put a management system in place for monitoring exemption needs and exemption status of its EPC Contractors.

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M6.9	March '12	October '12	OCNs working at the PNG LNG Project are still experiencing differentiated working conditions in terms of for example recruitment practices of agencies in country of origin, working hours, R&R schedules etc. or access to an effective grievance mechanism.	IESC Observation	Labor and Workers Conditions Management Plan	Closed	EPC Contractors have reviewed recruitment practices of their suppliers of OCN workers. In terms of working hours and R&R schedules, the main issues were found at EPC5A – Spiecapag. Spiecapag has introduced some changes in its R&R for OCNs; Columbians moved from a 20/2 to an 18/3-rotation schedule and South East Asians from a 20/2 to a 20/3-rotation schedule. Workers' requests for working more than 20 weeks are categorically denied.
Labor and Human Resources – Camp Management							
M5.6	Nov '11		There is a continued and pressing need for EHL to rigidly implement, monitor and evaluate all risk mitigation measures proposed in the risk assessment reports for personal-space-reduction at EPC3 and in the Upstream Area. These risk assessment reports and the mitigation measures they contain have been instrumental in lifting the Level 1 Non Conformance during the IESC July 2011 review and are therefore critical to implement.	IESC Observation	Footnote ³	Closed	Space/person issues have been satisfactorily resolved through a rearranging of room layouts and only allowing for 5-to-a-room. During this visit a Lanco camp was visited and also found to be in good condition.
Labor and Human Resources – Gender							
6.11	March '12	October '12	The quality and effective implementation of women's grievance mechanisms varies greatly across the Project. The approach taken by EPC4 may well turn out to be an example of best practice and worth sharing with the other EPCs	IESC Observation	Labor and Workers Conditions Management Plan Camp Management Plan	Closed	The EPC Contractors all have satisfactory women's grievance mechanisms in place.

³ Risk assessment reports for personal-space-reduction at EPC3 and in the Upstream Area; Camp Management Plan; Labor and Workers Conditions Management Plan; Minimum Health Requirements for Project Execution; Health Inspection Guidelines

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
6.12	March '12		The other major issue is the impact of women's changed status to 'women-in-employment'. Across the Project, but especially in the Hides area women often suffer (violent) domestic implications for being employed by the Project. This is further worsened because 'women's-control-over-income' is culturally challenged. In the Huli cultural context women face incredible pressure to hand in their earnings due to (male) community demands. This facilitates men in accessing alcohol and weapons and resorting to more violence. All women expressed a desire to have access to bank accounts.	IESC Observation	Labor and Workers Conditions Management Plan + Camp Management Plan	Open	The Project is making progress addressing issues of gender inequality. Some of the multi stakeholder initiatives that EHL is engaged in address women's disadvantaged position in PNG, i.e. Key Women's Empowerment Community Investments. IESC continues to recommend that a dedicated Gender expert make a rapid assessment of the most pressing issues for women employed by the Project and design tailor-made solutions, especially for women in the Hides area, at Project level - including concise instructions for Contractors and Lancos. IESC also continues to recommend that the Project work through the Community Health Program's 'marriage and relations counseling' program in communities to have gender workplace issues addressed by developing a specific focus on violence issues related to women-in-employment.
Workers Health and Safety							
M4.17	Jul-Aug. '11	October '12	Safety impacts of excessive working hours/structural overtime, lack of adequate breaks and rotation schedules at the level of the Project's (sub) contractors are potential risks. This is especially the case for workers along the pipeline.	IESC Observation	Various Project Health and Safety Plans	Closed	See response to M6.9.
M4.18	Jul-Aug. '11 and March '12		A significant health issue is the obesity risk among PNG workers and all obesity-related long-term health risks, including diabetes and cardiovascular disease. An increase in obesity rates may be due to dietary and lifestyle changes, i.e. exposure of PNG workers to Western diet and the abundant availability of food in the camps, as well as a likely Melanesian genetic predisposition to store fat. Community Health Program staff do share this concern.	IESC Observation	Various Project Health and Safety Plans	Closed	An obesity awareness program has been initiated. New posters are being prepared on proper eating habits and making it the subject of tool box presentations. Food standards are now more focused on nutritional standards: low fat meats, eggs, low fat milk, fruits and vegetables, salad choices, multi-grain bread, and reduced fat, salt, and sugar. Portion control procedures are in place: limiting self-service opportunities; limiting one meat dish selection per visit to counter; use of pre-portioned food trays; and use of smaller plates.
Cultural Resource Management							
M6.13	March '12	October '12	The artifacts excavated from the Hides area prior to the start of major construction have not yet undergone rigorous scientific analysis.	IESC Observation	CRM Plan	Closed	EHL has reached an agreement with Monash University for the analysis of the artifacts from the Hides area

3 ENVIRONMENTAL AND SOCIAL MANAGEMENT

Environmental and social management for the PNG LNG Project is defined in three documents. The Environmental and Social Management Plan (ESMP) is the main document defining EHL's environmental and social commitments. An additional document termed the Lender Environmental and Social Requirements (LESR) was prepared to supplement the ESMP and provide a single point of reference to all information and documents that do not form part of the ESMP, but are required to demonstrate compliance with Lender Group requirements. At the time of Financial Close in March 2010, it was not practical for EHL to fulfill all of the Lender requirements to finalize aspects of environmental and social management. Therefore, the Milestones Schedule was prepared as Appendix H3 to the CTA to reflect twenty additional time-bound commitments. These three documents together define the roadmap to achieve Lender compliance as defined in the Applicable Lender Environmental and Social Standards in Schedule H1 of the CTA and are the benchmarks against which the IESC audits the Project.

The basic observation with respect to environmental and social management is that the Environmental and Social Management System (ESMS) is now fully in place across the Project.

- The ESMP is fully developed and publicly disclosed;
- Monitoring and evaluation programs are in place;
- An MOC process is developed and working;
- Associated facilities/activities policy has been developed and is being implemented;
- Requirements of Milestones Schedule from the beginning of the construction phase are now fulfilled, except for MS#14 and MS#15 which are due for completion during 2013 – see Section 3.3 for further details. Closure of Milestone 16, related to the Lake Kutubu conservation program, is currently under discussion and is anticipated shortly; and
- An organization is in place to implement the ESMP.

In accordance with the above observations, the discussions associated with environmental and social management are somewhat abbreviated when compared to previous reports.

3.1 ENVIRONMENT AND SOCIAL MANAGEMENT PLAN

3.1.1 Project Strategy

The base document comprising the ESMS framework for the PNG LNG Project is the ESMP. The ESMP was derived primarily from the findings of the Project EIS and its supporting studies as a means to mitigate environmental and social risks associated with its construction and outlines environmental and social management and mitigation actions and monitoring requirements. The ESMP is the umbrella document to define general performance procedures for social and environmental issues including legal requirements; Lender standards and other general requirements; verification, monitoring, assessment and audit requirements; reporting and notifications; non-conformity definitions and corrective actions; organization, roles and responsibilities; and training, awareness and competency. The ESMP also provides specific contractor and subcontractor social management and mitigation performance requirements, which are defined in appendices as a series of Management Plans that serve to define EHL's requirements for individual contractors to prepare their Implementation Plans as applicable to each contract scope of work subject to EHL approval.

The ESMP is currently applicable only to Phase I of the Project which is associated with construction and drilling. EHL plans to revise the ESMP at least three months prior to each subsequent development phase and consistent with the requirements of the Environmental Permit with the PNG Government. A separate Operations ESMP will be prepared at least six months prior to the commencement of production.

The ESMP is not a stand-alone document for defining the requirements of EHL's ESMS. Safety, health, regulatory compliance and security aspects pertaining to the Project are not addressed in the ESMP and are discussed elsewhere in the Project documentation, including the Project Safety Management Plan, the Project Health Management Plan, the Project Regulatory Compliance Plan, and the Project Security Management Plan. The ESMP also is supported by other documentation and procedures as defined in the LESR discussed in Section 3.2 of this report.

3.1.2 Observations

At the time of the March 2012 site visit, the last remaining component for the completion of the ESMP was the drilling ESMP. The drilling ESMP is now a final, approved document and serves as a bridging document to the EHL ESMP such that the drillers, as well as the other EPC Contractors, comply with common plans.

The Project is now at the stage when the Operations ESMP needs to be developed, as the Milestones Schedule 6 requires its completion at least six months prior to the introduction of process hydrocarbons. This is being undertaken by EHL Project organization and delivered to EHL Operations as part of a stewardship transfer process. EHL Operations (Building the Production Organization - BTPO) organization is in place and will participate in development, review and approval of the Operations ESMP. The schedule for the Operations ESMP is to have a draft version for IESC review available by the end of Q2 2013 and be complete by Q3 2013.

The PNG LNG Project is somewhat unique from other projects in that the current plan is to turn over the part of the onshore pipeline (Kutubu to Omati) to EHL Operations before it is completely constructed (turnover currently planned for Q2 2013). This will allow for gas available from OSL to be provided to the LNG facility for the purpose of commissioning the gas turbine units, required for the generation of power necessary to complete construction and commissioning of the LNG facility. Accordingly, plans and procedures need to be in place for this transitional phase prior to full turnover to Operations. We believe EHL recognizes this situation and is in the process of developing a Pipeline Right of Way Management Plan to define the transitional environmental, social and physical requirements until the Operations ESMP is fully developed. This Plan includes:

- A communication strategy to communities;
- Maintenance and monitoring RoW and associated assets; and
- Roles and responsibilities to maintain Social License to Operate.

One of the main differences between the Construction and Operations phases of a gas development project is emergency response, as there is obviously more hazard associated with a pipeline filled with pressurized gas when compared to an empty pipe. General requirements for emergency response are outlined in Performance Standard 3 of the 2006 Performance Standards (followed for defining the Construction phase ESMP) or in Performance Standard 1 following the 2012 Performance Standards. Performance Standard 4 (either old or new version) has some specific requirements for community/government involvement in the development of an Emergency Preparedness and Response Plan. Additional details are also provided in the IFC General EHS Guidelines (2007). As the topic of emergency response is outside of the requirements of the ESMP, EHL will need to make sure that site-specific emergency procedures are defined for the period when a portion of the pipeline is operational, but the Project has not reached the stage corresponding to the “introduction of process hydrocarbons.” EHL will also need to make a decision as to which version of the Performance Standards are going to be followed as applicable standards for development of the Operations ESMP and associated Management Plans.

3.1.3 Recommendations

1. Consider that the period when a portion of the pipeline is operational, but the Project has not reached the stage corresponding to the “introduction of process hydrocarbons” represents a specific project phase independent of both Construction and Operations.
2. Conduct a gap analysis to determine if there are specific components of the Operations ESMP and associated Management Plans that also need to be in place for the transition phase. For example, the Emergency Response Plan outside of the ESMP needs to be developed and implemented in close coordination with local communities. This goes beyond community involvement as indicated in the current outline of the Right of Way Management Plan.
3. Develop the Operations ESMP whereby the commitments to follow the Performance Standards (whichever version is adopted) are clearly defined for each plan, not just as an overarching statement.
4. Revisit the requirements of the LESR such that they can be incorporated into the Operations ESMP. The main topics are to add reference to the requirements of the Performance Standards in

other major plans (Emergency Response Plan, Health & Safety Plan, etc.), distinguish non-conformances from incidents, and include Lender MOC and reporting requirements.

3.2 LENDERS ENVIRONMENTAL AND SOCIAL REQUIREMENTS DOCUMENT

3.2.1 Project Strategy

The LESR document was prepared to supplement the ESMP to demonstrate compliance with Lender Group requirements. Documents prepared by EHL that do not form part of the ESMP, but which are nonetheless required to fully demonstrate conformance with Lender Group requirements are as follows:

- Biodiversity Strategy;
- Project Environmental Standards;
- Project Safety Plan;
- Project Health Plan;
- Regulatory Compliance Plan;
- Journey and Traffic Management Procedure.

Information not included in the ESMP but also required by the Lenders includes:

- Table of Contents for IESC Construction Monitoring Reports;
- Table of Contents for EHL Quarterly Construction Environmental and Social Report;
- Table of Contents for EHL Semi-annual Environmental and Social Reports (Operations);
- Table of Contents for EHL Annual Reports (Operations);
- Lender Group Management of Change;
- Process for evaluating Associated Facilities;
- Consolidated list of all documentation required to demonstrate conformance to Lender Group requirements.

The LESR document was prepared by EHL to supplement the ESMP for the above topics and provide a single point of reference to all information and documents that do not form part of the ESMP, but are required to demonstrate conformance with Lender Group requirements.

3.2.2 Observations

Specific aspects of the LESR where in previous reports the IESC has flagged the need for improvement relate to management of change; associated or related facilities and activities; public disclosure; and reporting of incidents to the Lenders. These topics are discussed in greater detail in the following sections.

3.2.2.1 Management of Change

The LESR has requirements for the Project to communicate changes to Lenders on the basis of significance. The IESC was provided a list of changes to the Project enacted since the March 2012 visit and none appear to have any significant environmental or social component and are not repeated here.

3.2.2.2 Associated or Related Facilities and Activities

Another requirement of the LESR is for the extension of EHL environmental and social stewardship to third-party facilities and activities where the Project is responsible for construction on a third-party site or the sharing of facilities with a third-party. The process is being rolled out in the field. During this field visit, a tour was made of the Tagari Borrow Pit operated by Cisco-Holloman. This borrow pit is now a critical supplier for high-quality aggregate destined for the Komo Airfield. EHL is working with Cisco-Holloman to develop this quarry consistent with the requirements of the ESMP. Evidence of this in the field was that the best quality sand and gravel is located immediately next to the Tagari River, but this material had not been touched, because EHL prohibits mining within 30 meters of a water body. Workers were observed wearing appropriate PPE and spotters were in place to control traffic and prevent accidents. This is a success story for third-party stewardship.

3.2.2.3 Incident Notification

Our observations regarding incident notification is the same as noted in previous reports. EHL has developed a classification acceptable to the IESC for social incidents and is providing Lenders with information on incidents with a social component, but we are not sure if the process is working as well as it should be. Notification has been good for accidental deaths and EHL has been quick to provide whatever information that could be provided. .

3.2.3 **Recommendation**

1. EHL should review their Lender notification criteria to see if anything is missed (repeat recommendation).

3.3 **MILESTONES SCHEDULE**

As previously described, the Milestones Schedule was prepared as Appendix H3 to the CTA to reflect twenty additional time-bound commitments for Lender environmental and social management compliance that were not practical for EHL to fulfill at the time of Financial Close in February 2010. EHL has effectively fulfilled the requirements of the Milestones Schedule. Pending items still remaining are MS 14⁴, MS 15⁵, and MS 16⁶ that relate to biodiversity.

- Milestone 14 is due to be completed by end of Q1 2013. It is anticipated that a draft overarching project-wide monitoring plan will be discussed with the IESC during Q1 2013.
- With respect to MS 15, a draft Offset Delivery Plan and Framework for Offset document has been provided to the IESC for review during Q4 2013. The delivery date of the final report remains end Q3 2013.
- Regarding MS 16, by way of background, PS6 requires that where a project is located within a legally protected area, the developer will meet the following requirements:
 - o Act in a manner consistent with defined protected area management plans;
 - o Consult protected areas sponsors and managers, local communities, and other key stakeholders on the proposed project; and
 - o Implement additional programs, as appropriate, to promote and enhance the conservation aims of the protected area.
- The pipeline RoW passes through the Lake Kutubu Wildlife Management Area. As such, there will likely be residual impacts from the construction and long-term physical presence of the RoW. The IESC previously agreed to EHL's proposal that the focus of the Milestone be changed from "Operator has integrated programs in the Lake Kutubu Wildlife Management Area in the offset delivery plan" to "Operator finalizes design of programs in the Lake Kutubu Wildlife Management Area.", thereby delinking MS#16 from the timing of MS#15. Delivery of this MS was reset to the end of Q2 2012.
- Due to the importance of developing a community-based program, the complexity of consultations, the outcomes of the stakeholder engagement process, as well as the need to adapt the project's biodiversity strategy as a result, the current strategy has now again reverted to managing conservation program activities as part of the Offset Delivery Plan (ODP). Therefore EHL needs to again change the performance indicator to what was originally envisaged (i.e. to be delivered as part of the offset), as a final enhancement program for Lake Kutubu is not scheduled for completion until 2015. IESC recognizes that a community-based approach is the right thing to do and that this does have the potential to compromise previous schedules. However, EHL is urged to give the highest priority to the Lake Kutubu offset when considering all proposed 'existing Protected Area' programs in the ODP.

⁴ Biodiversity Monitoring

⁵ Offset Mitigation

⁶ Legally Protected Areas

4 ENVIRONMENT

4.1 WASTE AND WASTEWATER MANAGEMENT

4.1.1 Project Strategy

The Project strategy for the management and disposal of waste and wastewater associated with construction is defined in the Waste Management Plan and in the Water Management Plan developed by EHL and included as appendices to the ESMP. Both documents identify minimum general requirements for the management of waste and wastewater, including the identification of potential sources of impacts, the proposed mitigation and management options, monitoring requirements and responsibilities. As outlined in these documents, the main objective of the Project is to be self-sufficient regarding waste management processes. The Water Management Plan is in turn supported by the Project Standards document that defines the effluent discharge standards associated with the operation of wastewater treatment plants (WWTPs).

4.1.2 Observations

Waste Management

With the commissioning of the landfill at the Hides Waste Management Area (HWMA) at Kopeanda, solid waste management has effectively achieved the status of “best” practice. Infrastructure and procedures are now fully in place, except for the completion of the waste processing area at the HWMA that will include the high-temperature incinerator. This situation does not detract from the Project’s ability to manage solid waste, as waste to be either processed or incinerated is being safely stored until the processing area is constructed and turned over to EPC4, expected to take place by the end of the year. Progress made since the IESC field visit in March 2012 includes the following:

- Identification and auditing/approval for use of two overseas third-party waste facilities to accept some hazardous waste streams not suitable for incineration;
- Monthly metric reports by EPC Contractors are now being sent to EHL Senior Management. This reporting includes total wastes generated in that reporting month broken down by wastes incinerated, wastes landfilled (or stored for landfill) and waste recycled/reused (or stored for recycle/re-use) expressed as kg/person; this allows for a comparison of landfilled vs. recycled wastes and promotes the sharing of trends of improvement and lessons learned among EPC Contractors;
- Continued operation of the LNG Plant solid waste landfill and three incinerators, including one for medical waste;
- Addition of second biodigester at the LNG Plant;
- Completion of groundwater and surface water baseline assessment at the HWMA (Kopeanda) Landfill; this has allowed for the commissioning of the first landfill cell and a second cell is under construction;
- Identification of a solution for the management of faulty gel acid batteries from EPC1 (77 tons in eight containers sent to Port Moresby whereby the vendor is seeking a permit to export and working with the manufacturer to identify a suitable disposal option);
- Establishment of the Waste Management Facility for drilling waste (cuttings treatment) at former C1 Quarry HQ1 – includes employment of hammer mill technology which does not require the use of fuel to heat the cuttings; the overall facility is one designed for offshore use and is self-contained.

One observation from the March 2012 field visit was the presence of excessive litter along the RoW and roadsides. Excessive litter was not encountered during this site visit and the observation from the March 2012 Issues Table has been closed.

Wastewater Management

The general situation identified with respect to wastewater treatment plants at the time of the November 2011 and March 2012 IESC field visits was that the infrastructure for wastewater management is generally in place, but performance lags behind solid waste management. This continues to be the case with the exception of EPC3 where good WWTP performance has been consistently achieved. The Project has

undertaken substantial effort to correct deficiencies with respect to WWTPs, but many of the EPCs have experienced common problems: failure of mechanical components, often by clogging of intakes; improper testing; issues with startup of new facilities or facilities that have been transported; qualifications of operators. Defective components and processes have been flagged and remedial solutions identified, but work still remains. The current situation with EHL and the EPC Contractors is as follows:

- *C1 (CCJV) – C1 Camp WWTP* – Chlorination has eliminated exceedance of total coliform bacteria and *E. coli*, but exceedance of TSS and COD are commonly measured. Exceedance of sample holding times when shipping samples to Australia is still an issue, but portable test kits have been procured;
- *EPC4 (CBI Clough JV)* – The Main Camp WWTP has been operational since July 2012 and the others are no longer being used. This WWTP has not yet stabilized and there have been persistent exceedances of TSS and COD, exacerbated by a mechanical failure (decanting weir) resulting in setback in plant stabilization. Repairs were completed early October 2012, which should bring the plant into compliance, but this still requires verification;
- *EPC5A (Spiicapag) – Various Camps* – Two types of WWTPs are used on EPC5A sites: Rotating Biological Contactor (RBC) System (main units) and Membrane Bioreactor Systems (inherited units). The RBCs have generally performed well, except for ammonia-nitrate and BOD, in particular at the Tamadigi Camp and Kopi Shore Base. The Membrane Bioreactor System currently at Gobe C1 Camp still performs inconsistently, with occasional non-conformant discharge for all of the measured parameters. Replacement parts have been ordered. Specifically, new membranes for the Gobe C1 Camp Unit have arrived in Port Moresby and are currently in customs. Limited data are available for the BioKube units currently being used at Hegero Camp and Tubage Lodge, but both appear to have inconsistent performance;
- *EPC5B (MCJV) – HGCP Pioneer Camp and Main Camp – WWTP1 at Pioneer Camp and WWTP2 at Main Camp*: A full suite of test results for these three WWTPs was not provided, but testing for fecal coliforms shows persistent exceedances. MCJV has worked with the manufacturers to troubleshoot the problems;
- *EHL – Work Camps* – the WWTPs at the four EHL camps (Juni; Kobalu; Moro Camp B; Wellpad A) have problems similar to the EPC Contractors. Moro Camp B has shown generally good performance since the March 2012 field visit, but the others all show intermittent performance. In-situ testing procedures have improved. Two new gray water holding tanks have now been installed at WPA and the option to install similar tanks at the other camps is being explored;

It is emphasized that these problems do not represent an environmental crisis, but still need attention. Most discharge points are ground seeps, but on July 18, 2012 a community grievance was raised against CCJV due to 'chemical smell' in a local creek. As WWTP performance is an issue that still persists even taking into account that significant work is being undertaken to resolve the situation, the general Level 1 non-conformance is reinstated.

