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Omali Landfill



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REPORT OF THE:

INDEPENDENT ENVIRONMENTAL & SOCIAL CONSULTANT

ENVIRONMENTAL & SOCIAL COMPLIANCE MONITORING

PAPUA NEW GUINEA LNG PROJECT

Site Visit: March 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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Revision 0 – August 2012
Document No. 10-874-H5

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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
CJJV	Chiyoda JGC JV (EPC3)
CLS	Core Labor Standards or "Enabling Rights"
COD	Chemical Oxygen Demand
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
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
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
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
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

VG	Monitoring Centre
WAA	Valuer General
WMA	Waste Accumulation Area
WWF	Wildlife Management Area
WWTP	World Wildlife Fund
	Wastewater Treatment Plant

EXECUTIVE SUMMARY AND CONCLUSIONS

This report represents the sixth 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 March 13 – 29, 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.

Since the IESC November 2011 field visit there has been some escalation of community/worker unrest that has spilled over to the Project. In December 2011, a peaceful protest of landowners demanding Government compensation for OSL activities occasionally blocked the entrance to EPC5A's Gobe Camp, but on December 8 protestors raided and ransacked the camp, damaged vehicles and other assets, and occupied the camp until December 27. In January 2012 EPC5A management in Gobe Camp was assaulted by some demobilized workers. At the time of the IESC visit, the HGCP site was under lockdown from individuals apparently not representative of the local clan leadership demanding additional compensation for Project activities. The Project also experienced another fatality of a worker, in this case a PNG national working as a spotter in the Timalia Quarry (TB1) on February 10, 2012. This represents the fourth worker fatality since the start of the Project. Also since the last visit, a major incident not directly related to the Project, but with impact to the Project, was the Tumbi landslide that took place on January 24, 2012 and is thought to have killed about 20-25 local residents. This of course caused community concern and EHL is to be commended for the prompt emergency services that they offered to the local community. In spite of the incidents, in particular those associated with a breakdown of security, the IESC continues to positively observe the experience and dedication of environmental and social staff in the field, including the staff of the main EPC Contractors. This positive observation needs to be considered as the backdrop to all of our sector-specific findings.

Organization and Staffing

The Environmental and Social (E&S) organizations within EHL are fully established and have continued to expand since the last IESC visit in November 2011. The environmental side of the E&S organization is fully functional with occasional gaps associated with only normal turnover, position changes, or with logistical problems and has the appropriate organization to function as planned. The social component (L&CA) of the ESMS organization continues to be experiencing a high turnover of managers, technical specialists and general staff, but a new permanent manager has been appointed and many of the position gaps identified from the November field trip have been filled. At the time of the November field visit the IESC identified a concern that the absence of stable management and of a fully resourced L&CA team represented an area of risk for the effective operation of the ESMS. This concern has not been entirely alleviated, but the situation has improved over the past four months. At this stage the social organization

has achieved a high national content (>85%), but the environmental organization needs to continue its efforts to increase national content.

After the last field visit the IESC had strongly recommended for the Project to assign a mobile troubleshooter specialized in labor and industrial relations, who can act above all parties. This person would visit all Project sites on an ongoing basis, monitor labor and IR issues across the Project and mobilize swift and effective Project responses. EHL has demonstrated a partial follow up to this recommendation. In Q4 of 2011 EHL already had a Cold-Eyes review of the Project's IR strategy carried out by an EM Global Labor Advisor. In Q1 of 2012 EHL had a human resource/industrial relations expert from the ExxonMobil Production Company conduct a second Cold Eyes review, who confirmed the strategy as a robust framework for measuring IR performance of contractors. IESC welcomes EHL's intention to have this specialist make regular visits to the Project.