Another aspect of wastewater treatment is the management of residual sludge. The accepted process consistent with the ESMP and currently being followed is that the sludge is dried and incinerated. The ash can then go in a landfill. This is not a simple process and EHL is considering the use of sludge as fertilizer to help reinstatement, in particular at the Komo Airfield, following procedures consistent with the US EPA Process Manual of Land Application. The IESC would consider this to be an acceptable change from current ESMP requirements.

4.1.3 Recommendation

1. As it may never be practical to have compliant discharges from the WWTPs on a consistent basis, consider either tertiary treatment (such as red beds) or discharge into designed leach fields.

4.2 HAZARDOUS MATERIALS MANAGEMENT AND POLLUTION PREVENTION

4.2.1 Project Strategy

The Project strategy for the management of hazardous materials is defined in the Hazardous Materials Management Plan and in the Spill Prevention and Response Plan, both included as appendices of the ESMP. These documents describe the Project approach and strategy to identify and mitigate potential impacts associated with the handling and transport of hazardous materials. The overall objective is to

prevent uncontrolled releases of any hazardous material during transportation, handling, storage and use of hazardous materials. Spills have been classified according to the Tier I to III categorization depending upon the potential impact of the spill and the capability of the available resources to face the emergency. The plans require that fuel and chemicals are properly stored in designated areas provided with secondary containment (e.g. double-walled tanks/lined containment bunds, drip trays) to prevent spills and enable containment of complete volume stored.

Because of the remote location and the significant amounts of materials mobilized throughout PNG, the Hazardous Materials and the Spill Prevention and Response management Plans have been supplemented by a Journey and Traffic Management Procedure that defines the requirements to ensure that the journeys are properly planned, approved and managed, and provide rules and applicable standard for light vehicles, buses and heavy goods vehicles operations. The document includes requirements for drivers, vehicles, training and authorization requirements for drivers, monitoring of journeys in terms of safety and assistance in the case of incidents, including requirements for emergencies and hazardous material spill response.

The main hazardous materials used by the Project are fuel for vehicles and diesel generators, paints and other chemicals used throughout the different construction sites, supplied to the different Project locations by local contractors on as-needed-basis.

4.2.2 Observations

EHL continues to work closely with the EPC Contractors to improve spill prevention performance as measured both as number of spills and also as number of spills in relation to man-hours worked (spill rate). The total number of spills is about half of what was recorded in March 2011, although Project activities have increased. During the period Q2 – Q3 2012, a total of 117 incidents, of which all but three were small hydrocarbon spills (mainly from hydraulic hoses) and the non-hydrocarbon spills were wastewater. EPC4 also reported a 750 liter spill of concrete water reducing agent WDRA on September 20, 2012, but determined the material was not hazardous to the environment. Spill records continue to be properly maintained by both the Project and the Contractors with results included in the environmental monthly reports.

In terms of ability to respond to spill events, all active EPC Contractors have Tier II spill response arrangements in place. Since the last IESC field visit in March, two more oil spill response drills have been conducted by CCJV in the upstream area and EPC2 also conducted an offshore drill. EPC4 completed spill training for 37 staff in September 2012 and EPC5A also completed training specific for the tree felling crew working within the Lake Kutubu catchment area. Regular spill response training has also continued at the LNG Plant. -

Overall, from what was observed in the field, hazardous materials continue to be well managed throughout the Project. Spill kits and fire extinguishers were found to be available and properly located throughout the sites and hazardous material drums and containers were observed to be appropriately labeled.

A unique aspect of the PNG LNG Project is the loss of foam used to drill through the Darai Limestone, which extends from the surface to as deep as about two kilometers along Hides Ridge. The issue is that this limestone is cavernous, containing fissures and cave systems extending kilometers underground. If a drill hole encounters a void, the drilling fluid can be lost into a cave system and may appear where the passageways daylight to the ground surface far from the well location. This possibility was recognized prior to the start of drilling, which is why air drilling with foam, rather than conventional drilling mud was used to drill through the Darai Limestone. In preparation for the possibility of a breakout of foam at the start of drilling at Well Pad B, baseline water quality data was obtained from nearby streams and a comprehensive stakeholder engagement program was undertaken to inform and educate local communities as to the possibility that foam might unexpectedly appear at the ground surface. This in fact took place where foam did appear at locations along Koare and Wapi Creeks, between about three and four kilometers from Well Pad B in August 2012. Chemical measurements confirm the foam is not hazardous and the foam itself did not prove to be an issue with the local communities. The overall situation was well managed.

4.3 AIR QUALITY

4.3.1 Project Strategy

The Project strategy for the air quality monitoring and the management of air emissions is defined in the Air Emissions Management Plan developed by EHL and included as an appendix to the ESMP. The

document refers to the management and mitigation of both fugitive dust emissions and gaseous emissions and identifies the different sources of impact, mitigation and management measures, together with indications of monitoring requirements, and roles and responsibilities. The overall objective of the plan is to control atmospheric emissions during the different stages of Project development.

Given the current stage of construction where extensive earthmoving is still ongoing, fugitive dust associated with excavations, vegetation/soil clearance, trenching, material hauling, dumping, site grading, and backfilling activities represent the main potential impact on air quality. Although temporary and limited to the time of construction and when conditions are dry enough, dust emissions might affect those areas in close proximity to the sites where there is on-going work and along routes frequently used by project trucks.

The general control measures to mitigate fugitive dust as outlined in the EIS and in the ESMP include the use of dust suppression techniques such as watering of the working areas and along those roads where project traffic is expected to be intense, use of cover sheets on topsoil and/or soil piles, reclamation and revegetation, use of covers on vehicles delivering site construction materials containing fine particles (e.g. sand, aggregates, etc.) to/from the, control speed limits and road maintenance. Dust masks are required as standard Personal Protection Equipment (PPE) for workers involved in operations that may entail potential dust inhalation.

Other sources of air emissions, including greenhouse gasses, are associated with gaseous emissions from the operation of diesel generators, vegetation clearance, and vehicular exhausts, although considered to be minor, localized and transient in nature at this stage of the construction. These emissions are commonly mitigated through proper operation and maintenance of equipment and through the location of fixed and mobile equipment as far as practical from local villages or worksite accommodations. Air emissions from waste incineration will be controlled by installing high temperature dual combustion burners commensurate with proposed waste inventories, through proper maintenance and by considering ad hoc emissions monitoring plans to detail emissions composition and monitoring criteria. Specific provisions in terms of management and operation criteria of incinerators have been addressed in the updated review of the Air Emissions Management Plan (Rev.2). By developing site-specific air emissions monitoring plans the Contractors are responsible for the implementation of all measures to limit/control air emissions and for proper maintenance of construction equipment and incinerators to ensure compliance with the applicable emissions criteria.

4.3.2 Observations

Dust was an issue in the Hides area where earthwork is still being conducted and roads are unpaved, but extensive use of water spraying was observed. Watering of unpaved road surfaces was also observed to be taking place at the LNG Plant.

Ambient air measurements are taken at four locations at the LNG Plant for SO₂ and NO_x. Results are within IFC air quality standards, as would be expected prior to actual operation of the plant. These measurements serve primarily as a baseline for the Operations phase. The other EPC Contractors are currently monitoring air quality in terms of the performance of the incinerators, the largest current point sources of emissions. No issues are emerging from this monitoring. Greenhouse gas emissions are reported in the EHL Quarterly Reports and the results are not repeated here.

4.4 NOISE AND VIBRATIONS

4.4.1 Project Strategy

The strategy undertaken for the management of noise and vibrations has been developed and incorporated in a Noise and Vibration Management Plan (NVMP) that is Appendix 3 to the ESMP. This document basically follows Australian and New Zealand Environment Council guidelines for minimizing vibration and overpressure associated with blasting activities and follows IFC requirements for noise.

4.4.2 Observations

At the time of the March 2012 field visit a persistent problem of noise exceedance at MCJV's Pioneer and Main camps at the Komo airfield that was assigned a Level I non-conformance. By the time of the field visit in August 2012, MCJV had taken different actions to investigate the reasons for these exceedances including the addition of two new monitoring locations at each camp, one inside the fence and one 25 meters outside, at the nearest dwelling. Nevertheless, measures taken in April, May, and June confirmed

consistently high results, especially at the Main camp and even in quiet areas. Actions taken by MCJV to resolve this situation included the replacement of the diesel generator at Pioneer camp for a smaller and quieter unit and the construction of a wooden wall around Main camp generator. MCJV had also retained the services of an external consultant to review the situation, but results were not available.

The results of the independent review were made available during this field visit and the main result was that the noise recording equipment had not been properly operated with the result that the results were between 5 and 10 dB(A) higher than they should have been. With correct measurements at more representative locations, the noise levels were found to be compliant with IFC requirements and the non-conformance has been removed from the issues table.

4.5 RAW MATERIALS MANAGEMENT

4.5.1 Project Strategy

EHL has developed a Raw Materials Management Plan (RMMP) as part of the ESMP, which covers all sources of aggregate other than material obtained beneficially during preparation of the pipeline trench or other Project facilities and roads/tracks. The RMMP requires social and environmental surveys and assessments for any new quarries or expansions of existing quarries. For existing abandoned quarries, or existing quarries operated by third parties, there is a requirement to establish a reinstatement strategy for approval by EHL. There is also a requirement to avoid quarry development on Hides Ridge. The RMMP establishes the policies of reducing the number of quarries developed by using previously worked (old) quarries and using limestone generated by construction activities for road base material. This plan also provides guidance for the management of timber that may need to be removed and defines that excavations should be made in a manner to maintain safe slopes and avoid areas of water accumulation. A requirement of the LESR and also of the RMMP is that EHL environmental and social stewardship be extended to third-party quarries and borrow pits required by the Project.

4.5.2 Observations

Obtaining high-quality aggregate for the Komo Airfield appears to be a critical path for completion of that Project component. The Timalia River Quarry/Borrow Pit has been reopened since the fatality with the addition of additional safety measures. In essence the working pit operates without spotters on the ground and traffic is directed from a person who can have an overall view from above and can direct traffic via radio communication. Production from this quarry is not enough to satisfy the requirements for aggregate at the Komo Airfield and additional aggregate is being obtained from the Tagari River Quarry/Borrow pit operated by a third party Cisco-Holloman. This operation was also visited and found to be compliant with ESMP requirements. Although the best quality aggregate is located in a ridge next to the Tagari River, this material is not being mined within about 30 meters of the river to avoid potential impact, consistent with EHL requirements. Good use of PPE was observed and traffic within the operation was closely controlled. This is a success story for third-party stewardship.

4.6 EROSION AND SEDIMENT CONTROL

4.6.1 Project Strategy

EHL has developed an Erosion and Sediment Control Management Plan (ESCMP) as a fundamental part of the ESMP. The basic objectives of the ESCMP are to:

- Maintain stable landforms to reduce erosion and enhance reinstatement;
- Maintain integrity of assets (through stable landforms); and
- Reduce adverse impacts on stream water quality, and associated beneficial values, and in-stream sedimentation.

The Ecological Management Plan requires comprehensive pre-construction survey such that the potential for soil erosion is well defined, potential receptors are identified and a plan is in place to minimize the mobilization and dispersion of sediment into freshwater and estuarine environments. The plan defines requirements for assessing and establishing erosion and sediment control requirements (particularly in relation to site preparation earthworks, road construction across watercourses, watercourse diversions, and site drainage), detailing specific erosion and sediment controls to be implemented (e.g., diversion drains, sediment ponds and fabric silt curtains). Monitoring requirements are also defined.

4.6.2 Observations

Erosion and sediment control are critical components of construction activities. Significant effort continues to be placed on controlling erosion and generally good success was encountered. As a general observation, we did not encounter any glaring deficiencies in terms of the erosion and sediment control structures we reviewed in the field. Portions of the pipeline RoW still have the potential for serious flooding, but erosion and sediment control structures are well constructed and even if a portion of the RoW has flooded after reinstatement, the vegetation has still protected against erosion. Effective sediment control structures were observed to be in place around the HGCP site. At the time of the March 2012 field visit, the erosion and sediment controls at the Komo Airfield were not working effectively. During this field visit, evidence of significant improvements in the control of erosion was encountered at the Komo Airfield. This is a subject that will require continuous attention at the Komo Airfield, as the construction process has been modified such that reinstatement will not take place until the field is effectively available for use. Nevertheless, current erosion and sediment control activities are consistent with good practice and our observation has been removed from the Issues Table.

Along the Hides Wellpad Access Road, EHL has expended considerable effort to minimize the impacts of sidecasting, but the impacts are still significant and near Well Pad E a mudflow started that has flowed more than a kilometer away from the access road. This situation is unfortunate, but it is not obvious how the situation could have been predicted or prevented. It is likely that sidecast material from old OSL construction activities provided the source of this mudflow. Although it was hoped that competent limestone would have formed the backbone of Hides Ridge, the actual situation is that liquefiable clays can and have been found at numerous locations along the access road.

4.6.3 Recommendations

1. Although it is understood that the plan for managing sidecasting is being followed, we continue to recommend that EHL be vigilant to make sure the footprint associated with sidecasting is as small as practical (repeat recommendation).

4.7 BIODIVERSITY AND ECOLOGICAL MANAGEMENT

4.7.1 Project Strategy

The Project's strategy for biodiversity and ecological management is illustrated in several management plans that appear as appendices to the ESMP and in EHL's Project-wide Biodiversity Strategy document. Mitigation measures within the Ecological Management Plan, the Weeds, Plant Pathogens and Pest Management Plan (which covers alien invasive species; herein referred to as the 'Weeds Management Plan'), the Induced Access Management Plan and the Reinstatement Management Plan will be implemented by contractors during the construction phase, and, in some cases by EHL. Mitigation measures are often specific to each of the three project areas (Upstream Project Area, Marine Project Area and LNG and Marine Facilities Site), and are sometimes site-specific (e.g., the Ecological Management Plan contains a section on Hides Ridge). In addition, EHL has developed a Quarantine Management Program (QMP), which is a Project-wide document designed to prevent the importation and spread of pests, plant pathogens or disease (including invasive species) via Project personnel and cargo.

Central to the Ecological Management Plan and the Weeds Management Plan is the 'pre-construction survey' (the PCS), which seeks to identify through on-the-ground investigation a number of ecological attributes, including (but not restricted to):

- Pinnacles that contain bat colonies;
- Potential Bulmer's fruit bat (*Aproteles bulmerae*) colonies;
- Bird-of-paradise and bowerbird display grounds and trees;
- Large individual trees (>1m diameter breast height)
- Areas of *Pandanus* swamp forest;
- Swamps in sinkholes less than 50-m deep on Hides Ridge, and
- *Nothofagus* (beech) forest that will require special hygiene measures (due to risk of dieback as caused by pathogens such as *Phytophthora cinnamomi*).

The PCS is undertaken either by EHL with their designated staff/consultant experts, or by Contractors with sub-contractor teams that undertake surveys for their scope of work e.g. Spiecapag (EPC-5A) for the pipeline ROW, and MCJV (EPC-5B) for the Komo airfield and facilities associated with construction of the airfield, such as quarries.

The Biodiversity Strategy has been developed to address long-term mitigation of biodiversity for both the construction and operation phases within the Upstream Project area. The current Strategy provides an overview of EHL's overall approach to mitigating impacts on biodiversity in alignment with the mitigation hierarchy, and provides a preliminary summary of the Project's approach to its Biodiversity Offset Program and Biodiversity Monitoring Program. In alignment with the Biodiversity Strategy, EHL are developing an Offset Delivery Plan, which will be a detailed document on offset design and management.

The Biodiversity Monitoring Program philosophy continues to evolve, and there has been some amendment to the suite of Programmed Monitoring Activities (PMAs) since the IESC-VI visit. There are still five anticipated PMA components, of which the original PMA4 (Road Record Assessment) has been withdrawn, and a new activity listed as PMA-5 – see Monitoring in next section for further details. These are anticipated to include:

- PMA-1, 'Remote Sensing of Indirect Impacts', designed to utilize medium-resolution satellite imagery to monitor forest loss and degradation in the entire Upstream Project Area, as caused by project-related indirect impacts;
- PMA 2, 'ROW Condition Surveys' designed to monitor the condition of focal habitats, reinstatement works, the potential spread of invasive species and disease along the ROW, and checking that access remains controlled, through aerial and ground inspection;
- PMA-3, 'Forest Regeneration and Condition Surveys', designed to gather in-field data on forest succession, faunal communities and the condition of forests adjacent to the ROW, roads and facilities, using a randomized vegetation condition comparison against benchmark sites representing equivalent forest-type and timescale of regeneration;
- PMA-4, 'Efficacy of Offset Projects' gathers data in respect of EHL's biodiversity offset program, to evaluate whether objectives are being achieved for each separate component of the offset program;
- PMA-5, 'Intensive Biodiversity Appraisals', to implement a system of focused field-based biodiversity surveys to provide flora and fauna species inventories utilizing a rapid assessment methodology, in and around the Upstream Project Area.

4.7.2 Observations

4.7.2.1 Ecological Management and Biodiversity

Biodiversity Strategy

Implementation of the Strategy continues, with the Project focusing on:

- Avoiding impacts on focal habitats during the ongoing construction of the RoW and the Hides Wellpad Access Road;
- Mitigating impacts through implementation of the ecologically relevant management plans (see next sections); and
- Development of the offset delivery plan to address the Project's residual impacts.
- The Strategy is integral to the development of the biodiversity monitoring and offset delivery plans and in turn should therefore reflect the progress made within both areas. As such, the expected third revision to the Strategy is expected shortly.

The IESC welcomes the successful recruitment of a Biodiversity Advisor to the existing Environmental & Regulatory team. This position based in Port Moresby will provide a full-time resource to focus on implementation of the Biodiversity Strategy, primarily on biodiversity offset and monitoring elements.

Ecological management & protected areas

On the Hides Ridge, all on-the-ground Pre-Construction Surveys (PCS) have been completed along the Well Pad Access Road (WPAR), with the data now being incorporated with desktop study information, prior to submission to the Dept. of Conservation (DEC). L&CA assisted in obtaining knowledge from local guides to identify ecological and social sensitive sites. Examples of focal habitat avoidance include:

- Quarry HQ2 location option was avoided, due to potential bat cave;
- Quarry HQ5 location option was avoided, due to suitable bat cave
- Wellpad-D use of sinkhole for side-cast material was avoided, due to being less than 50m deep and having cultural sensitivity for a water spirit; and
- Two sinkholes along Hides WPAR were reviewed and rejected for spoil-dumping due to open cave system and social resettlement concerns.

Pipeline RoW construction is currently active within the Lake Kutubu Wildlife Management Area (WMA) boundary, a Ramsar site of international wetland importance. Progress by the Project on developing conservation programs within the WMA has been slow and changeable. Deadlines for finalizing the design of such programs have been repeatedly deferred (MS#16). Following protracted discussions with various stakeholders with interests in the WMA, EHL now appears to have a clearer idea on how they can contribute to effective conservation in the area. EHL has expanded their intended program beyond simply the proposed sustainable fisheries management plan (as noted in recent IESC reports). A joint program of work has been developed to integrate EHL's approach with existing conservation efforts in the WMA (currently being undertaken by OSL and the WMA Committee stakeholders). EHL's 'Enhancement Program' will be managed as a component of their Offset Delivery Plan and is anticipated to include further extensive consultation, an ecosystem services analysis, biodiversity surveys, mapping and training and a WMA management plan for Lake Kutubu.. The IESC is seeking further evidence that EHL is focusing the required priority on conservation programs at Lake Kutubu, and have thus issued the non-conformance shown in Section 2.

Examples of footprint reduction continue, such as pipe-laydown and vehicle parks located within the RoW footprint. There has been re-use of previously used sites, for example with Drilling utilizing spoil dump areas at the base of the Hides Ridge as their Drilling Support Base.

As the RoW progresses closer to the Hides Gas Conditioning Plant (HGCP) and the decision to locate the RoW corridor along the Hides WPAR is finalized, the overall construction footprint of the Project is becoming apparent and the footprint of fixed sites more defined. The Project is recording all land areas used, including those reinstated, so that an analysis of predicted versus overall construction footprint (and anticipated operational footprint) can be undertaken. This will be discussed in more detail during the next IESC visit, as further footprint information is collated and analyzed.

There is scope for the future restoration of land areas currently considered 'within-the-fence' to be reinstated and returned for ecological use, especially in areas of critical habitat. Site-specific reinstatement plans will be the subject of detailed discussion during the next IESC visit.

Biodiversity offsets to address residual impacts

EHL has consulted both internally and externally to develop their rationale for delivering biodiversity offsets. These consultations have led to the development of an Offset Delivery Plan and an associated background document, a Framework for Biodiversity Offset; the latter containing the Project's technical rationale for offsets. The IESC will review these documents after the current mission, prior to the documents being discussed with external stakeholders at a workshop anticipated during Q1 2013.

Monitoring

The project-wide overarching monitoring plan is due to be finalized by end Q1 2013 (Milestone#14) with IESC expecting the opportunity to provide feedback prior to the next mission. In anticipation of plan finalization, individual PMA's continue to be tested and refined.

As noted above, the original PMA-4, 'Road Record Assessment', has been withdrawn from the suite of PMA's as the monitoring philosophy for implementation of the Biodiversity strategy evolves. The PMA was anticipated to monitor potential third-party use of Project roads during operations; the Project advises

this intention will now be managed through an expanded PMA-2 scope and by inclusion in the Operations ESMP.

The newly proposed PMA (PMA-5 above) will focus on providing detailed assessments of representative habitats with which the Project's footprint overlaps. Building on an approach well utilized by scientific researchers in PNG and globally, the IESC commends the Projects intention to undertake these rapid inventory-type assessments to add additional species-level data to their understanding of the vulnerability and resilience of various habitat-types within the footprint.

As the offset design philosophy matures, it will be critical for the new PMA-4 to effectively monitor that offset gains and anticipated outcomes are being achieved. Therefore the linkage between monitoring, indicators and targeted conservation gains needs to be both rigorous and demonstrable.

As highlighted in the March 2012 mission, the impact of potentially unsustainable levels of hunting resulting from in-migration remains an indirect impact not captured within the current suite of PMA's. Establishing a baseline from which any increase caused through hunting by incomers can be measured, will allow the project to identify the scale and significance of the effect. This is especially important to understand prior to demobilization of the workforce, with the potential that non-locals laid off may not return to their original villages, choosing instead to remain in the area on the off-chance of future employment. The IESC refers the Project to the previously made recommendation (Recommendation 1, IESC-VI report).

4.7.2.2 Induced Access

Operations continue to determine their needs for site-specific permanent access to the RoW during the productive life of the pipeline. Cathodic Protection (CP) valves will require maintenance visits and the delivery of fuel, and therefore permanent access will be required. In line with the Induced Access Management Plan, Operations are assessing access to each CP valve on a case-by-case basis and these are being reviewed with the IESC during each visit.

Ongoing access restrictions were observed in the vicinity of Project roads, specifically at Mubi Bridge (at Heartbreak Hill) and at Hides Ridge clean-line. Shooflies linking the pipeline RoW to OSL roads are being purposefully blocked, with erosion control measures implemented, and reinstatement monitored. These are noted in the Road Register.

As highlighted within the Monitoring section above, details on how the Project will monitor long-term effectiveness of mitigation measures to restrict induced access will be forthcoming as the Operations ESMP is developed and PMA-2 implemented.

Regarding the possible Tamadigi to Kaiam road postulated by the PNG Government (as detailed in our IESC-VI report), the potential remains for this road (if constructed) to have repercussions on the ability of the Project to meet its own commitments to avoid and reduce induced access to areas opened up by the Project. The recommendation to assess various scenarios on how this commitment can be realized in the Kaiam Bridge area, including RoW and CP service roads, remains valid and is repeated in this report.

4.7.2.3 Reinstatement

Reinstatement and re-vegetation are critically linked to successful erosion and slope control, and the avoidance of priority weed species in Project areas. Reinstatement efforts, and the erosion control measures that preclude them, are being implemented effectively and good progress was apparent at several locations visited by the IESC team during this visit.

Natural re-vegetation is occurring, with early succession plants providing coverage and stability to original topsoil which had been stored at the sides of the RoW. Reinstatement measures have progressed in the following sections:

- Omati swamp special section, KP 293-278, completed;
- Kikori River to Mubi River, KP 226-174, completed;
- Heartbreak Hill, KP 174-168, in progress; and
 - Camp sites:
 - Camp 1 at the Kope Scraper Station where reinstatement is complete;
 - Camp 2 at Kaiam, Camp 3 at Gobe and Kantobo Camp are in progress;

- Access roads: four between KP 182-187;
- Pipe yards.

In the southern Upstream area, the IESC performed a flyover of the RoW from the Omati landfall to Gobe, and drove along parts of the RoW around Gobe. In general, reinstatement was progressing well and there was sufficient evidence of due regard by Contractor teams in preparing the ground and reinstating within a timely period following trench backfilling and hydro-testing.

A small number of short sections where early succession natural re-vegetation was previously established had suffered as a result of unseasonably heavy rains during September and new growth had died off. This does not appear to be due to failings in methodology or application, as nearby sections of the closely aligned OSL RoW, where vegetation has been very well established, were similarly impacted by the rains. The heavy rains had also caused delays in the laying of fiber-optic cable (FOC) in sections between Omati and Gobe, and damage had occurred to the FOC conduit which needed repair (KP180); this was unfortunate, as this meant that some areas where reinstatement had been completed successfully were now being re-cut, and the ground once again disturbed.

As of mid-October the total length of RoW reinstatement to date is 67km (15km between KP 293-278, and 52km between KP 226-174); this equates to roughly 23% of the total terrestrial RoW length. Photo points at key locations along the reinstated RoW are now enabling a visual comparison record over time, and these are used during weekly construction management meetings to present progress. The IESC is satisfied that sufficient priority has so far been afforded to the swift implementation of erosion control and reinstatement measures along the RoW, especially considered the obstacles contributed by the recent heavy rains.

Areas deemed not required for construction purposes are undergoing reinstatement at Komo. Sown Japanese Millet, an exotic imported seed (subject of a previous waiver), is proving effective as a short-term soil stabilizer on slopes, providing time for carpet grass and other natural vegetation to become established. The Project is benefitting from specialist advice offered by the external consultant Biotropica as part of their more frequent visits, where additional early growth plants are now being utilized. Due to delays in construction and the chosen methodology of airstrip construction, the Project advises that the majority of site reinstatement cannot occur until the very final stages of airstrip construction. Even though the nursery at Komo has undergone a small expansion, demand for wildling plants will increase rapidly when reinstatement efforts are ramped up during Q1 2013; the IESC predicts there is the risk of not having sufficient wildling stock to meet demand, and therefore some areas not able to be reinstated successfully within a suitable timeframe. Confirmation of completed reinstatement prior to handover from contractor to EHL will be sought during the next IESC visit.

At the Hides Gas Conditioning Plant (HGCP), jute matting and Japanese Millet seeding have helped stabilize soils and allowed early natural growth to establish. Along the Well Pad Access Road (WPAR) the following spoil dumps are now closed and site-specific reinstatement plans being developed (unless stated otherwise):

- SD-1 plus extensions 1 & 2 (SD-1 ext.3 still in use);
- SD-2 (SD-2 ext.2 still in use);
- SD-5, natural growth reinstatement occurred;
- SD-6 (SD-6 ext.2 will no longer need to be used);
- SD-7, natural growth reinstatement ongoing;
- SD-8;
- SD-9.

SD-4 is currently being used as laydown by Drilling, so reinstatement has not yet been planned.

A program of mangrove restoration is being implemented at the pipeline landfall RoW at the LNG Plant. Although specialist advice has been sourced from the University of PNG, plant survival following the two replanting phases undertaken to date has had mixed success. At the moment, natural regrowth appears to be taking hold more successfully, although we were informed this may be due to the fact that the Contractor has been providing increased irrigation in those areas.

4.7.2.4 Invasive Species Management and Quarantine Management Program

Quarantine Management

EHL is now working more closely with NAQIA senior management to try to better understand what constitutes an automatic inspection, or automatic fumigation of consignments imported for the Project. Regular performance meetings are now held between EHL and NAQIA.

All Contractors are now complying with the provision of quarantine-related data. The Project provided IESC with a breakdown of consignments, inspections and fumigations. The IESC graph below indicates the proportion of consignments imported by each Contractor that require inspection. The Project has advised that high inspection frequency is due either to the point of origin of the consignment (i.e. NAQIA considering the port being of higher risk) or due to paperwork being missing or incomplete. Both EPC2 and EPC5A have experienced a higher rate of inspections during 2012 YTD when compared to 2011 full year. Drilling has experienced a lower rate of inspections. EPC5B did not provide 2011 data.

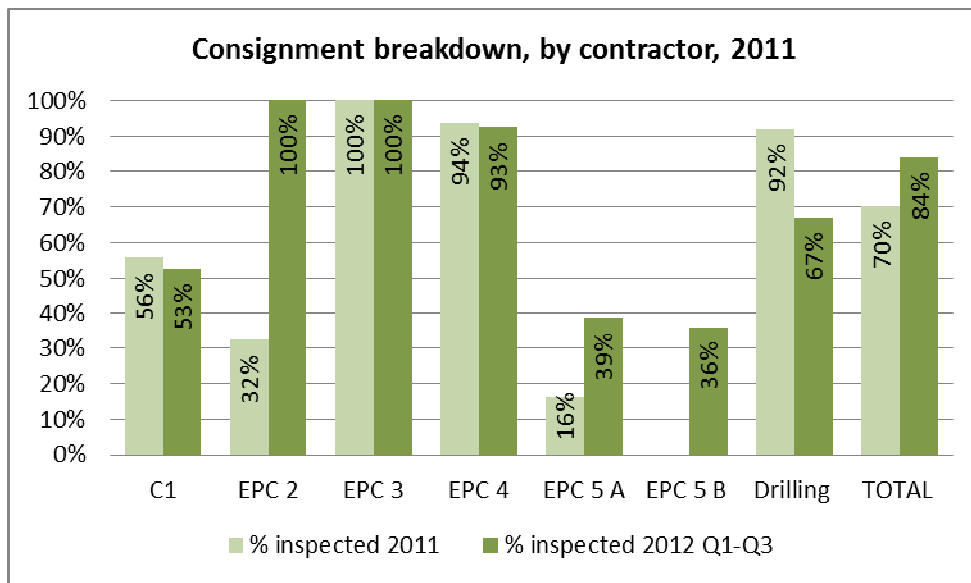


Figure 4.1: Quarantine Management: Consignment Breakdowns

The IESC graph below shows the proportion of consignments where an inspection results in the need for fumigation. During the period 2012 Q1-Q3, EPC5A imported only a third of the number of consignments imported during 2011, but the proportion of inspections increased. In addition, of the EPC5A consignments inspected, as the graph below indicates, a total of 42% resulted in the need for fumigation, a significant increase in fumigations over that required during 2011.

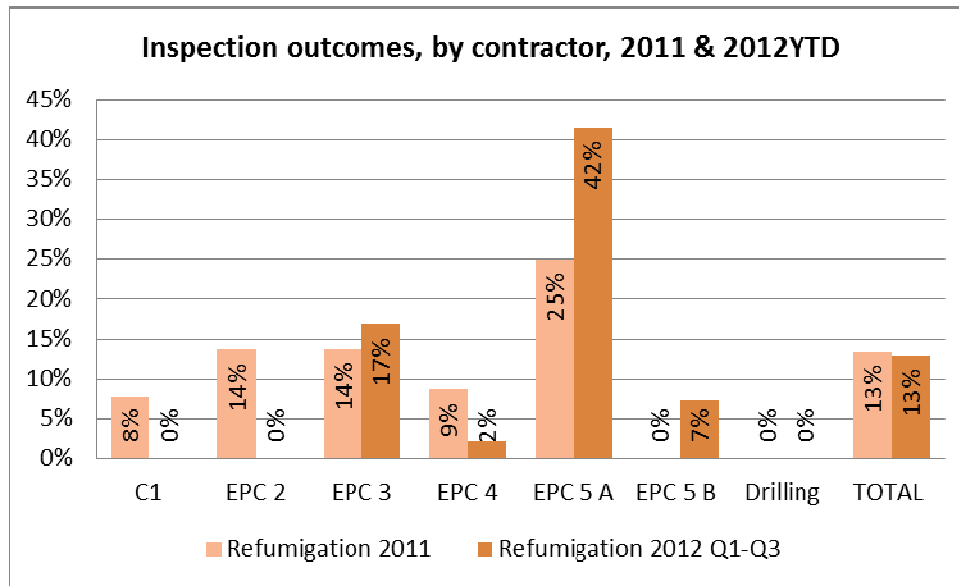


Figure 4.2: Quarantine Management: Inspection outcomes

EHL is focusing more closely on the performance of EPC3 and EPC5A to seek the required improvements in performance. EPC3 conducted a desktop exercise during Q3 to test the Quarantine Procedure and learning's have been shared with other Contractors.

Weeds, Pests and Pathogens (Invasive Species)

The IESC can report a high level of engagement on weed management by EHL Advisors, Field staff and Contractor teams. All EPC's met during the mission are engaged in regular weed surveys and eradication actions if Priority 1 (P1) weeds are identified. As recommended during our last visit, Biotropica reviews are now conducted bi-annually, and all EPC's appear to be benefitting from access to frequent specialist advice. EHL, in conjunction with Biotropica, has developed a Weed Identification Manual – this useful, full-color report provides a targeted reference guide on P1 & P2 species, and provides consistency in the required mitigation approach for each risk-prioritized weed.

One challenge for EPC5A since the IESC-VI visit has been the confirmed presence of *Ludwigia leptocarpa* (Anglestem willow primrose), a P1 weed misidentified during pre-construction survey – the correct genus was recorded, but not the correct species. With Biotropica assistance, the EPC has correctly identified the weed and its presence along roadsides in the Kopi-Omati area noted and removed. However, the weed has since increased in both abundance and distribution, with limited numbers now found between Kantobo and Tamadigi. An integrated Pest Management Plan is being considered to target control efforts.

The washdown stations at the Hides Ridge 'clean-line' were observed, and the control certification system seen to be functioning, with drivers provided tickets on completion of wash-down. Only two P1 weeds have been recorded above the clean-line, the same two as identified during PCS; these are being removed when found. At the HGCP, there has been a reduction in both diversity and abundance of weeds.

As a result of the analysis undertaken to date on the potential for spread of Phytophthora, the project is installing additional wash-down stations either side of the ecologically sensitive Benaria Ridge: at Homa quarry (near KP-61) and near the Benaria River (at KP-28). An upstream-wide dieback soil sampling and analysis has been completed, and a report is expected during Nov 2012.

4.7.2.5 Freshwater and Marine Ecology

Results of marine monitoring conducted in February – March 2012 were available in May 2012, but not provided to the IESC until February 2013. Accordingly, this observation is a modification from the situation as understood based on information available in October 2012. Monitoring indicates some coral reef monitoring points in Caution Bay were impacted by pipeline construction. Specifically, out of 14 coral monitoring points the assessment based on photos and videos found no discernible changes at eight locations; at three locations uncertain impact was described; an observable layer of sediment over coral was encountered at three locations and at one location the descriptive term was "smothered." According to the

Environmental Monitoring Plan (EMP), Table 2, pre-construction marine water quality and ecology should be compared to construction and post-construction water quality and ecology. The EMP recognized that there could be some impact (up to 5% loss of habitat and resource value), but recovery was expected within 2-5 years.

This situation is considered an observation and not a non-conformance, as additional monitoring is required to verify conformance. EHL should be able to demonstrate significant recovery with subsequent monitoring as the information presented to date does not support the conclusion as stated. It is expected that this verification will be made available by means of reporting with supporting quantitative data and representative photo evidence.

4.7.2.6 Omati River and Caution Bay Fisheries Studies

The Q1 2012 Omati River fisheries report has been completed; the Q2 draft report is being reviewed; data entry for Q3 is in process; and the field work for Q4 was scheduled to occur in October. Fisheries monitoring in Caution Bay continues and the Q1 and Q2 reports have been received by the IESC; data entry for Q3 is in process; and field work for Q4 was scheduled for October 2012. So far the 2012 fisheries data for both areas have not been presented such that they are comparable to the 2011 surveys, which were more comprehensive. Key findings, however, have further characterized the fisheries and EHL expects to finalize their baseline surveys for Caution Bay and the Omati Delta with a standardized Catch per Unit Effort (CPUE) by the end of Q4 2012. The project is commended for maintaining well-trained village assistants, data quality control, and committing to monitor fisheries through 2014.

Several additional fisheries livelihood programs and participation incentives have been identified:

- Papa Mangrove Rehabilitation, completed in Q2 2012; Monitoring in progress, Q3-4 2012;
- Deep Sea Fishing Training, planned Q4 2012;
- Mangrove Awareness Education in local schools, Q3 2012;
- Fisheries Committee Capacity Building, planned Q4 2012;
- Mangrove Nursery Income generation support, Q1 2013;
- Environment support for Reef Restoration, Q2 2013;
- Milk Fish Aquaculture Survey Concept, Q3 2013;
- School Fisheries Engagement Omati Concept Q1 2013.

These programs have been established on the basis of partnerships with the University of Papua New Guinea, the National Fisheries College, local service providers and committees, and Provincial fisheries departments with EPC Contractor support.

4.7.2 Recommendations

1. The IESC considers EHL's Lake Kutubu Conservation Enhancement Program should be progressed with the utmost priority, especially considering the current pipeline construction within the WMA, and the extent to which consultation with stakeholders has already occurred. The IESC are seeking evidence that the Lake Kutubu conservation programs are being given sufficiently high priority status within the wider efforts being made to comply with PS6.
2. Regarding the potential for footprint reduction, the IESC recommends the Project consider the following as examples of opportunities to restore habitat to used areas:
 - a. Once the Hides wells have been drilled and completed, the well-pad areas could be reduced in size. Boundary/security fences could then be brought in closer to the permanent well-heads, so that a smaller footprint remains in the longer-term, and areas then outside the reduced fence-line can be fully restored.
 - b. At Komo, notwithstanding the need to retain a clear line of sight on the 1:7 slope either side of the airstrip (and secure areas around the boundary fence, terminal buildings and airport infrastructure), all other areas should be earmarked for full restoration.
 - c. The LNG Plant contains a large footprint within the fence; notwithstanding the need to retain a secure boundary perimeter around the site, there is scope for allowing large swathes of land to fully restore within the fence.

3. The IESC will perform a separate review of the Projects Offset Delivery Plan and Framework, but as a result of discussions during the mission, we reiterate the need for a transparent form of offset accounting to be included within the offset rationale. This will allow the Project to clearly and quantitatively demonstrate measurable, on-the-ground conservation gains, vital components of offsets when demonstrating no net loss and no adverse impact to critical habitat values. The Project needs to ensure any conservation gains are additional to those that would have occurred without the offset. The timing of delivery and duration of conservation gain needs to be carefully considered when realizing the timing and duration of the Projects residual impacts. The constraints and risks to achieving successful outcomes need to be factored into the offset strategy and managed accordingly. The IESC urges effective partnership at a variety of levels and with a variety of stakeholders, as this will be critical to EHL achieving a suite of successful offset components in the long-term. These aspects will be pursued during future IESC missions.
4. As EHL moves through construction phase towards operations phase, the IESC recommends the Project focus specifically on developing measurable indicators with defined targets to identify whether biodiversity-related mitigation measures employed are sufficient to achieve successful outcomes as anticipated in the Biodiversity Strategy. The monitoring plan needs to tie in directly with the Operations ESMP, and thresholds to determine non-compliance levels be defined. Only then can the Project demonstrate how they are achieving no measurable adverse impacts in the critical habitat in which the Project is located. This should be considered a high priority for the Project to adequately demonstrate they are meeting the requirements of PS6.
5. The IESC urges the delivery of an updated Biodiversity Strategy, and project-wide Monitoring Plan by 1Q 2013 as per MS#14 of the Milestone Schedule.
6. The IESC recommends that the Project continues to make each and every decision on permanent access to the pipeline RoW on a case by case basis.
7. As the Project's ability to restrict induced access is fundamental to managing indirect impacts such as fire, pests, weeds/disease and hunting, the IESC urges EHL to ensure that sufficient due regard be given to developing specific indicators to monitor induced access through mechanisms such as PMA-2 and the Operations ESMS, and also within the RoW Management plan currently under development.
8. The IESC recommends that the Project assess the various possible scenarios that might arise if and when the Government decides to improve its own infrastructure in the vicinity of the Tamadigi, Kikori River to Kaiam Bridge area, and consider how best the Project can still achieve both the requirements of IFC PS6 and its own commitments to avoid induced access to areas opened up by the Project (repeat from IESC-VI report).
9. At Komo, the IESC will be keen to see reinstatement successfully completed prior to handover from contractor to EHL. Confirmation of this duty being fulfilled, and/or a clear and sufficient transition commitment in place, will be sought during the next IESC visit.
10. IESC encourages the Project to continue to ensure the Omati landfall RoW is reinstated within a swift timeframe following the challenges faced through unseasonably high rainfall levels..
11. IESC commends the senior level engagement and closer working relationship initiated with NAQIA, and recommends EHL to work more closely with those Contractors where performance improvement is required.
12. EHL has compiled a significant amount of fisheries data for the Omati Delta and Caution Bay, but the data have not been interpreted in a manner such that any impacts from the Project can be quantified. IESC recommends that the data be interpreted in terms of catch/effort by time fished, fishing gear, and fishing ground/target species such that any effects of the project can be assessed quantitatively.
13. Now that reef damage has been documented, the IESC recommends the Caution Bay marine ecology surveys be continued for up to 5 years or up to the point where recovery can be demonstrated, but modified for efficiency and concentrate on characterizing the reef damage caused by siltation from pipeline construction, and predicted recovery. For example, eliminate all or most pipeline, seagrass, and coral fish sites where no notable differences were found when comparing pre construction with post construction, and add up to 8 sites at the same depths north and south of the damaged site(s).

The magnitude of impact predicted in the EIS for construction-related impacts from sedimentation on sensitive habitats such as the reefs and seagrass areas was considered as “medium” where it affected less than 10% of the available habitat and / or was expected to occur within two kilometers from source with recovery within 2 to 5 years. The monitoring should be undertaken to verify this predicted recovery.

5 SOCIAL

5.1 INTRODUCTION

5.1.1 Scope of Social Review for this Site Visit

The IESC engaged with some 110 people individually or in groups during its October 2012 visit. People met with included those affected by resettlement and communities living adjacent to Project camps or works areas. The IESC social review included (but was not limited to) the following activities:

- Introductory presentations by L&CA in Port Moresby;
- In-field discussions with a range of project personnel including project managers, L&CA officers, census and survey team, water task force, the resettlement team, and contractor community liaison and field staff;
- Meetings with physically displaced and soon to be displaced households in Homa, Paua, Hides and Angore;
- Visit to various livelihood program participants – pig breeding, igloo green-house/ plant materials propagation;
- Walk along part of the HGCP perimeter road and inspection of resettled households;
- Meeting with vulnerable households near the Hides spoil dumps;
- Update on water and water issues management;
- Meeting with Ms. Annie Kajir, Environmental Law Centre (ELC);
- Meeting with the Komo Community Issues Committee;
- Meeting with the Personal Viability training coordinator and participants at Komo;
- Meeting with Women's Association members and food processing initiative at Angore;
- Meetings with LNG plant site villagers, Boera and Porebada; and,
- Informal interviews with members of communities in the vicinity of major works areas.

Overall, IESC meetings and exposure to project affected communities was assessed as satisfactory for the purposes of this review. The IESC was able to visit Angore for the first time.

5.1.2 Highlights and Challenges

Highlights of the October 2012 visit for the IESC included:

- Stability and consolidation of the L&CA team – now working effectively across all functional areas;
- Adoption of an integrated approach to land access and resettlement in the Angore–Benaria area has led to more effective communication with affected communities and more rapid completion of resettlement agreement negotiations;
- Resettlement house construction has been completed; and,
- An Operations Phase Pipeline Right of Way Management Plan has been completed with integrated multidisciplinary inputs.

The principal social challenges identified by the IESC going forward were as follows:

- Restoring resettled families access to water, schools and social services;
- Managing demobilization, in particular fostering dialogue within communities about potential impacts and mitigations;
- Supporting the DPE and Government to arrive at an equitable strategy for royalty distribution; and,
- Managing the process and logistics associated with making top-up payments to achieve 'full replacement value' on historical compensation agreements.

While the last IESC report heralded the Government's newly announced process for Infrastructure Development Grant distribution, the process succumbed to pre-election pork barreling, at least in Hela Province. This was a disappointment for the EHL Government Affairs team that had worked hard to promote a systematic and transparent approach. All is not lost. Now that the election is over, it is to be hoped that next annual grants will be distributed by following the originally announced process.

5.1.3 Waiver

The IESC social review is substantially based on interviews conducted with project affected people, NGOs and other stakeholders. It was not within the remit of the IESC to verify or substantiate the statements made by interviewees and, unless otherwise indicated, the IESC has taken no steps to verify or substantiate such statements. Due caution should therefore be attributed to all statements reported to have been made by interviewees. Accordingly, the IESC makes no representation as to the substance of reported 'perceptions' or 'beliefs' of interviewees and notes that hearsay evidence should not be treated as proof of any specific statement or concern expressed.

The IESC review provides a “snapshot” of the PNG LNG Project’s state of compliance with the commitments and standards defined in the Project Environmental and Social Requirements, including but not limited to the RPF, component RAPs and other Social Management Plans. As such, the review does not purport to be a fully comprehensive evaluation of compliance.

5.2 L&CA (FORMERLY SELCA) ORGANIZATION AND RESOURCES

5.2.1 Project Strategy

The Project will provide the organization, personnel and resources necessary to comply with national legislative requirements and to deliver commitments contained in the ESMP.

Since the last IESC review, L&CA has distilled its role and functions into the following.

Goal:

- Sustain access to resources by developing and maintain our social license to operate.

Objectives (refined since the July – August 2011 review):

- Secure and facilitate ongoing land access;
- Anticipate and mitigate construction and production interruptions;
- Develop EHL’s Social License to Operate through its relationships with the communities where it works;
- Facilitate compliance with company policies & Project socioeconomic commitments; and a new objective has been added,
- Develop EHL national staff into the corporations’ socioeconomic leaders of the future.

5.2.2 Observations

The L&CA team is fully staffed. Its program of recruiting high-caliber national staff and mentoring them for senior roles in the Operations organization is progressing well. Two years into construction, the L&CA team has finally coalesced into an effective unit that is delivering its stated mission of securing and facilitating ongoing land access and is maintaining the Project’s social license to operate. Several senior Field team managers will be retiring at the end of 2012. It will be important to ensure that there is an adequate handover period with their replacements.

5.2.3 Recommendations

1. Ensure that there is an adequate handover period for senior L&CA field staff retirements to hand over their responsibilities to their replacements.

5.3 LAND ACCESS AND RESETTLEMENT

5.3.1 Project Strategy

The Project strategy for achieving land access and resettlement is described in the RPF and individual RAPs. The RPF lists the following resettlement principles:

- Avoid and minimize the need for physical/economic displacement through alternatives analysis and siting, alignment and other design modifications (RPF, Sect 2.2, Resettlement Principles);
- Screening, identification and management of social impacts as required complying with the environmental and social management plans that together comprise the ESMS;

- Conduct consultation processes that achieve free prior and informed participation of affected people and communities (including hosts) in decision making related to resettlement and continuing participation during implementation and monitoring/evaluation;
- Compensate people affected by land acquisition for loss of assets at full replacement value;
- Improve the living conditions of physically displaced households;
- Design and implement in a timely manner culturally sensitive and economically sustainable income restoration measures;
- Devise measures to support physical relocation and re-establishment;
- Identify and provide special assistance to people who are especially vulnerable to displacement impacts; and
- Carefully monitor and evaluate to ensure that resettlement measures are meeting the needs of affected people and to identify the need for and implement corrective measures.

5.3.2 Observations

5.3.2.1 RAP Documentation

The RAP documentation strategy agreed with the IESC at the August 2012 working meeting has been effectively implemented. Key developments since the last review included the following:

- The IESC has approved an onshore pipeline RAP covering KP 0-80 - RAP coverage of the onshore pipeline is now complete.
- A draft Angore Access Road and Well Pads RAP has been reviewed and commented on by the IESC and should be finalized very shortly.

These are probably the last RAPs that will be required for Stage 1 Project Construction with the possible exception of a RAP for the Hides spinline. During the October 2012 review, EHL announced that it will route the Well Pad B to HGCP spine line along the existing well pad access road. This could possibly avoid the need for any further resettlement for spine line completion. It will also avoid further impacts on the Hides area which is relatively densely settled and that has already experienced extensive resettlement for the HGCP and associated quarry development.

The status of RAP/CRP documents as of October 2012 is summarized in Table 5-1. The number of RAPs and CRPs produced to date has increased from the 13 originally listed in the RPF to 22.

Arising from the table below, the following actions need to occur:

- Spine line & Well Pad Access Rd C-G CRP and Pipeline KP 0-80 RAP need to be disclosed on the Project website.
- EHL needs to resolve its final position on the Heavy Haul Road (see § 5.3.2.10) and disclose on the Project website a RAP covering those sections of the Heavy Haul Road where physical displacement has already occurred.

Table 5.1: Lender Review and Approval of RAPs (October 2012)

RAP	Received	IESC Reviewed	Lender/IESC Approved	Finalized & Disclosed on EHL website
Komo Airstrip	✓	✓	✓	✓
Hides Gas Conditioning Plant RAP	✓	✓	✓	✓
Hides Quarries 1-3	✓	✓	✓	✓
Heavy Haul Road (for some sections)	✓	✓	✓	No
Komo Airstrip Access Road	✓	✓	✓	✓
Kopeanda land fill	✓	✓	✓	✓
Omati to Kaiam CRP (KP 227-292)	✓	✓	✓	✓
Kaiam to Kantobo CRP (KP 153-227)	✓	✓	✓	✓
Kutubu to Kantobo CRP (KP 80-153)	✓	✓	✓	✓
Kutubu to Moran CRP (KP 65-80)	✓	✓	✓	✓
Paua RAP (KP 59-65.5-59)	Prepared – but now superseded by the Pipeline KP 0-80 RAP			
Timalia Borrow Pit	✓	✓	✓	✓
Hides Quarries 1-3: RAP Addendum 1 (Well Pad B)	✓	✓	✓	✓
Hides Quarries 1-3: RAP Addendum 2 (Quarry Expansion)	✓	✓	✓	✓
Hides Quarries 1-3: RAP Addendum 3 (Spoil dump & extensions)	✓	✓	✓	✓
Hides Quarries 1-3: RAP Addendum 4 Side casting additions	✓	✓	✓	✓
Spine line & Well Pad Access Rd C-G CRP	✓	✓	✓	No
Quarry Area 1 (Tumbi Quarry) RAP	✓	✓	✓	✓
Hides Vehicle Staging Area RAP	✓	✓	✓	✓
Caution Bay CRP	✓	✓	✓	✓
Omati Waterways CRP	✓	✓	✓	✓
Daware Camp & Tugiri Quarry CRP	Prepared but Daware Camp and Tugiri Quarry works did not proceed			
Kantobo to Kutubu Addendum KP 97.5 Laydown	✓	✓	✓	✓
KP 4.5 Camp CRP	✓	✓	✓	✓
Paua RAP	Prepared – but now superseded by the Pipeline KP 0-80 RAP			
Homa RAP	Prepared – but now superseded by the Pipeline KP 0-80 RAP			
Pipeline KP 0-80 RAP	✓	✓	✓	No
Angore Well Pads & Access Road RAP	✓	✓	No	No
Spine line for Well Pad B to HGCP RAP	Potential resettlement requirements still being assessed.			

5.3.2.2 Integrated Rapid Census and Survey

For the Angore and Benaria areas, the Project has introduced an integrated team approach for undertaking a rapid census and survey of access road and pipeline routes as a way of establishing an early cut-off date. A record of site conditions is made by a team comprised of a videographer, the Resettlement team, Environmental Law Centre, and Census & Survey team together with Village Liaison Officers and other community representatives. The Community Support team has also been involved in introducing some early community development initiatives. This has facilitated reaching consensus with communities on what are speculative or opportunistic structures versus legitimate assets for compensation. More significantly, the condensed process appears to help communities better understand the nature of project impacts, the resettlement process and reach earlier agreements at household and clan level. Clearly this integrated approach should be considered for all future land access negotiations.

5.3.2.3 Management of Change – Need for RPF Update

Resettlement processes have evolved and changed significantly during the past three years. These changes have not been reflected in the RPF. As the RPF will be in force for the life of Project loans, it is probably timely to consider implementing a Management of Change process for the RPF to reflect current best practice. This should occur before the current Resettlement team is demobilized. Specific areas where resettlement practice has deviated from the RPF documentation noted by the IESC include (but are not limited to):

- Disbursement of compensation – direct payments to compensation beneficiaries instead of payments into a ‘bank managed fund’;
- Transitional support - means-tested option for payment of cash in lieu of rations delivery;
- Clarification of ‘external monitoring’ arrangements; and,
- Up-dated list of RAPs and CRPs.

EHL has made a concerted effort to make banking services more accessible to families receiving compensation. This has proved difficult given that provision of savings bank services in remote rural areas is not a profitable activity for PNG commercial banks. Payment of compensation through banks has proved to have more disadvantages for beneficiaries than benefits. Some of the reasons for this include:

- Remoteness of many communities from banking facilities;
- Very high transaction charges by banks or their local agents (e.g. sometimes as high as 10% on each withdrawal);
- Difficulty for beneficiaries to understand mechanics of banking arrangements; and,
- Difficulty of adequately notifying or informing beneficiaries when payments can be drawn down.

Delivery of monthly rations is logistically very demanding for the Project. Observation suggests that a substantial volume of the rations end up for sale in local markets, i.e. are converted to cash. In the opinion of the IESC, payment of cash compensation in lieu of delivery of rations is acceptable where the household is able to demonstrate one of the following:

- 1) The household is readily able to obtain in-kind crops or foodstuffs from local markets (i.e. markets are accessible and stock staple foods; and, household members are physically able to get to the market, i.e. not vulnerable); or,
- 2) The household has sufficient productive garden area unaffected by the Project to meet its subsistence needs.

In the view of the IESC, the IESC’s thrice yearly reviews of resettlement activities and management systems could be construed as meeting the RPF requirement for ‘external monitoring’. This would be consistent with the practice on other large infrastructure projects with multilateral or Equator Principles finance, for example: Chad-Cameroon pipeline and the BTC pipeline. The RPF could be amended to reflect the role of the IESC as an external resettlement monitor.

5.3.2.4 Operations Phase Land Access Planning

An Operations Phase Pipeline Right of Way Management Plan has been completed with integrated inputs from all L&CA functional areas. This document has the potential to be the foundation for an Operations phase ESMP for the pipeline.

5.3.2.5 Replacement House Delivery

All committed house construction has now been completed, with the exception of one landowner who has been unable to decide on the location where he wants his house built.

5.3.2.6 Water Structures Delivery

See Section 5.6.2.

5.3.2.7 Phase 1 Physical and Economic Displacement

Table 5-2 provides Resettlement team estimates of Phase 1 (2010-2014) physical displacement as of October 2012. Bracketed figures indicate estimates provided in the October 2009 RPF. Economically displaced household numbers have been deleted from the table as they are difficult to compare with earlier estimates due to changes in categorization.

Table 5.2: Updated Project Estimate of Phase 1 Physical and Economic Displacement

Project Facility	Description	Area	RPF Estimate of Physically Displaced Households (Oct 2009)	Best Estimate of Actual Physically Displaced Households up until October 2012	Variance
		Ha	N	N	N
Komo airstrip	-	522	24	29	+5
Komo access road	-	-	Not in RPF	15	+15
Facilities	Including: HGCP, Kopi facilities, Juni training facility	327	63	57	-6
Pipelines	Pipeline and spine lines based on 30 m corridor	1,136	50	113+TBD	+63
Well pads + access roads	Hides well pads: A, B, C, D, E and G and access roads	173	TBD	27	+27
Heavy Haul Road	Based on 50 m corridor	522	253	78	-175
Quarries	Includes roads & support infrastructures	128	55	39	-16
Landfill	Hides & Gobe (TBD)	54	15	38	+23
HDD	Tagri, Mubi, Wah and Kikori	31	5	-	-5
Camps	NA	111	TBD	25	+25
Hides spoil dumps	NA		Not in RPF	16	+16
HVSA	Hides Vehicle Staging Area		Not in RPF	11	+11
Logistics Road (new)	Alternative to HHR		Not in RPF	1	+1
Angore Access Road and Well Pads	Access road improvements, new alignments & 2 well pads		Not in RPF	58	+58
Total		3,079	465 (+TBD)	507 +TBD	+42

Note: The table is based on physical data provided by the EHL Resettlement team up until February 2012.

5.3.2.8 Top-up Payments for Trees and Crops

The Resettlement team will commence making compensation top-up payments to achieve full replacement value (PS 5 requirement) during the first half of 2013. As there are now well over 6,000 extant compensation agreements, this is a not insignificant logistical undertaking. Resources to undertake this work should be considered as part of Resettlement team forward planning. EHL proposes undertaking such

payments in a low-key manner over a relatively extended period of time so as to avoid generating new expectations. A schedule for this activity should be prepared for IESC monitoring purposes.

5.3.2.9 Resettlement Monitoring and Reporting

The Resettlement team has established a schedule for internal monitoring reviews. Useful and perceptive internal reports are being regularly generated. In the Upstream area, positive monitoring findings presented to the IESC included resettled families perceptions of improved food security and nutrition, and improved access to employment and transportation. Negative findings included the large proportion of families that considered themselves worse off in terms of access to water (88% of families considered they were worse off; 12% better off), schools (58% worse; 27% same; 15% better off) and medical clinics. Reduced access to schools had multiple causes. Some were related to the Project (e.g. teachers left for Project jobs, physical distance post-relocation). Others were not (e.g., clan vandalism of the school; clan land tensions closing access to the school; lack of government capacity). See further discussion in Section 5.3.2.11

5.3.2.10 Heavy Haul Road

A number of complaints have been received related to the cessation of work on the heavy haul road:

“Now we see that for no good reason the Project cleared our forest and moved/displaced us. Now, nothing has happened on the heavy haul road for 2 years. We have not received any response to queries. We are frustrated.”

“The Project promised to build the heavy haul road, but that is not happening. We signed a Local Benefit Sharing Agreement with the Government based on the Project building the heavy haul road and the people benefiting from the rent. If the Project decides to abandon the heavy haul road, it will cause problems. Can the Project please tell us what is happening?”

It is time for the Project to provide local stakeholders with clear information about its intentions with respect to the heavy haul road. This needs to include:

- Clarification of the status of the heavy haul road right of way – have IPCA and resettlement agreements been lodged with the DPE?
- Clarification as to what land-uses can be resumed in the heavy haul road right of way - are resettled landholders able to re-occupy their original land? What is to become of any third parties that may have occupied the land in the interim?
- Clarification of arrangements to be reached with the parties (clans and individual families) at each stage of land access/resettlement negotiations (e.g. those who have signed resettlement agreements and been compensated; those whose assets have been subject to census and survey, but with whom the project has not finalized an agreement; etc.), taking into account any costs, foregone opportunities or inconvenience that each party might have experienced as a result of Project resettlement activities.

The principle that families should not be left worse off as a result of Project activities should be applied.

EHL has advised that it is considering a Community Support type initiative or initiatives to offset the inconvenience experienced by households living along the proposed heavy haul road route. Where applicable⁷, these initiatives should be designed and implemented by the Community Support team taking into account local community needs and preferences. The IESC would caution against embarking on further civil works projects in this regard.

Resolution of this issue is occurring near the end of Project land access and resettlement negotiations. There is a strong likelihood that it will be seen as a last opportunity to leverage benefits from the Project. It is recommended that the process of negotiating an exit should begin sooner rather than later.

⁷ Community support-type measures might be applicable to offset inconvenience experienced by the community in general. They should not be used to address losses of assets or livelihoods specific to individual families.

5.3.2.11 Replacement Community Infrastructure

The IESC walked a substantial section of the perimeter road around the southern edge of the HGCP. Completion of the HGCP perimeter road has been hindered by local blockages. This road should be completed by the Project as soon as landowners permit.

Access issues caused by the Komo airstrip construction are still far from resolved. The 3.2 km long airstrip is a significant impediment for families living to the east of the airstrip in reaching the market, school, health clinic and churches of Komo Station. Resettlers at Emberali have complained about the hardship they face in trying to evacuate the sick or incapacitated to the clinic at Komo.

In March 2011, the IESC was told that joint funding (government and EHL) for a road to access households to the east of Komo airstrip had been agreed. No road has materialized.

The IFC PS 5 objective is “...to improve living conditions among displaced persons through provision of adequate housing... at resettlement sites”. The PS 5 Guidance Note (para. G6) provides the following clarification on what is meant by this:

“Adequate housing should allow access to employment options, markets, and basic infrastructure and services, such as water, electricity, sanitation, health-care, and education.”

It goes on:

“Clients should include one or more of the aspects of adequate housing in this paragraph [listed above] in order to offer improved living conditions at the resettlement site”

Resettlers at Emberali and other families on the eastern side of the airstrip are left significantly worse off in terms of their access to markets, services, health care and education. The Project needs to make a more concerted effort to improve the situation of these families. The access track built to date that extends to the south-eastern corner of the airstrip is only partially fulfilling these families’ needs. A more comprehensive solution is needed. This needs to be either construction of a road as was envisaged in the joint funding agreement with the government, or some alternative measure. The IESC will be looking for a firm commitment to resolve this issue during its next review.

RAP Monitoring and Evaluation team findings in the Upstream area point to a majority of resettler households perceiving themselves to be worse off in terms of access to schools and health facilities. As has been discussed in previous IESC reviews, these problems are multidimensional and effective interventions are not easy to conceive or implement. Solutions will require partnering with the government, broad support of clan landowners and communities, and will often need to be implemented incrementally over long periods. In designing its next phase of Community Development Support projects, EHL should remain mindful of its IFC PS 5 obligations regarding provision of ‘improved living conditions’ particularly through improving access to schools and health care in the Hides - Komo area. The Community Services team has commenced some projects towards this long term goal.

5.3.2.12 Vulnerable Households

The IESC met with two vulnerable families at Hides. Each had been provided with superior replacement housing and livelihood assistance. Both household heads were positive about their immediate outlook. The vulnerable people team is functioning effectively both in monitoring and assisting earlier resettlers and in assessing and addressing the particular needs of current resettlement.

5.3.3 Recommendations

1. Disclose the following on the Project website:
 - Spine line & Well Pad Access Rd C-G CRP;
 - Pipeline KP 0-80 RAP; and,
 - Heavy Haul Road RAP for Komo section (Section 2) where resettlement has in fact been undertaken.
2. Using MOC, update the RPF to reflect current resettlement policies and practices.
3. Prepare a schedule for compensation top-up payments for IESC compliance monitoring purposes.

4. Provide clear information to clans and families affected by the Hides heavy haul road about the Project's intentions with respect to the road construction and closing out of any remaining compensation and resettlement obligations.
5. Follow up with the government the agreement to jointly fund construction of a road to service families living to the east of the Komo airstrip and prepare a time-bound action plan for the delivery of the road by the time of the next IESC review.
6. Examine potential Community Development Support initiatives targeting improved access to education and health care in the Hides - Komo area as part of the next 5-year plan to meet IFC PS 5 obligations to offer resettlers 'improved living conditions'.

5.4 RESETTLEMENT INDEPENDENT ADVOCATE

5.4.1 Project Strategy

EHL has retained the Environmental Law Centre to act as an independent advocate on behalf of displaced people and to ensure displaced people are fully informed about the resettlement process as well as their rights and obligations. The ELC team includes a former Chief Commissioner of the Land Titles Commission and a former magistrate highly experienced in complex land cases. Both these team members are actively involved in PNG LNG field work.

5.4.2 Observations

The IESC met with ELC as part of its October 2012 review. Matters discussed with ELC included the following:

- Effectiveness of the integrated approach to land access consultation, disclosure and agreement negotiation and, in particular, the value of addressing IPCAs (In-Principle Compensation Agreements) at the same time as resettlement agreements;
- Importance of the IPCAs as a first step towards the formation of Incorporated Land Groups; i.e., it is critical that robust and transparent procedures are followed to develop the list of clan members⁸ and to appoint agents to act on behalf of clan members with respect to the IPCA; and,
- Importance of locally disclosing IPCAs (In-Principle Compensation Agreements) prior to signing as part of verifying that broad consultation had taken place and to give any disputing parties the opportunity to object or seek reconciliation.

The IESC strongly concurs with the view that the IPCAs and resettlement agreements should be addressed concurrently as they both relate to securing rights of access to land and impose obligations on the clan landowners. For future Project stages, it is strongly recommended that the IPCA and resettlement negotiation processes be run in parallel.

5.4.3 Recommendation

1. For future Project stages, give strong consideration to running IPCA consultation, disclosure and agreement negotiations in parallel with other land access and resettlement negotiations, with equivalent emphasis on local disclosure.

5.5 LIVELIHOOD RESTORATION

5.5.1 Project Strategy

The livelihood restoration strategy is described in the RPF and component-specific RAPs. Key elements of the strategy include:

- Delivery of weekly food rations or cash equivalent to ensure household food sufficiency for a nominal nine month or six-month period, in the case of linear routes, while food gardens are re-established;

⁸ Formation and disclosure of such a list is also a requirement of the Land Group Incorporation Act 1974.

- Agricultural extension services, a tool package and supply of pathogen-free sweet potatoes to facilitate re-establishment of food gardens and food sufficiency;
- Technical assistance to help resettlers to develop cash earning activities and enterprises; and
- Provision of Compensation Advisor to assist and to advise on compensation investment and business options.

5.5.2 Observations

The resettlement livelihood programs have now been transferred to be under the Community Support team. This is a logical place for them to reside, provided it is remembered that the Project has a specific obligation under IFC PS 5 to give physically and economically displaced households the opportunity to restore their livelihoods. This obligation is over and above the Community Support team's wider remit to foster the development and maintenance of stable operating conditions for the Project.

The RAP Monitoring and Evaluation team presented some positive findings regarding resettled families perceptions about their food security and nutrition in the Project Upstream area. These indicated that 44% of families considered that their food security and nutrition had improved, 29% considered it had stayed the same and 27% that it had deteriorated. Wages employment and increased opportunities for informal trading were seen as contributory factors, in addition to Project livelihood restoration assistance. The former factors are temporary and therefore not necessarily sustainable. Reasons for the deterioration in food security/nutrition of the 27% of households should be explored.

Livelihood programs were observed being implemented in the Homa-Paua area and in the early stages of being rolled out in Angore and Benaria. As in other locations, the programs were observed to be well received.

At the time of the IESC visit, the Women's baking and food processing program at Paua was generating a lot of interest both by participants and interested customers. In some instances, the program has provided a vehicle and common interest for women from opposite sides of clan conflicts to meet and interact. In so doing, the program has potentially made the first steps towards broader reconciliation. Some men had also been accepted into the baking group which is challenging traditional gender roles. At this stage of resettlement, the baking and food processing program continues to deliver substantial social benefits.

The fisheries livelihood programs for Omati and Caution Bay are progressing steadily. There have been some minor setbacks with localized demands for payment to attend training. The IESC was pleased by the linkages that are being established with national programs and institutions (e.g. University of the PNG, National Fisheries Authority) and closer cooperation with provincial governments. Synergies between Community Development Support and Biodiversity interests are starting to be more clearly defined.

As has been previously commented, the agricultural livelihoods program potentially has an important role to play at the time of workforce demobilization. Around this time or shortly after, as any savings are used up, demobilized workers will be faced with a need to return to subsistence agriculture. Agricultural extension activities might usefully be re-offered in the period following demobilization, particularly in Hides and Komo.

5.5.3 Recommendation

1. Consider re-offering selected agricultural livelihood services to coincide with the period following demobilization as a measure to revitalize interest in agriculture.

5.6 COMMUNITY IMPACTS MANAGEMENT

5.6.1 Project Strategy

Project commitments related to community impacts management are contained in the Community Impacts Management Plan and the Community Health and Safety Management Plan. Some key provisions of these plans are as follows:

- *“where practicable minimize routing construction traffic through villages, past schools camps close to project sites”;*
- *“limit pedestrian interaction with construction vehicles, etc.)...”;*

- “collaboration with local communities and responsible authorities...to improve signage, visibility and overall safety of roads, particularly along stretches located near schools or other locations where children may be present”;
- “collaboration with local communities on education about traffic and pedestrian safety (e.g. school education campaigns)”;
- “employing safe traffic control measures, including road signs and flag persons to warn of dangerous conditions.”

Community safety is defined in terms of community awareness programs, as well as work protocols designed to minimize potential community impacts. Procedures are defined in the Community Health and Safety Management Plan and the Community Health, Safety and Security Management Plan in terms of defining procedures for community interaction in terms such as community awareness programs. In terms of defining Project procedures to protect the public is the Journey and Traffic Management Procedure, which defines the procedures for managing truck traffic.

5.6.2 Observations

The IESC had two principal ‘community impacts’ observations arising from the October 2012 visit. These related to the following issues:

- Safety and amenity of resettler families who were unfortunate enough to relocate along what is to become the access road to the Spiecapag Camp 6; and,
- Ongoing water management and exit strategy.

5.6.2.1 Camp 6 Entrance Safety

Spiecapag has recently confirmed the location of its Camp 6, to the south of Homa. Along the entrance road to the camp are several dwellings, some of which are resettled families from the PNG pipeline construction. These people had settled in the location without knowing that it would later become a camp. The Project should ensure that (i) households are consulted about the camp and potential impacts on their quality of life; (ii) households are given options to mitigate or offset the adverse impacts that they will experience. Such options might include construction employment, opportunity to set up a stall near the camp entrance, transitional support to allow the family to temporarily relocate during the period of camp operations, or as a last resort, a full compensation package to enable the families to resettle a second time away from the camp site. The IESC will verify (i) and (ii) during its next review.

5.6.2.2 Water Impacts Management

Complaints related to water remain the most frequent type of complaint. Some of these complaints are from families or communities angling for a water tank, but many arise from genuine problems with water supply. As has been observed in previous IEC reports, water issues are multidimensional and stem from:

- Impacts of construction (e.g. blocked streams, dried springs, turbidity/sediment release into water courses);
- Indirect impacts such as those caused by in-migration and localized increases in population density (e.g. increased demand for water, increased pollution load including E. coli);
- Aspirational (e.g. wish to benefit from the improved supply and convenience of a water tank).

The IESC is not convinced that the Project is yet at the ‘exit’ point in terms of its obligations with respect to mitigating construction phase impacts on water. The IESC is aware that communities such as Emberali claim to have experienced downstream impacts from the Komo airstrip (which may be temporary or long term) and yet have not been investigated by the Project. The Komo CIC also noted that at the north end of the air strip, there are more than 1000 people reliant on 2 water tanks, which in their opinion were insufficient. In the Hides and Komo areas, it might be useful to have some-one removed from the water projects undertake a review of ‘demand’ and ‘supply’ i.e. (i) map the catchments of water courses and springs that have been severed or suffered from changed flow or quality; (ii) identify the affected population and its reasonable water need (‘demand’); (iii) assess the locations and accessibility (including social accessibility) of project supplied water infrastructure (‘supply’); and, (iv) identify any gaps. The Community Development Support team should be involved in developing the water exit strategy.

The critical lesson for pending project construction in greenfields areas such as Angore and Benaria is that a thorough inventory of existing water sources used by communities should be undertaken prior to construction commencement. It might also be preferable if the business of supplying and installing water infrastructure can be divested to a Lanco or local businesses, so that EHL does not become the focus of all water hopes and demands.

In the longer term, as part of its exit strategy, the Project might support one or more of the Lancos to become local suppliers of water tanks.

5.6.3 Recommendations

1. Undertake a water demand and supply review in the Komo-Hides to identify any gaps in the Projects coverage.
2. Involve the Community Development Support team in the design of an exit strategy.
3. Look at ways to facilitate local supply of water tanks by others, such as Lancos.

5.7 COMMUNITY SECURITY

5.7.1 Project Strategy

The Project's security strategy insofar as it pertains to project social performance is described in the EHL Community Health Safety and Security Management Plan. The Operator also has a Project Security Management Plan, although the latter document is outside the scope of the IESC review. Key tenets of the Project security strategy include the following:

- The philosophy underpinning Project security is 'community partnerships';
- Security works closely with L&CA which is responsible for frontline community liaison and interaction;
- The Project is committed to adherence to the Voluntary Principles for Security and Human Rights
- There are no armed private security personnel on the PNG LNG Project and there are no plans for such deployment;
- If any armed support is deemed necessary, such support will be provided by the PNG government through the police;
- EPC Contractors are responsible for providing their own security at their particular sites of responsibility in accordance with ExxonMobil standards, as reflected in the above Framework, and under the guidance of the ExxonMobil security team; and
- EPC Contractors may not directly communicate with the Royal Papua New Guinea Constabulary (RPNGC).

5.7.2 Observations

Project construction is now moving into some of the more challenging areas from a security perspective. The pipeline route from Homa-Paua northwards is characterized by a history of land disputes and tribal conflict. The Angore area, in particular, has experienced frequent tribal fighting since the mid-1990s claiming more than 50 lives. The Project has worked hard to involve the DPE, Hela Province Police Command and local leaders in developing a strategy prior to commencing land access negotiations. Project engagements with communities have also helped clarify key issues that need to be addressed to facilitate settlement of the lands dispute, promote peace and good order and enable resettlement and construction to proceed.

The Security team has commenced planning for transition to operations.

5.7.3 Recommendations

1. None arising from the present review.

5.8 PROJECT INDUCED IN-MIGRATION

5.8.1 Project Strategy

The Community Support Strategy gives the following examples of potential adverse environmental, social and community health impacts from in-migration:

- Increased pressure on basic infrastructure and services of host communities;
- Increased competition for training and employment;
- Increased crime and violence in host communities;
- Increased prostitution and substance abuse;
- Health issues and problems with STI (sexually transmitted infections) and other diseases;
- Pregnancies outside of established relationships;
- Alcohol abuse and domestic violence;
- Ethnic tension;
- Erosion of cultural institutions; and
- Increased environmental degradation.

The CSS commitment was to undertake an in-migration risk assessment and an assessment of associated environmental and social impacts.

The Project also made the following commitment in the Labor and Working Conditions Management Plan:

“The Project shall discourage in-migration of persons in search of employment opportunities. As a minimum:

- *implement and publicize the recruitment procedure which gives preference to local applicants;*
- *recruit through Lancos who know all the persons living in their local area;*
- *communicate to the community the recruitment procedure which requires applicant’s place of origin to be identified;*
- *communicate to the community sufficiently specific job descriptions so those without the necessary skills are less likely to apply; and*
- *actively assess, via monitoring or other means, in-migration to determine extent and relationships with workforce. If a positive relationship is evident, review hiring arrangements (e.g., worker rotations) or other measures that may act as disincentives to worker families who might otherwise move to the work location (ID 23.027).”*

5.8.2 Observations

Typically, changes in influx population follow quite closely trends in project workforce. As the construction workforce is demobilized, many in-migrants are also like to disperse back to their original locations or wherever they perceive the next economic opportunities to lie. The IESC has previously expressed its disappointment at EHL’s failure to develop plans to proactively address in-migration impacts. The next opportunity for EHL to get a measure of the extent of population influx impacts will arise from the findings of the iDHSS baseline findings. Satellite imagery monitoring should also assist with identifying in-migration hot-spots (e.g. clearing, land use change, change in settlement pattern and increases in dwelling numbers). Once completed, these studies should provide some clear opportunities for EHL to initiate activities for in-migration impact mitigation.

PIIM Management Plans commit to extensive monitoring. EHL needs to provide a schedule for monitoring activities and reporting. The IESC looks forward to reviewing the first PIIM monitoring report or reports.

5.8.3 Recommendations

1. Use iDHSS findings (once completed) and satellite imagery monitoring to identify PIIM impacts and as a basis for considering PIIM impact mitigation.
2. Provide a schedule for PIIM monitoring and reporting.

5.9 PROCUREMENT AND SUPPLY MANAGEMENT

5.9.1 Project Strategy

The Project strategy is described in the Procurement and Supply Management Plan. The plan states that division of responsibility between EHL and its contractors (and its subcontractors) is either stated in the Procurement and Supply Management Plan or will be defined in Contractor Implementation Plans to be prepared by the contractors. Objectives with respect to procurement and supply are stated as follows:

- Maximize project procurement from local suppliers and economic benefits for local businesses;
- Improve capacity and skills of local business to capture business opportunities associated with the project both locally and nationally; and
- Ensure that Project environmental and social standards and commitments are adequately communicated by the contractor to its subcontractors and suppliers and included in their contractual arrangements.

5.9.2 Observations

The presence of the PNG LNG Project has clearly resulted in a steep increase in the employment of PNG nationals and in a rapid engagement of local businesses and suppliers. The Project has passed its peak in 2012 and the increase in national workforce numbers is de-accelerating as some EPCs are demobilizing. The demand for national workforce employees is also falling as demand for specialized skills increases throughout the Project, although the extensive national training programs that have been in place for several years will arrest this trend to a significant degree. The following sub-sections review the three elements of the Project strategy.

5.9.2.1 Extension of Project Environmental and Social Standards to Subcontractors/Suppliers

An issue that was still on the radar with respect to procurement and supply is extending Project stewardship to organizations and facilities primarily dedicated to serving the Project. The IESC had recommended for the Project to work on capacity building and skills development on workers' rights, worker-management relations, etc. for the Project's supply chain. Consequently, IBBM had developed and delivered a training course on human resource management and industrial relations in February this year, with attendees from EHL, EPCs, from the main umbrella Lancos - LABA and HGDC, and from DLIR.

Since March, the IBBM Business Center has developed additional training modules on labor and other social and environment aspects of running a business. These developments are substantially contributing to building capacity among the Project's local supplier base to meet international standards. The Center is now providing training on Human Resource Management, on Employee Relations/Industrial Relations, and on ISO standards on for example Occupational Safety and Health, Quality Management, food safety, auditing etc.

IESC welcomes these developments, but continues to recommend building specifics into IBBM's assessment criteria of new PNG suppliers to the Project to verify compliance with IFC PS2, more concretely verifying the existence of any child or forced/bonded labor practices⁹. Eventually such a ranking process should lead to exclusion of such suppliers from the Project supply chain.

As noted in Section 3.2.2.2, one area where EHL has fully rolled out environmental and social stewardship is with respect to quarry activities undertaken by subcontractors. During this field visit, a tour was made of the Tagari Borrow Pit near Hides operated by Cisco-Holloman and activities found to be consistent with ESMP requirements.

⁹ Child labor does not refer to instances such as children helping their parents out with a bit of hands on work, but to systemic employment of children, keeping children away from education and endangering their physical and psychological development. Whereas forced and bonded labor practices, next to sheer slavery, include the more subtle manifestations, such as withholding ID papers from migrant workers, workers indebtedness to employer, forced and/or unpaid overtime, intimidation on the work floor to enforce labor etc.

5.9.2.2 Project Procurement from Local Business

Total Project in-country expenditures as of October 2012 now total PGK 5.7 billion (\$2.7 billion), of which PGK 1.29 billion (\$620 million) was spent on Lancos. Lancos referred to in the above spend include: LABA, LABA Alliance, HGDC, Kutubu Security Services, Mananda Umbrella JV, GFS, GFE, Kutubu Security Recruitment Services, Kawaso, KOI, KCL, CIVPAC, MAKI Investment Corp, Komo UJV, and others. Whereas EHL expenditures also include non-Lanco procurement such as air transport, office and residential accommodation, staff recruitment and training, etc., EHL's commitment to improve local business is reflected mainly in the use of Lancos that supply labor and various services to the different EPC Contractors. The success of this approach is reflected in the national workforce as discussed in Section 6.2.2.2.

5.9.2.3 Capacity and Skills Building of Local Business

EHL indirectly supports PNG businesses - including Lancos, through the IBBM Enterprise Center. This Center, a direct initiative of the PNG LNG Project, aims to link PNG suppliers with the Project and building capacity among such suppliers. Its Supplier Dashboard offers a transparent means to PNG businesses to identify and access Business Opportunities. As of October the Center had provided 271 Business opportunities from major construction contractors, EHL or sub-contractors to PNG suppliers; 135 Service types, 103 Material Purchase types, and 33 Rental types.

The Center carries out business assessment based on the following criteria: Organization and Governance, Operations, Financial and Human Resource Management, Inventory and Quality Control, Safety, Health and environment, Quality, Citizenship and Reputation. As described above in Section 5.9.2.1 this is where the Center progressed considerably in 2012 in terms of delivering training on labor and other social and environment aspects of running a business.

The Center issues a Star-rating to assessed companies varying from business that require intensive or a normal level of supervision to businesses that have the capacity to deliver in an autonomous manner. The Center annually issues an Assessment Brochure with Profiles of PNG owned companies. The Center also provides training and mentoring services to PNG businesses, facilitates access to finance and networking events through seminars and workshop with EHL, Contractors, Lancos and the public sector.

As of October 2012 the Center has delivered 6000+ training days and 861 business advisory days to 14,000+ entrepreneurs, which translates into 1-in-3 adults in PNG.

5.9.3 **Recommendations**

1. Review processes for verifying the lack of child and forced labor practices within the Project supply chain, especially for (new) PNG suppliers (repeat recommendation).

5.10 **COMMUNITY SUPPORT STRATEGY**

5.10.1 **Project Strategy**

Project commitments related to community development support are described in the Community Support Strategy (CSS).

The overriding objective of the CSS is stated as to promote the development of conditions conducive to enhancing the livelihoods of PNG communities, thereby fostering the development and maintenance of stable operating conditions for the Project. From a compliance perspective, the objective is to meet local regulatory requirements and IFC PS7. Associated requirements for the project are expressed as follows:

- Engage in effective, transparent and culturally appropriate community consultation;
- Build trust between the Project, community members and other stakeholders;
- Manage community expectations;
- Develop appropriate capacity with community development skills and experience;
- Mobilize core competencies to support the facilitation of community development support;
- Set measurable goals and progress reporting;
- Forge strategic partnerships; and
- Maximize sustainability to extend impacts beyond the project involvement.

The Community Development Support Plan (CDSP) identified the following objectives:

- Avoid or reduce the risk of adverse social impacts on PNG communities during Project construction and production; and
- Provide opportunities for sustainable development benefits in a culturally appropriate manner.

The implementation outcomes defined for the CDSP were that it would mitigate business risk as well as contribute to improvements in:

- The ability of communities affected by The Project to anticipate, understand and deal with potential harmful effects;
- The ability of communities to take advantage of positive opportunities afforded by The Project, including increased local economic activity; and
- Self-reliant livelihoods.

5.10.2 Observations

The Community Development Support Program is continuing to progress steadily and is starting to make some in-roads in the Hides and Komo areas. The early introduction of Community Development Support activities as part of land access negotiations in Angore and Benaria appears to have contributed to local goodwill and willingness to engage with EHL.

The Community Support team was focusing on the following:

- Ensuring that the roll-over of Community Development Support activities to the Operations/Production phase is effectively managed, including provision of training to Operations management on Community Development Support functions;
- 5-year forward planning and budget setting (in accordance with ExxonMobil internal planning processes); and,
- Developing exit strategies and replacement activities for current Community Development Support activities.

The next milestone for the Community Support team is the third party, mid-term review. This needs to be got underway promptly as it is already occurring late in the construction phase Community Development Support program. The review will provide valuable guidance to the Community Support team on the efficacy of its current programs and recommendations to improve their effectiveness. It will also provide useful information to inform EHL's five-year community's development support program design.

The current Community Development Support Plan finishes at the end of 2013. Consideration needs to be given to determining what documentation will be prepared under the Community Support Strategy to define EHL's community support commitments under the Operations Phase ESMS. So far as possible, this should reflect EHL's own 5-year forward planning cycle and not lead to un-necessary duplication of effort.

The IESC had a further meeting with the Komo Community Issues Committee (CIC) and found that this was functioning less effectively than during the previous visit. The CIC expressed a view that they are not being taken seriously by EHL, and noted that some members have deliberately boycotted meetings as an expression of how they feel. There is a need for EHL to provide senior representation on the Komo CIC to take over from the mid-level EPC manager that currently represents the Project. The CIC is looking for an EHL representative that can speak and make commitments on behalf of the Project. The IESC has previously observed that the CIC can potentially be an important moderating influence and conduit for communications with local communities.

5.10.3 Recommendations

1. Using EHL's own Community Development Support planning cycle and documentation, start developing an operations Community Development Support Plan to define EHL's community support commitments under the Operations Phase ESMS.
2. Identify a senior EHL Manager to represent EHL on the Komo CIC.

5.11 STAKEHOLDER ENGAGEMENT AND CONSULTATION

5.11.1 Project Strategy

Project commitments with respect to stakeholder engagement are contained in the Company Stakeholder Engagement Plan and the Community Engagement Management Plan. The Project's stakeholder engagement goals as expressed in that plan are as follows:

- Achieving the Project objectives while respecting the needs and issues of stakeholders as they relate to potential project impacts;
- Developing and maintaining constructive relationship with stakeholders, striving for mutual understanding, respect and collaboration; and
- Establishing and maintaining coordinated, internal processes for stakeholder engagement and issues management.

The stakeholder engagement goals above are based on a guided by the following principles:

- Providing clear, factual and accurate information in an open and transparent manner on an ongoing basis to stakeholders through free, prior and informed consultation;
- Providing sufficient opportunity to stakeholders to raise issues, to make suggestions and to voice their concerns and expectations with regard to the Project;
- Providing stakeholders with feedback on how their contributions were considered;
- Building capacity amongst stakeholders so as to enhance their ability to interpret the information provided to them;
- Treating all stakeholders with respect, and ensuring that all company personnel and contractors that have contact with stakeholders do the same;
- Responding to grievances and requests for permission in a timely manner; and
- Building constructive relationships with identified key and influential stakeholders through personal contact.

5.11.2 Observations

IESC discussions with communities neighboring major facilities highlighted a need for more attention to 'outside of the fence' community preparation for workforce demobilization. The IESC queried the Komo CIC and women groups in Boera and Porebada about whether they had given any consideration to the impacts of workforce demobilization. The answer in each case was 'no', but animated discussion of the issue quickly ensued. EHL needs to be more proactive in promoting dialogue within communities on this subject.

As noted in the March 2012 report, the Stakeholder Engagement team has an important role to play in making communities aware of the timeframes for demobilization as well as the anticipated impacts on families and communities. Reference should be made to the IFC Good Practice Note on Managing Retrenchment on the kinds of support that can be offered. Community engagement needs to form part of the global project workforce demobilization strategy.

The design of a program for disseminating information to landowners about safety and land-use restrictions along the pipeline route was progressing well.

5.11.3 Recommendations

1. Place greater focus on developing 'outside of the fence' awareness and dialogue about the challenges communities will face during the workforce demobilization.

5.12 GRIEVANCE MANAGEMENT

5.12.1 Project Strategy

The Project's third-party grievance procedure is described in Section 10 of the Stakeholder Engagement Plan. Grievance numbers form part of the KPIs for the following management plans:

- Community Impacts Management Plan;
- Community Infrastructure Management Plan; and

- Camp Management Plan.

Lender performance standards for grievance management are defined in IFC PS1, paras. 23 and 26; IFC PS4, para. 13; IFC PS5, para. 10; and IFC PS7, para. 9.

5.12.2 Observations

The grievance management system is working satisfactorily. The number of grievances received in Q3 2012 (n=109) was slightly below the quarterly average for the previous year (121 complaints/quarter). A concerted effort had been made to close out the backlog of grievances. The Project was meeting or exceeding its internal target to close 75% of complaints received within 30 days. Efforts to publicize complaint avenues are continuing.

Examples of Some Recent Grievances

Complaints are taken verbatim from the grievance log. Details have been omitted to protect the privacy of complainants. The fact that a complaint has been expressed should not be interpreted as proof that there are substantive grounds for the complaint.

Complaints related to Project activities and accidental damage:

- *“Grievant complained that side-casting and mudflow from the spine line near well pad Y damaged their food garden. The grievant is seeking compensation.”*
- *“Grievant had house roofing material (‘kunai’) blown off during the landing and take-off of a project helicopter near the KKK camp helipad. This is the second time this has happened.”*
- *Grievant complained that a large rock fell from the XXX quarry site, rolled down the hill, crossed the main road and crashed into his garden. The complainant wants his garden assessed as it is prone to side casting from the quarry.”*
- *“Grievant complained that 2 of her houses will have to be relocated from the entrance of Camp 6 because of the volume of traffic that will come in and out of the camp.”*

There had been extensive census and survey activity in the preceeding 4 months so some complaints about assessment are inevitable:

- *“Grievant from XXX complained that his improvements in the vicinity of XXX quarry had not been assessed by the Census and Survey team. He specifically mentioned orchids, salad plants, and a mumu pit including some skulls.”*
- *“Grievant from YYY complained that Kunai grass (valued as traditional roofing material) was not recognized for compensation and was omitted from his compensation package. He has requested a re-assessment and payment of compensation.”*

Complaints about water continue:

- *“Complainant’s village (near Komo airstrip) drew IESC’s attention to dirty and muddy water making it unfit for use in March 2012. Creek is still unfit for drinking or washing and laundry. Complainant is again raising this issue.”*
- *“Complainant lives about 1 km downstream from YYY quarry. The quarry is the source of the creek that the complainant’s family uses for drinking, cooking, etc. The creek water has become discolored. The complainant has asked for a rain catchment tank at least as a temporary measure.”*
- *“YYY creek now has foam in it. We would like you to aid us with whatever you are giving everyone else.”*
- *“Three of our water sources are spoiled. 20-30 houses rely on these. We need a tank.”*

Complaints about not getting employment or being demobilized from a Project job are common:

- *“Grievant wants his son to be employed as a fisheries assistant with the team conducting fisheries surveys in the XXX River.”*
- *“Complainant asked why was he demobilized and sent back to his home village. The complainant believes that he should have been retained to keep his people briefed about what activities were being undertaken each day on the LLL. He claimed that his presence on the work site helped defuse many landowner concerns and potential work disturbances.”*
- *“We were informed by our trainers at Juni Training Facility that we will be employed by EPCX immediately after our graduation. Now 31/2 weeks have gone by and it looks like we were told lies. When we rang our training manager, he told us to go to HDGC, but HDGC told us that there were no documents in place for our employment. How long will we be kept in suspense?”*

5.12.3 Recommendations

None arising from the present review.

6 LABOR AND HUMAN RESOURCES

6.1 INTRODUCTION

6.1.1 Scope of Labor Review for this Site Visit

This October 2012 IESC field visit represents a fourth dedicated review of labor and industrial relations issues. For this purpose the IESC engaged with more than 100 people individually or in groups, including EHL staff in POM, EHL staff dedicated to the Project's EPCs, Contractor managers, Contractor work force, both locally and internationally hired, and relevant third party stakeholders. Due to the shortened duration of this visit no worker interviews took place.

The IESC labor and human resources review included (but was not limited to) the following activities:

- Presentations on Contractor management, camp management and labor and working conditions by Contractor Compliance and Interface Management staff in Port Moresby;
- Presentations on the National Content Plan, local business development and Project - Lancos interaction by relevant Project staff in Port Moresby;
- In-field discussions with a range of Project personnel including Project managers and L&CA Compliance and Interface leads;
- In-field discussions with Contractor and Sub-contractor personnel including managers and workers at C1, EPC 3, 4, 5A and 5B as well as with the Community Issues Committee at EPC5B; and
- Presentations by umbrella Lancos, such as HGDC Ltd (EPC 4 - Hides Gas Conditioning Plant and Well Pads), LABA Holdings Ltd (EPC3 - LNG Plant) and visits to their offices.

6.1.2 Waiver

The IESC labor review is based on interviews conducted with EHL staff in POM, EHL staff dedicated to the Project's EPCs, Contractor managers, Contractor work force, both locally and internationally hired, and relevant third party stakeholders. Any claims made by workers or management are crosschecked against one another. Also, efforts are made to substantiate claims with project documentation, such as minutes of meetings, attendance records, statistics etc.

The IESC review provides a "snapshot" of the PNG LNG Project's state of conformance with the commitments and standards defined in the Applicable Lender Environmental and Social Standards. Also, the effectiveness of our review remains dependent on the accuracy of information provided by people. As such, the review does not purport to be a fully comprehensive evaluation of conformance.

6.2 LABOR AND WORKING CONDITIONS

6.2.1 Project Strategy

Project commitments are defined in the Labor and Worker Conditions Management Plan. Key objectives of the strategy are as follows:

- Maximize work opportunities of PNG citizens during construction of the Project;
- Recruit workers in accordance with the geographic priorities determined by the Project and in particular, give first priority for employment to PNG citizens originating from within the Project impact area;
- Enhance PNG citizens' skills base through training provided during employment;
- Implement an equitable and transparent recruitment process; and
- Provide fair terms and conditions of employment and comply with relevant laws.

In the Management Plan these objectives are described in detail in Table 1: Management and Monitoring and are clearly benchmarked in Attachment 1: Legal and other Requirements. The IESC therefore wants to make note of the fact that our observations are also based on the requirements of Attachment 1 and, specifically, PNG labor legislation and IFC PS2, which in turn is underpinned by the ILO Core Labor Standards.

6.2.2 Observations

6.2.2.1 Project Monitoring of Contractor Performance

Contractor performance in terms of labor and working conditions encompasses the requirements of the Labor and Working Conditions Management Plan, the Camp Management Plan, as well as the National Content Plan. The IESC observes that since its March 2012 visit EHL has made a final transition towards a consistent, centralized and informed strategy in terms of dealing with the multitude of labor and industrial relations issues (labor unrest, strikes, work stoppages, etc.). EHL now appears to be sufficiently equipped to proactively identify and consistently manage the many labor and industrial relations issues that are bound to regularly manifest themselves in a Project of this size.

Between March and October 2012, the CIC team consolidated its staffing. A CIC Analyst is now on board, who is responsible for collating data on Contractor performance and compiling the monitoring dashboards. Two experienced CIC team members were assigned and have now formed the Upstream North team, to be able to deal with all the Upstream North issues in a coherent and integrated manner. Their previous positions at the EPC Contractors have been filled with new CIC staff. In addition to monitoring the SMPs the CIC team has been supporting EPC Contractor activities, including support during the election process, support for the Komo Community Issues Committee and working with Community Affairs to set up a similar body at HGCP, transition of HGDC from C1 to EPC4, raising awareness on drilling, the water task force, etc. etc.

In 2012, the CIC team carried out 121 monitoring events at EPC Contractors, of which 61 were outside-the-fence on 'Community Relations' and 60 inside-the-fence, the latter category being split into 'Camp Management' with 42 monitoring events and 'Labor and Working Conditions' with 18 monitoring events. Monitoring data show the status on non-conformances (open or closed) per broad focus areas, i.e. 'Community Relations', 'Camp Management' and 'Labor and Working Conditions'. Data also show the top contributing non-conformances in these categories, for Labor and Working Conditions these are: terminations, workers induction, pay slips, ratifying contracts of employment and their content, selection procedure, and safety of foreign workers. For Camp Management the top contributing non-conformances are: key camp standards, cultural tolerance, grievance procedure, content and attendance of induction training, rules and regulations, and implementation of disciplinary measures.

6.2.2.2 Employment opportunities through Lancos and PNG Workforce Development

The national workforce currently working on the Project, 70% of which is actually provided through Lancos now exceeds approximately 9,000 workers - compared to 8,500 in March. The total workforce now exceeds 19,500. Females still represent about 7% of the total labor force, of which 93% are PNG nationals. The numbers (9,000+) and percentages (46%) of PNG nationals employed by the Project are much higher than the original construction target of employing approximately 3,500 PNG nationals out of an originally estimated total workforce of about 12,000 at peak (~30 percent). Demobilization at various EPC Contractors has commenced, primarily laying-off the unskilled, local workers, whereas the need for more specialist, skilled workers - mostly OCNs, has increased due to completion of several technical components at EPC3 and EPC4. Nevertheless, the Project is still hiring more PNG nationals every day (5% increase in Q3), so the trend merely demonstrates a slowdown in the acceleration of recruiting PNG nationals, rather than an absolute decrease.

In terms of workforce development, EHL and its Contractors have delivered more than 6,000 courses resulting in more than 1.4 million hours of training, with 949 courses carried out in Q3 of 2012 reflecting 170,000 training hours excluding "on the job training" hours by EPC Contractors.

The Port Moresby Construction Training Facility (POMCTF) alone has delivered more 400,000 training hours. Training modules have focused on civil and building, mechanical and piping, as well as catering and scaffolding to align with construction activities at the LNG Plant site. To date, almost 1,700 PNG nationals have graduated at POM CTF, of which about 30% are female. The training center closed its doors with a last graduation at 30 March 2012. Ever since, the POMCTF trainees have been providing on-the-job worker training at the LNG Plant and are being assessed for the Technical and Further Education (TAFE) Australia Certificate Level I in Resource and Infrastructure Operations certification. The Highlands based Juni Training Center had just delivered its third group of graduates and a fourth group in training during the IESC October visit, expecting to graduate before the end of 2012.

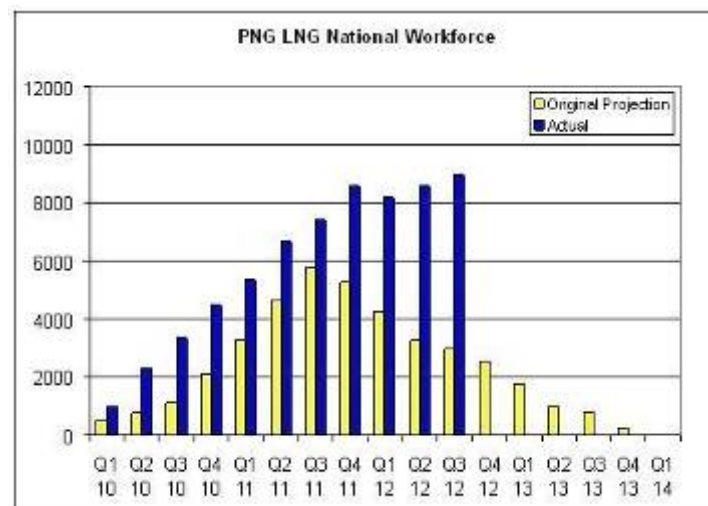


Figure 6.1: PNG LNG National Workforce – Actual versus Projected

Source: Updates provided by EHL

6.2.2.3 Lanco Development and Performance

EHL did not provide an update on this issue during the October visit. During its visit to the field IESC noted that in the Hides area, HGDC continues to underperform on deliverance on recruitment in terms of meeting time lines and classification specifications, even though EPC4 provides HGDC with timely forecasts. HGDC does put advertisements out, but all incoming data and CVs are kept in hard copy form; there is no electronic database. On the positive side, workers have proven very capable in learning the necessary skills on the work floor.

HGDC considers the process of working out the MoU of Cooperation details with EPC5A painstakingly difficult and feels communication has basically broken down. The MoU was signed 1.5 years ago by the HGDC Chairman and Spiecapag PM. The then draft version of this MoU had unexpectedly come back to HGDC as a final version and they now want to discuss the details with Spiecapag. HGDC feels they will lose out substantially on supplying workers to Spiecapag, but also with respect to catering, as Spiecapag does its own catering. Normally, HGDC gets paid for catering to each worker in a camp, i.e. all PNG nationals, OCNs and expats. HGDC also wants to be able to record the numbers of workers each day, before submitting an invoice, so that they know how many times they can charge their fee per worker.

HGDC is also looking into other Project related opportunities, i.e. they are developing a potable bottled water line “Mountain Ridge” at a production facility in Lae, with the initial objective of supplying the Hides-based EPC Contractors with drinking water - and later on the whole PNG LNG Project.

At the Komo Airstrip, MCJV (EPC5B) has noticed that the amount of issues brought up by HGDC recruited workers has reduced about 60-70% in 2012, compared to 2011 and that HGDC management of labor issues has improved about 50%.

At the LNG Plant, other potential employers (e.g. Interoil) have already approached LABA for their worker database as the health, training and skills levels of their workers are considered one of LABA’s strong points. LABA is currently developing other strategic company objectives that still need to be approved by the LABA Board of Directors. LABA will continue to pursue DLIR as it had committed to several dates for training on topics such as taxes, superannuation, etc., but has never shown up.

Along the onshore pipeline, Lanco representatives currently work alongside Spiecapag (EPC5A) on workers issues and liaising with communities in the Benari area. Benari is an isolated, greenfield area and requires more preparatory work than the previous areas. The Lanco officers initially identify villages/clans eligible for jobs and then engage in raising community awareness and selecting of candidates for jobs through the village councils. They are instrumental in identifying local complexities to Spiecapag, such as why certain clans have disproportionately more rights to job positions than others. Selected community

members then go through Spiecapag's recruitment process consisting of a pre-employment medical examination including, an age assessment by ISOS, alcohol and drugs test and, if necessary, a driving test. In the end it is up to Spiecapag to accept or reject candidates.

6.2.2.4 Contractor Performance

EHL's IR Strategy was rolled out across the Project in September 2011, while allowing EPCs to adopt the strategy as appropriate given local circumstances and contract conditions. Up until now EHL's Contractor Interface and Compliance team has carried out three IR Strategy Reviews at the EPC Contractor level (September 2011, February and August 2012), analyzing performance per EPC and IR strategy enablers. These reviews show that implementation of the EHL IR strategy has improved and that Contractor performance against the strategy in percentages rose from around 50% and below in September 2011 to the high 80s and 90s in August 2012. The main outstanding issues at the time were preparations for demobilization and worker's councils. During the October visit IESC reviewed the methodology followed by EHL, and determined it to be solid and valid.

In general, labor related incidents are decreasing, partly due to local communities and their leadership coming to grips with the Project and what it has to offer in terms of employment and income generation, as well as workers adopting more and more to a workplace identity. The situation at the HGCP (EPC4) demonstrates this well in terms of workers having signed on to the CBIC clan identity and community leaders jointly writing an apology letter to CBIC for all the conflict and unrest that occurred over the past two years (see 6.2.2.6 on Worker-Management Relationship).

Workers' and Women's Grievance mechanisms are now in place at all EPC Contractors, although quality and effectiveness still vary (see Section 6.3).

Finally, Personal Viability Training is being rolled out across the Project. As of October 2012 there have been 18 training sessions with over 700 participants, split almost equally between men and women.

PERSONAL VIABILITY TRAINING

PVT is an 80-hour training course that is delivered over the course of two weeks (5 days x 8 hours) and consists of different levels. At Komo only the first two levels have been delivered:

Level I: Game of Life

On "How to break free from the dependency mode and become self-reliant in life"

Level II: Game of Money

On "Rolling over money instead of keeping money in 'Bilum' - dead money - and how to generate money by your own hands?"

PVT also relies on informal peer education and is planning a Training of Trainers program - 5 candidates have already been selected. At Komo the program took in 65% women and 35% men and is part of the general Community Support Program. Its impact is monitored through follow up visits.

The Komo-based Ward Councils were asked to select trainees from their own wards, based on certain criteria, e.g. representatives of women or youth groups. Just getting these 8 wards together in trainee groups was a remarkable achievement, given all the clan controversies.

PVT graduates related to the IESC that PVT as such will not address the challenges of the post-construction phase, as long as there are no opportunities to market their produce. The Project stimulates horticulture and aviculture development, but Project caterers, such as iPi, still source from Mount Hagen and not locally.

6.2.2.5 Recruitment Policies and Procedures

Previous IESC reports have identified potential recruitment issues associated with OCNs. In the March report the IESC noted that EHL had been following up on these observations and carried out several measures to verify that OCN recruitment practices are consistent with Project policy - see for more detail the IESC March 2012 report. EHL had found that the response from the EPC contractors was mostly positive and provided no reasonable basis for concerns on forced or child labor.

EPC Contractors select their recruitment agencies according to their legitimacy as stipulated in the procurement contracts with the Project and on the basis that they are legally licensed to conduct business in their country of origin. As it is difficult to distinguish actual versus advertised business practices, IESC had recommended for EHL to request its Contractors to review recruitment practices of their suppliers of OCN workers informally on the basis of a 'civil society reputation check' through for example NGOs, trade unions or worker's rights experts to verify any rumors of illegitimate activities by these agencies.

In October, EHL informed the IESC that this recommendation had certainly been noted and taken on board and may be applied in future Projects, but that it considers this recommendation not opportune for this moment in time. Contractors, such as MCJV (EPC5B) gave a similar message and explained that any change in the screening of recruitment agencies could only be undertaken at MCJV's corporate level. Spiecapag (EPC5A) on the other hand, informed the IESC that it had actually already considered cancelling the Contract with the Indian based "Al Khareem" agency before IESC made its observations in the July/August 2011 report. Spiecapag recognizes that the screening process of Al Khareem had been substandard and was carried out by a staff member in Brisbane who left the company some time ago. Spiecapag was already considerably dissatisfied with Al Khareem and having their doubts confirmed through the IESC observations made it easier for them to take a final decision. In conclusion, the current state of affairs at the PNG LNG Project is that most OCNs are now directly hired by the EPC Contractors.

6.2.2.6 Worker-Management Relationship

At the time of the October visit the workers' council at the LNG Plant site, which represents not only CJJV workers, but also those of its sub-contractors had been in existence for more than one year. During the March visit IESC had observed strained relations between CJJV and the then workers' council, mainly due to discontent over procedures for running workers' council meetings, contractor response to workers' absenteeism, continued ban on cell phones etc. IESC also noted that workers' council members lack mature negotiating skills and were not receiving capacity building, such as for example offered for the 'safety champions' training program. In October IESC found that the election frequency of the workers' council remained unchanged at the request of workers themselves and are still held every three months. Most do not want to commit for a longer period than three months, whereas the motivated and effective members get re-elected for a second term anyway, thus guaranteeing some level of continuity. Relations between the newly elected workers' council and CJJV have much improved. The workers' council itself now delivers the chair, secretary and agenda for meetings and CJJV considers the current workers' council to be much more proactive and constructive. The strained relation between the Korean sub-contractor, Daewoo, and its workers has also improved. Daewoo has changed its management style considerably; they have re-trained their supervisors and improved their toolbox meetings.

At the very end of the IESC's March visit violence had broken out among CCC workers at Plant site. During the October visit the IESC was informed that the initial response to this event had been to fire all those involved, but that due to constructive mediation from the side of LABA after the strike, a more fair resolution was chosen. LABA and CJJV made an effort to identify the real instigators of the incident and consequently only 20 - instead of all 140 - were dismissed. The Council of Porebada had expressed its gratitude to LABA for intervening, as most of the workers involved were from this community. LABA now has an IR department, with one manager and five dedicated IR staff. In general LABA's contribution to EPC3 Industrial Relations management consists of providing mediation, observations at toolbox meetings, and collection of grievances both LABA and sub-contractor related.

During the IESC October visit EPC4 reported once more that no workplace related incidents have occurred since their firm, yet fair handling of the September 2011 incident (see IESC November 2011 report). EPC4's high performance is in part due to CBIC implementing best practice in terms of: supervisor training, a workers' Code of Conduct, grievance and disciplinary procedures, and advanced cultural awareness training. In March CBIC still reported that any remaining problems at the time were due to community issues and not workplace related. The unrest in the Hides area during the March mission was related to Project Infrastructure Grants (PIGs) being handed out arbitrarily and without the submission of project proposals and was seen as part of the overall pre-election unrest.

A few weeks prior to the October visit, CBIC received an apology letter from major clan leaders in the area, stating that they were sorry for the unrest over the past two years and that much of the violence was inexcusable. A week before the IESC October visit CBIC had a meeting with these clan leaders. They expressed the wish to have a Community Issues Committee (CIC) set up in the area similar to the one in

Komo. The ToR was re-drafted to better reflect the local situation. Should such a committee come off the ground in the Hides area it will deal with all EPC Contractors (C1, EPC4, EPC5a, Drilling). However, CBIC first wants to be sure of the clan leader's resolve to this initiative. CBIC also expects these clan leaders to take along those clans that have not participated in the process yet.

During the March visit EPC5A did not have a workers' council or any alternative mechanism in place, nor any plans in that direction. Councils never did get off the ground in Gobe or Homa Paua, but in October EPC5A said it would consider the possibility of having a workers' council set up at Angore, as Project presence in this area will be more long term and will consist of components other than the onshore pipeline construction, i.e. Right of Way maintenance, drilling.

At the time of the October site visit EPC5A already had a general workers' grievance mechanism in place, which however was tailored to the context of PNG workers and not to that of OCNs. It also failed to log and report on OCN grievances for EHL monitoring purposes and thus OCN grievances remained invisible. Until the IESC October visit the OCN grievance mechanism in place at the pipeline was informal and not documented. In practice it consisted of OCNs communicating their grievances through an OCN in a supervisory or management position of similar or neighboring nationality, who would then take it up with either Spiecapag's Construction Manager or Project Manager. During the October visit Spiecapag's Project Manager indicated that these informal procedures would be formalized, put down in writing and that these would be communicated to OCNs.

At EPC5B, OCN meetings are no longer taking place on a bi-weekly basis, because of a change to working night shifts due to completion pressure. This is a change that started May 2012. Night shifts are mostly carried out by experienced OCNs. Meeting frequency went down as a consequence of these night shifts and OCN meetings are now mostly held on off-days, e.g. when work is impossible due to weather conditions, etc. The EPC5B Camp Committee consisting of EHL, MCJV, iPi, Lanco staff and workers' representatives (one male and one female) had the current workers' representatives replaced by other workers' representatives due to conflict and distrust among workers, which has improved workers' trust considerably.

During this visit the IESC also met with the Komo 'Community Issues Committee' and with a selection of local PVT trainees. CIC members told of two major grievances; one of which was related to MCJV's recruitment transparency. They claim that a considerable number of the PNG nationals that are directly hired by MCJV (mostly PNG nationals that are not of local origin) could have been found and hired through the local Lancos as well, had MCJV been more transparent about their job openings. The other complaint revolved around inadequate communication between CIC and MCJV management - a breakdown in communication may be starting according to CIC members. All grievances and issues go through the MCJV Community Affairs officer, whom they believe to be too junior to get these effectively addressed by MCJV management. CIC and MCJV management representatives are supposed to meet bi-weekly, but these meetings never seem to materialize, according to the CIC.

6.2.2.7 Conditions of Work

During the March 2012 field visit IESC recommended that EHL review Contractor compliance with PNG labor legislation, mainly in terms of working hours, including breaks, days of rest, rotation schedules, etc., and consequently to review the exemption status of its Contractors. EHL itself had labor law exemptions in place for two minor issues since March 2012, but could not provide information on the exemption status of its Contractors.

Prior to the October field visit EHL had carried out an update on Project compliance with PNG labor law and had asked its EPC Contractors and Subcontractors to review their own policies, procedures and practices based on a directive from EHL Procurement and based on GoPNG requirements. EHL provided IESC with a full status overview of its EPC Contractors and Subcontractors, specifying whether a submission had been made to DLIR (or already compliant and therefore N/A), whether an exemption had been granted (or already compliant and therefore N/A), and whether the exemption had been officially announced (or already compliant and therefore N/A).

Contractors have been requested to (more coherently) implement ExxonMobil's corporate Operations Integrity Management System (OIMS), as per contractual obligations, which includes improved risk assessment of issues such as fatigue management, safety, and security. EHL announced that it would

continue to assist its Contractors with their submissions and continue to work with DLIR on the exemptions.

During previous visits the IESC had identified indicators for possible non-compliance with working-hours-related legislation along the pipeline. A review of Spiecapag (EPC5A) by a PNG legal firm, however, has been found Spiecapag compliant with PNG labor law. Spiecapag has introduced some changes in its R&R for OCNs: Colombians will change from a 20/2 to an 18/3-rotation schedule because of their extensive journey back home; South East Asians will change from a 20/2 to a 20/3-rotation schedule. For all other than Colombian OCNs the R&R will also be changed and formalized into a 20/3-rotation schedule. In theory this would address the issue of 1-day-in-7-off, but the debate is still on whether it is acceptable for these off-days to be accumulated or not. Workers requests for working more than 20 weeks are categorically denied.

Philippine workers received a 10% pay rise in June. The Indian workers have issues with their travel back home, as there are no more direct flights from Singapore to Chennai, due to a shortened transfer time (now 1.5 hours) in Singapore. Instead of flying directly from Singapore to Chennai, they now need to travel via Mumbai, which lengthens their trip by one full day. Spiecapag's travel agent is contractually not allowed to book with other companies, so the problem remains unresolved. Finally, a grievance of Colombian workers has been redressed successfully within two weeks. Their grievance was related to changes in exchange rates between the Colombian Peso and the USD and the negative impact this had on their wages.

In the Hides area, a first ANZ ATM will be operational by the end of 2012. ANZ came to Hides eight weeks prior to the IESC October mission and conducted an educational road show. ANZ has been doing these road shows in other PNG areas with the objective of educating people on opening and managing a bank account and trying to establish a saver's mentality. The road show was coordinated with HGDC, as the ATM will be next to the HGDC office.

At the LNG Plant site, CJJV (EPC3) has addressed an issue that has been contentious for some time now and has led to several strikes, and that is the request for an appraisal system. CJJV now offers its workers a bi-annual appraisal system; two consecutive positive appraisals lead to an increase in wages and/or promotion. CJJV has asked the same of its subcontractors. CJJV related that 29% of all appraisals failed mainly due to chronic absenteeism.

6.2.2.8 Demobilization

Demobilization is recognized as a critical worker issue that has significant consequences for local communities, as also discussed in Section 5.5. In February 2012 EHL convened an internal, multi-stakeholder demobilization workshop and consequently by the end of April issued a Project-wide demobilization strategy that incorporates Project best practices, which was then rolled out to the various EPC Contractors. With this Project-wide strategy as guidance EPC Contractors are now developing strategies of their own, a process that is in varying stages of implementation. EHL aims to provide for a well-organized and consistent demobilization process of the national workforce to minimize demobilization related impacts and work stoppages, e.g. through demobilizing OCNs and non-local PNG nationals first and to align Project and GoPNG community support activities with demobilization events. The demobilization strategy covers the national workforce only; OCNs will be demobilized as per contract; equipment and assets demobilization is coordinated by EPC procurement departments; EPCs will close out and handover to Production; and handover of Project infrastructure (airport, bridges, training centers etc.) will be managed separately.

At the LNG Plant site, CJJV expects to have a first draft of its demobilization strategy ready by the end of October and then submit it to LABA for review. LABA already reviewed the demobilization strategy of the Hides umbrella Lanco, HGDC. Demobilization is expected to commence at a low rate by November 2012 and will reach its peak by July 2013. In preparation, CJJV intends to develop a standardized format for all its subcontractors to draft worker references. CJJV has scheduled a meeting on demobilization with LABA and its subcontractors for November/December to see what each party can contribute. This meeting will be one at a manager's level, after which Working Parties will be formed that will include workers representatives. Both CJJV and LABA expect Nasfund to become a demobilization challenge due to the fact that Nasfund now has a 3-month backlog in terms of its payment obligations. Meanwhile, EHL and LABA are rolling out a 'Bright Future' training course (based on the PVT) for all Plant site workers to enhance post-Project self-reliance. For this training CJJV condensed PVT Level 1 "Game of Life" into 10

hours of training (5x2 in one week) and includes: planning, setting goals and breaking these down into achievable steps.

In the Hides area, C1-EPC4 coordination with respect to demobilization and mobilization is working very well. Demobilization is taking place peacefully and transfers are carried out seamlessly, without any loss of income and benefits for workers. EPC4 is taking over complete work teams - fuel farm, fencing, etc., as they are already used to working together. The Hides umbrella Lanco HGDC has its demobilization strategy in place. HGDC has prepared the content of demobilization folders – which contain an ID Card and payments overview of the National Superannuation Fund, a plasticized Certificate of Service, a Letter of Appreciation, a final pay slip, a copy of an article on “demobilization being an emotional event” and a digital watch. They offer demobilized workers not only pay packages, but also training reinstatement packages, offering transportation to their point of origin, etc. Workers have cards defining their skill sets, which serve as an electronic training passport. All their competencies and training will be listed on their Certificate when they are demobilized, which enhances their employment prospects in the PNG extractive industry labor market considerably. C1 and EPC4 consider this to be a true legacy for the Project to leave behind.

At the Komo Airstrip, MCJV (EPC5B) is preparing transfer of its skilled workers to EPC4 and Drilling. Due to various delays, the demobilization peak has shifted from August-October 2012 to February-April 2013

Along the pipeline, Spiecapag (EPC5A) is engaged in ongoing demobilization and mobilization, but has now committed to formalizing its demobilization strategy; Spiecapag submitted a first draft in September.

6.2.3 Recommendations

1. Concerning EHL and EHL monitoring of its EPC Contractors:
 - a) Continue to ensure adequate and effective follow up to the Project's Industrial Relations Strategy, both within EHL and towards EPC Contractors;
 - b) Follow up on intent to have the human resource/industrial relations expert from the ExxonMobil Production Company pay regular visits to the Project throughout the remainder of the construction phase, who could perform as the 'mobile troubleshooter' that IESC recommended in its previous report;
2. Concerning Lancos and PNG workers:
 - a) Continue to encourage Lancos to attend the newly developed labor, social and environmental courses at IBBM; and
 - b) Monitor communication issues and developments on the MoU of Cooperation between Spiecapag and HGDC.
3. Concerning Other Country Nationals:
 - a) Monitor announced changes at EPC5A; and
 - b) Review the legitimacy of a differentiated R&R schedule for staff holding equal positions based on country of origin, more specifically at EPC4.

6.3 GENDER

6.3.1 Project Strategy

The Project's provisions for gender-related topics are covered in the following management plans:

- The Labor and Workers Conditions Management Plan (Mitigations 23.026 and 23.034); and
- The Camp Management Plan (Mitigations 24.027 and 24.029).

Relevant mitigation measures are not specific to gender but are included as part of the overarching requirements for equal opportunity and non-discrimination. Gender would also be covered under PS2, Labor and Working Conditions.

6.3.2 Observations

During the October field visit IESC was further updated on Project initiatives and developments in the field of gender, i.e. women-in-employment and women-in-impacted communities. On the work floor EHL seeks to engage its PNG LNG workforce, through for example the 'Women in Energy Network' - a network launched in 2011 that promotes women leadership in the energy sector. EHL is also rolling out the Personal Viability Training (PVT) program across the Project, which typically engages more women than men and increases women's self-reliance and autonomy.

EHL is currently engaged with five existing Key Women's Empowerment Community Investments. With these programs EHL aims to develop champion initiatives that help women fulfill their potential and drive economic and social change in their communities. All activities are in alignment with ExxonMobil's 'Women Economic Opportunity Initiative' – a Corporate Signature Initiative launched in 2005, but also with PNG National Action Plans and with the UN Millennium Goals.

6.3.2.1 Women-in-Employment

During its previous visits the IESC had noted that suitable women's grievance mechanisms and capable confidantes needed immediate implementation across the Project. As contractors hardly employ women at the operational level, but do employ large contingencies of unskilled and semi-skilled women from local communities at either the Alliance or iPi subcontractors, women's grievance mechanisms are predominantly needed at the camp level. In October IESC found that all EPC Contractors now have women's grievance mechanisms in place.

The IESC still recommends for the Project to closely monitor the performance of the various women's grievance mechanisms, given the fact that PNG women, especially in the Hides area, are to be categorized as a vulnerable group that "...may be directly and differentially or disproportionately affected by the project because of their disadvantaged or vulnerable status" leading to Project responsibility to "...propose and implement differentiated measures so that adverse impacts do not fall disproportionately on them and they are not disadvantaged in sharing development benefits and opportunities" as defined in IFC Performance Standard 1.

In March IESC noted that EPC4 was soon to have the most advanced women's grievance mechanism within the Project in place and could well prove an example of best practice for the Project. At that time a new women's confidante was identified who would be directly employed by CBIC would have all the necessary skills; more than 20 years of experience working at POM General Hospital at the gynecological ward; and professionally counseled women for years. She is originally from the Hides area and a native Huli speaker. The intention was to hire her in April, but she actually only commenced work in mid-October (due to various delays). She will be working for the CBIC Local Liaison and Business Development Department in the position of daily compliance officer. Besides holding the position of women's confidante, which is a more passive role, she is also expected to proactively reach out to women employed under EPC4; e.g. deliver education and build capacity among women workers through meetings and workshops.

At EPC 3 CJJV has assigned one of their female senior health advisors and a physician of ISOS as the women's confidantes for the LNG Plant site. This change took place in response to a request from the previous workers' council. They are available for all women workers on site and their main tasks are to outreach to women on safety and health issues, but also on harassment and Sexually Transmitted Infections (STIs). Women workers are provided plastic cards containing contact details of both female confidantes. At the time of the IESC visit both women had just delivered a workshop on STIs. Many women have said that none of these issues were previously open to discussion and were considered taboo. The impact on women has been profound in that being able to address these issues with medical professionals not only facilitates solving the problems, but also builds women's confidence and autonomy, which in turn influences other parts of their lives in positive ways.

Finally, at EPC5A Spiecapag has also recruited a female confidante.

6.3.2.1 Women-in-Impacted Communities

The IESC and EHL discuss Project responsibility and scope for mitigation measures in relation to women and child (domestic) abuse on an ongoing basis. Papua New Guinea's track record on gender-based violence is infamous as described in the report Hidden and Neglected (2011) by Médecins Sans Frontières.

For more background and details (refer to IESC March 2012 report). The IESC fully appreciates that these problems have been inherently present in the PNG society long before the Project arrived and the difficulty the Project faces in identifying where it may (indirectly) contribute to and aggravate the situation by its presence and how it may mitigate these impacts.

During previous visits the IESC already noted that the Community Health Program was conducting a successful 'marriage and relations counseling' program at the community level. In October, IESC observed that PSI had started a Marital Training Program in the Hides area, from which participants actually graduate. During the Gender update by EHL IESC learned that the impacts of this program are starting to be noticeable - ranging from reduced domestic violence and consequently reduced visits to health clinics, but also increased school attendance of children in the area because of more stable home situations.

During the October visit EHL also presented some of the multi stakeholder initiatives that EHL is engaged in to address women's disadvantaged position in PNG, i.e. Key Women's Empowerment Community Investments:

Urban Youth Employment Project (2010-2013) – Offers pre-employment skills to lowly educated youth. Participants are provided with BSP accounts and financial literacy skills. The program was initiated in the National Capital District with assistance from the World Bank and is being rolled out Upstream North and South. EHL's involvement is to ensure female participation in the program; 30% of participants are now women, however 40% of all leadership is female.

Building Women's Self Reliance Program (2011-2012) – A World Bank implemented project with certified PNG trainers, providing life and labor market skills through women's associations. A first phase of training is taking place at the LNG Plant site villages targeting more than 140 women in total. Training events are coordinated with L&CA. Program will be rolled out to Upstream North and South in 2013.

Global Women in Management (GWIM) – A CEDPA (Centre for Development and Population Activities, Washington DC) implemented project providing 6-week courses on leadership, entrepreneurial and advocacy skills to emerging women leaders through NGOs and women's associations. 15 PNG women have completed GWIM training since mid-2010.

Girls Scholarship Support to Business Professional Women's Club – Provides scholarships to underprivileged young women for vocational training and secondary/tertiary education. EHL plans to tailor a similar scholarship program in the Project impacted areas.

PNG Country Gender Assessment (2010-2011) – A collaborative effort to understand gender-related limitations to economic development in PNG and to develop a policy framework for GoPNG. Participants include the World Bank, the UN, Oxfam International, the Department of Community Development, the National Council of Women, the PNG Chamber of Mines and Petroleum and EHL. Final recommendations are available at the World Bank web site.

6.3.3 Recommendations

1. The quality and effective implementation of these women's grievance mechanisms varies greatly across the Project. IESC therefore continues to recommend that the Project have a dedicated expert carry out a rapid evaluation of women's grievance mechanisms to identify strengths and weaknesses and share lessons learned, in particular the developments at EPC4, as their approach may well turn out to be an example of best practice and worth sharing with the other EPCs.
2. Have a dedicated Gender expert make a rapid assessment of the most pressing issues for women employed by the Project and design tailor-made solutions, especially for women in the Hides area, at the Project level, including concise instructions for Contractors and Lancos (continued recommendation).
3. Work through the Community Health Program's 'marriage and relations counseling' program in communities to have gender workplace issues addressed by developing a specific focus on violence issues related to women-in-employment.

6.4 CAMP MANAGEMENT

6.4.1 Project Strategy

The Project's commitments for camp management are contained in the Camp Management Plan, the Labor and Workers Conditions Management Plan, the Minimum Health Requirements for Project Execution, and the Health Inspection Guidelines. The primary objectives of the Camp Management Plan are:

- To avoid or reduce negative impacts on the community and maintain constructive relationships between local communities and workers' camps; and
- Establish standards on worker welfare and living conditions at the camps that provide a healthy, safe and comfortable environment.

The Labor and Working Conditions Management Plan also contains some mitigation measures on living conditions (e.g., Mitigations 23.020 and 23.021). The two health-related documents contain some specific requirements for food sanitation, sanitation of living areas and laundry practices and procedures in addition to Project-wide requirements for public health and occupational health and safety at large.

6.4.2 Observations

Camp construction is progressing to schedule and is in its final stages, both at the LNG Plant site as well as in the Hides area. There is however a continued need for EHL to rigidly implement, monitor and evaluate all risk mitigation measures proposed in the risk assessment reports for personal-space-reduction at EPC3 and in the Upstream Area.

At C1 camp construction is complete and all activities are maintenance only. At Well Pad A all work is complete and the facility has been handed over to EHL Drillers. At EPC4 all space/person issues have been satisfactorily resolved through a rearranging of room layouts and only allowing for 5-to-a-room, instead of 6-to-a-room.

At the LNG Plant site (EPC3) the Food and Camp Committees have joined into one committee, as most members sat in both committees anyway. The committee meets bi-weekly. CJJV plans to have Accommodation Blocks E and G (3 and 4 to a room) provide one worker representative per Block. These representatives, typically junior OCNs, will be elected and in due time all Blocks are to provide representatives - 30 in total. These plans were still to be announced during the IESC October visit.

CJJV is also in the process of recruiting two Indian and two Philippine monitors for daily camp inspections. During the IESC October visit camp facilities were in the process of being upgraded; additional wash stations are being provided for those OCNs who prefer to do their laundry by hand - they do have access to the camp laundry service, but most prefer washing by hand. The ATM machine is now operational and improvements of the camp communications system (internet, etc.) were under review. An Entertainment Tent is being constructed that will accommodate 1,000 people. The tent will function amongst others as a cinema, playing movies in different languages. Finally, CJJV is hiring an expat to advise on sports and recreation - with the aid of lifestyle advisor.

During its October visit the IESC visited a Lanco owned and managed workers camp outside Komo Airstrip – 'Komo Tukuba Development Corporation Camp.' The Tukuba Development Corporation Camp is a small-scale camp with a pleasant and homely atmosphere, due in part to the application of traditional building materials and garden landscaping. Living conditions appear clean, sanitary and healthy. The rooms (accommodating two people each) and the ablution blocks are clean and spacious and the air quality in rooms is better compared to other camps visited. Food storage is impressive given the limited facilities and the camp almost exclusively uses local, fresh food. Kitchen and mess facilities were small-scale, but excellent. The camp was going through an extension at the time of the IESC visit to be able to accommodate more people. The basic observation of this camp is that it meets or exceeds Project standards for worker accommodation.

6.4.3 Recommendations

1. Continue to implement, monitor and evaluate risk mitigation measures to manage reduced space/person at the LNG plant site and in the Upstream Area (repeat recommendation).
2. Take note of the more agreeable and pleasant atmosphere/living conditions in the 'Komo Tukuba Development Corporation Camp' as compared to some of the more regimented camp design elsewhere in the Project and consider using some of its set up for operational phase accommodation at HGCP.

7 HEALTH AND SAFETY

The PNG LNG Project has a well-developed program to manage both occupational health and safety of workers, as well as a community health and safety program. The Health Group focuses on both worker and community health issues, whereas the Safety Group focuses primarily on occupational safety of workers. Community Safety is managed primarily through the L&CA organization and has been treated in Section 5.6. Project health and safety commitments towards the local communities are part of the ESMP as defined in the Community Health and Safety Management Plan, EHL Community Health, Safety and Security Management Plan, and the Community Impact Management Plan. Other requirements for health and safety are contained in documents outside the scope of the ESMP. Three of these documents, the Project Safety Plan, Project Health Plan, and the Journey and Traffic Management Procedure were therefore specified in the LESR to be relevant to demonstrate compliance with Lender Group requirements. In terms of community safety (see Section 5.6), Project traffic has proven to be the most significant adverse impact to communities in many other projects similar to PNG LNG and for that reason was targeted for inclusion within the umbrella of the LESR.

7.1 COMMUNITY AND WORKER HEALTH

7.1.1 Project Strategy

Project health commitments are defined in the Community Health and Safety Management Plan (to be implemented via Contractor Implementation Plans) and the EHL Community Health, Safety and Security Management Plan and the Community Impact Management Plan (to be implemented via Contractor Implementation Plans). Health planning specifically for worker health is defined in the Project Health Plan. The over-riding objective is to avoid or reduce risks to and impacts on community health during the project life cycle from both routine and non-routine circumstances (see also Section 5.6).

7.1.2 Observations

The Project health program is organized into both occupational health as specified in a Project Health Plan and into community health within the requirements of the Community Health & Safety Management Plan. These plans are well developed and appropriate for a Project of the scope of PNG LNG.

Community Health

EHL presented findings and a report of the iHDSS baseline survey covering the four villages in the vicinity of the LNG terminal (Boera, Porebada, LeaLea, Papa). Preliminary iHDSS baseline survey findings for the Hides-Komo area were also presented. These covered the Haliago division, which is to the south and east of the Hides and Komo areas directly impacted by the PNG LNG Project. Data for Hides and Komo are still being analyzed with findings expected to be available by Q1 2013. The findings assembled to date present a comprehensive picture of health and socio-economic conditions. They will provide rich data for Project monitoring going forward.

EHL has started a dialogue with its iHDSS partner, Papua New Guinea Institute of Medical Research (IMR) with a view to EHL being able to undertake some rapid, early data analysis for its management purposes, ahead of IMR's final presentation of findings. This dialogue was ongoing at the time of the October 2012 review.

While the challenges of EHL being able to have early access to the iHDSS monitoring data are not fully resolved, EHL was observed to have made a concerted effort to complete baseline reports and present available findings. This effort needs to be continued. The need for the Project to have early access to the iHDSS data to enable it to meet its ESMP commitments remains critical.

Water management has been a community health issue for the past several site visits. This issue and the Project's activities to this regard are discussed in Section 5.6 and not repeated here.

Worker Health

Occupational health is a "best" practice program and continues to be a major focus, especially in consideration of the fact that the number of workers is at or near its maximum and now exceeds more than 19,600 workers. Occupational health progress is reflected by several indicators: clinical diagnosis improvements for malaria, tuberculosis and dengue implemented across the Project; significant reduction in malaria cases reported over the past 12 months – no case in the Highlands; and no food or water borne illness outbreaks in 2012 and 2011 in Project camps. Internal compliance audits show improvement in

industrial hygiene compliance from 72% in 2011 to 92% in Q3 2012. Another significant achievement is with respect to clinical diagnosis improvements for malaria, tuberculosis and dengue implemented across the Project:

- Introduction of two GeneXpert machines for TB testing;
- Malaria training conducted for clinicians and slide readers by WHO expert; and
- Improved RDT tests provided for dengue.

Another improvement has been the implementation of an integrated clinical health model for HGCP, Moro, Kobalu, Juni and Lae clinics.

In its March 2012 report IESC had observed an increase in fatigue and psychological health problems, manifesting mainly as stress due to long-term isolation and an ongoing sense of the security threat in PNG, mainly in the Highlands. Medical staff had indicated that they expect this situation only to worsen as work pressure and stress will be increasing due to construction targets nearing deadlines. In October, EHL presented new management directives for its Contractors on 'Workplace Fatigue' and 'Managing the Psychological Impact of Critical Incidents in the Workplace.' Also, the EHL Workplace Assistance Program (WAP) is now accessible for Contractors including access to phone counseling for PNG Nationals (weekly) and for expats (monthly).

'Fatigue Management' Directive

A one-page document defining fatigue, describing lifestyle and work-related factors that may cause fatigue, symptoms and preventions and management of fatigue has been prepared and distributed.

'Managing the Psychological Impact of Critical Incidents in the Workplace' Directive

A six-page document has been prepared describing role and responsibilities that managers are expected to assume after a critical incident occurs, with the objective of containing the impact in the short run, providing the right assistance, engaging in most beneficial practices to aid recovery and ensuring a speedy re-entry into the workplace. Workplace critical incidents are defined and a range of reactions described: physical, emotional mental and behavioral, including delayed reactions over time. Do's and don'ts are explained and the possibility of utilizing the services of Project professional counselors and psychologists in order to provide Psychological First Aid are pointed out.

'Workplace Assistance Program'

A counseling and referral service is now provided by Project workplace counselors, either on-site or by phone to assist with work-related or personal problems of workers and their family members.

The project has also embarked on an obesity awareness program that includes making new posters on proper eating habits and making it the subject of tool box presentations. Food standards are now more focused on nutritional standards: low fat meats, eggs, low fat milk, fruits and vegetables, salad choices, multi-grain bread, and reduced fat, salt, and sugar. The Project continues to reinforce the need to control portion sizes through an awareness program that was initiated over a year ago: limiting self-service opportunities; limiting one meat dish selection per visit to counter; use of pre-portioned food trays; and use of smaller plates.

7.1.3 Recommendations

1. Continue discussions with Papua New Guinea Institute of Medical Research (IMR) to reach agreement on EHL early access to data for management purposes.

7.2 WORKER SAFETY

7.2.1 Project Strategy

Safety is embedded in all aspects of EHL's operations with worker safety requirements defined in the Project Safety Plan. This Plan describes appropriate work procedures with the following main objectives:

- Defines safety objectives, desired behaviors, and desired performance targets;
- Defines strategic approach for managing the safety discipline according to the established Project Execution Plans and Contracting Strategies;

- Describes key safety processes and safety improvement initiatives to be implemented by the Project Teams (e.g. safety leadership, site safety categorization, leading indicators, safety governance model, incident management);
- Describes safety staffing plans for the Project Teams; and
- Defines macro safety roles and responsibilities for members of Project Teams, and describes macro interfaces between the Project Teams, EHL, EMDC Functions, and Contractors.

The overall worker safety requirements and safeguards are comprehensive and consistent with a Project of the scope of PNG LNG.

7.2.2 Observations

Worker Safety is also a “best” practice program and worker safety continues to be a primary focus of EHL and the EPC Contractors. Safety statistics presented by EHL show a continuing decrease in the Total Recordable Incident Rate (TRIR). In March 2012 this rate was 0.46 for the entire Project and in October 2012 this rate was further reduced to 0.39. The Lost Time Incident Rate (LTIR) is 0.03, which is excellent compared to other major projects. The Project achieved over 25 million hours LTI free from March through close of August 2012, but in September there were two fatalities, representing a total of six fatalities since the start of the Project.

Investigations are still underway for the two fatalities. The first took place on September 2 on the Kutubu Spurline right of way near Mainline RoW at KP 108. Two excavators were working on leveling the right of way, but had moved away from the working face during heavy rains. The rain apparently mobilized sidecasted material into a debris flow that moved down a valley where the excavators were parked and they were partially covered by the flow and displaced 20 – 30 meters down the slope. One operator escaped, but one did not. The operator who lost his life apparently was not wearing his boots, which may have limited his ability to escape. The second fatality took place on September 30 at the Nabors drilling yard at Q2000 along the Well Pad Access Road. The accident occurred when a roustabout (local PNG worker employed by HGDC) stepped in between a Commander flatbed truck and a basket sled while attaching a sling to the basket. The fact that there is a camera in the back of the truck and that the operator was highly experienced in operating that type of vehicle highlights the bizarre circumstances surrounding this accident.

These fatalities have occurred in spite of a comprehensive worker safety initiative focusing on awareness of situations where fatalities could occur. SSHEs (Safety, Security, Health & Environment) training is at a high level and there are currently more than 500 Safety Champions.

8 CULTURAL HERITAGE

8.1 PROJECT STRATEGY

Cultural heritage refers to tangible forms of cultural heritage, such as tangible property and sites having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values, as well as unique natural environmental features that embody cultural values, such as sacred groves. Intangible forms of culture, such as cultural knowledge, innovations and practices of communities embodying traditional lifestyles, are also included. The PNG LNG Project has a well-developed program to manage cultural heritage as defined in the CHMP that includes both Chance Finds and Salvage protocols.

The CHMP contains the following objectives:

- Avoid known cultural heritage sites (including both archaeological sites and oral tradition sites) where necessary and practicable; and
- Where avoidance is not possible, manage cultural heritage sites in consultation with PNG Government and landowners.

The CHMP requires pre-clearance surveys to identify cultural heritage (archaeological and oral tradition) sites and includes a requirement for community consultation regarding the management of cultural heritage sites and preparation of any protocols required for ongoing consultation with community representatives. The CHMP also requires the monitoring of performance of cultural heritage activities and maintaining records that pre-clearance surveys were undertaken and site-specific cultural heritage plans were developed; participation in the cultural awareness workshop and training program; consultation with relevant stakeholders; grievances; site inspections to restricted areas; engagement of appropriate cultural heritage professionals; and documentation of actions taken to manage chance finds. The Chance Finds Protocol portion of the CHMP defines procedures to be followed when unexpected cultural features are encountered during construction activities and also provides a Salvage Plan designed to provide guidance for reporting and excavating finds.

8.2 OBSERVATIONS

Cultural heritage is particularly important in PNG, as it is one of the most culturally rich and diverse countries in the world, wherein about 90 percent of the approximate six million people speak over 800 distinct languages, and live in their respective social structures in their cultural communities and generally rely on their environment to ensure their livelihood. The Project continues to demonstrate respect for this heritage.

Ongoing archaeological activities at the time of the site visit continue to be related mainly to pre-construction surveys (PCSs) and the management of chance finds, but some salvage activities have also taken place along the Pipeline ROW, most recently at bridge sites near Tamadigi and Moro. Neither site was found to contain high-value cultural resources. The preconstruction surveys are still ongoing for upstream infrastructure development (C1 – CCJV) and the pipeline (EPC5A – Spiecapag). C1 undertook three PCSs in 2012 and encountered 17 oral tradition site and one archaeological site. C1 also made six chance finds including waisted and tanged blades and chert artifacts encountered at a temporary settlement site that could be as old as 40,000 years. EPC5A undertook 11 PCSs and identified 145 cultural sites: 96 oral tradition sites; 3 archaeological sites; 34 ossuary/burial sites; 1 old village site; 10 cave sites; and 1 cemetery. They also recorded 36 chance finds. Four chance finds were also recorded by EPC5B. 117 chance finds have already been turned over to the National Museum; 151 chance finds are now available for turnover and are just waiting to officials from the National Museum to be available.

An issue over the past several field visits has been that artifacts from salvage work in the HGCP area transported to Port Moresby in late April 2011 and inspected by PNG National Museum, still had not received an Archaeological Loan Permit such that they can be analyzed by Monash University. EHL and Monash University agreed on terms applicable for the export permit; EHL has applied for the issuance of the permit from the National Museum; Monash University/Coffey have arranged to secure the Australian import and quarantine permits; and the export permit was received shortly after the field visit. This is good news, as the most important aspect of an archaeological excavation is the analysis and interpretation of the artifacts encountered.

APPENDIX A
IESC 8TH MONITORING VISIT – TRIP SUMMARY

TRIP SUMMARY***October 15:***

IESC environmental and social team members W. Johnson, L. Johnson and R. Barclay arrive in POM

October 16:

IESC Environmental and Social Team:

- Opening sessions and presentations in POM for entire team (Construction progress, E&S resource organizations; MOCs)
- Briefing on non-Project Hides Deep drilling

IESC Social:

- Late morning and afternoon presentations and meetings on resettlement, grievances, stakeholder engagement and community development support

IESC Environmental:

- Morning presentation on waste and wastewater management
- Morning presentation by Drilling
- Afternoon presentations on noise, quarantine management, weeds and biodiversity

October 17:

IESC Environmental and Social Team - Port Moresby:

- Morning presentations by Operations regarding planning and schedule of the Operations ESMP, access to remote sites, and RoW management
- Travel to Moro Camp B via Tari and arrive too late for Spiecapag camp inspection, but receive presentation on EPC5A WWTPs (all spend night at Moro)

October 18:

IESC Environmental Team: helicopter from Moro to Gobe:

- Flyover Lower Omati reinstated area along ROW
- Drive from Gobe to KP 214 and back to Tamadigi Camp and inspect reinstatement
- Helicopter from Gobe back to Moro
- Presentations on reinstatement and Lake Kutubu WMA pipeline re-routes
- Spend night in Moro

IESC Social:

- Moro to Homa/Paua and back by car: discussions with local communities
- Presentation on water and water issues
- Spend night in Moro

IESC LWC:

- Amber Frugte arrives in POM

October 19:

IESC Environmental and Social Team:

- Helicopter to Hides

IESC Environmental Team:

- Inspection of Well Pad Access Road, Well Pad B and spoil dumps
- HGCP site inspection with EPC4
- HGCP site inspection with C1

IESC Social:

- Visit farm of Yorobi Uga and view pig breeding initiative, igloo green house and propagation activities in morning
- Afternoon tour of perimeter road around HGCP site
- Visit vulnerable households near spoil dumps
- Meet physically displaced and economically displaced people sites
- Meeting with ELC

IESC LWC:

- Morning meetings on contractor compliance with relevant plans, procurement and supply and camp management
- Update on IR strategy
- Fly to Tari and then helicopter flight to Hides
- Update meeting with CIC lead and EPC4 staff responsible for HRM and camp management
- Meeting with HDGC to view payroll distribution
- Worker meetings
- Entire team spends night at Juni

October 20:

IESC Environmental Team – Travel by car to Kopeanda and Komo:

- Visit HWMF at Kopeanda
- Visit Timalia Quarry/Borrow Pit
- Transit to Komo Camp and induction
- Tour Komo Airfield, including N-S Diversions and erosion and sediment control structures
- Return to Juni.

IESC Social:

- Tour Angore area in morning – review Women’s Association and food processing initiative
- Visit census and survey team
- Visit well pad access road and recently constructed housing sites
- In afternoon transit to Komo and meet with CIC at Evangelical Church, Komo
- Meet with personal viability training participants
- Transfer back to Juni

IESC LWC:

- Induction
- Meet with CIC and EPC5B staff responsible for HRM and camp management
- Meet with workers
- Visit KUJV Lanco Camp
- Join with Social for rest of afternoon
- Entire team spends night at Juni

October 21:

IESC Environmental:

- Tour of Tagari Quarry/Borrow Pit

IESC Environmental and Social Team: fly to Moro via a stop at Nogoli:

- Tour EPC5A Moro Camp 5
- Take scheduled flight to POM

IESC LWC:

- Helicopter from Nogoli to Moro
- Hold meetings with Spiecapag at Moro Camp
- Spend night in Moro

October 22:

IESC Environmental and Social Team:

- Conference call with Mark Pedersen on fisheries issues
- Update on aquatic biology monitoring program
- Presentation on Completions Certificate

IESC Environmental:

- Cultural Heritage presentation ;

IESC Social:

- Government Interface update
- Travel to LNG Plant site villages and attend meetings at Borea and Porebada
- Return to POM

IESC LWC:

- Travel to POM via Tari
- Travel to LNG Plant site
- Attend meetings with EPC3 staff responsible for HRM and camp management
- Meet with LABA staff dealing with HRM
- Return to POM

October 23:

IESC Environmental, Social and LWC Team:

- Non-conformance/observations discussion
- Demobilization strategy update

IESC Environmental:

- Travel to LNG Plant site
- Plant site inspection
- Review mangrove planting at pipeline landfall
- Return to POM

IESC Social:

- Presentations on national content, occupational health, community health and security

IESC LWC:

- Gender issues update
- Update on labor exemption requirements and status of EPC Contractors
- IBBM meeting
- Meeting with HDGC
- Entire team spends night in POM

October 24:

IESC Environmental, Social and LWC Team:

- Closeout preparation

October 25:

IESC Environmental, Social and LWC Team:

- Closeout meeting in morning
- R. Barclay, A. Frugte and L. Johnson depart in afternoon

October 26:

- W. Johnson departs in morning