Environmental and Social Management System

EHL's environmental and social management system (ESMS) is fully in place. A deficiency previously identified has been developing and implementing a policy for the stewardship of associated facilities and activities, but a procedure is now being implemented and the situation is no longer considered a non-conformance. The requirements of the Milestones Schedule are now complete, except for biodiversity MS 15 and MS 16 where delay is in agreement with IESC recommendations. Although procedures for incident reporting, especially social incidents, have been developed, we are not sure if all serious social incidents (e.g., occupation of Gobe Camp) are part of the notification process and we recommend that EHL go back to their notification criteria to see if anything is missed. Albeit an implicit aspect of the Project's ESMS, effective and adequate L&CA work is now seen as vital in reducing Project security risks outside the fence and to reduce spillover of conflict inside the fence. The Project's ESMS as applied to labor and industrial relations issues also continues to develop towards a more consistent and overall coverage.

Environmental Management – Waste and Wastewater

No significant issues were identified with respect to solid waste management. Infrastructures and procedures are in place and all EHL Contractors are self-sufficient. The landfill at the LNG Plant site is operational and the Hides Waste Management Facility (HWMF) is nearly operational. The HWMF is now expected to be able to handle the waste that was to be disposed at a landfill to be constructed by EPC5A at Gobe and, although plans need to be finalized, EPC5A is working under the assumption that the Gobe landfill will not be constructed. Significant progress has been achieved in identifying qualified companies for recycling some problem waste streams.

Wastewater treatment plants are now in place throughout the Project and municipal facilities are not used, but during the November field visit some significant problems were observed with respect to the quality of effluent discharged. In response to this observation, the Project has undertaken a major cross-contractor initiative to correct deficiencies with respect to WWTPs. Defective components and processes have been flagged and remedial solutions identified. Procedures to improve the effectiveness of effluent testing have also been defined. The overall process to improve WWTPs is a work in progress. The Project is not there yet, but is headed in the right direction.

A social issue identified during the November field visit was the quality of community drinking water supplies with the note that it is especially important not to contribute to this situation by improper wastewater management. It is emphasized that discharges do not represent a significant environmental risk as leach fields are being utilized and discharges do not go directly to surface water. Furthermore, EHL has formed a Water Task Force integrating environment, social and health teams to assess/respond to water complaints and this approach is proving effective in mitigating community water problems.

Erosion and Sediment Control

Significant effort continues to be placed on controlling erosion and generally good success was encountered. A significant achievement is the completion of the sediment control dam at the HGCP site, a structure appropriately sized to contain the remaining spoil from HGCP excavations. Other large sediment control structures have been constructed around the HGCP site. Surface runoff is completely contained at the LNG Plant site by large sedimentation ponds. Erosion and sediment controls at the Komo Airfield are still substantial, but at the time of the site visit heavy rains had exposed the vulnerability of some systems. Uncontrolled dumping of spoil at the edge of the construction area creates a situation that is difficult to manage. 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. This observation by itself indicates that more effort needs to be undertaken to control sediment runoff at the Komo Airfield.

Ecological Management and Biodiversity

The Biodiversity Working Group protocol is now finalized and signed off, with their key short-term remit to steward delivery of the Offset Delivery Plan (ODP) and the Biodiversity Monitoring Plans. Programme Monitoring Activities (PMAs) continue to be refined, with feasibility of using satellite imagery to detect Project-related indirect impacts now being proven (PMA-1). Benchmarking plots and criteria against which successful re-vegetation will be determined has progressed (PMA-3), and will undergo further refinement in the next few months. The breadth of current PMAs is currently under consideration to determine whether there are any potential gaps in the ability of the Project to monitor successful Biodiversity Strategy implementation. The draft over-arching project-wide Biodiversity Monitoring Program is due to be finalized 3Q 2012.

Development of the ODP continues and the technical rationale refined; publication of an initial draft ODP for Lender review is also anticipated during 3Q 2012 (Milestone#15). Although this is later than the original schedule, the IESC feels it is important for EHL to fully engage with both internal and external stakeholders to ensure all expertise, advice and conservation priorities can be taken into account. Nevertheless, the IESC encourages the Project to aim to adhere to this current timeframe. Although details of the Plan have not yet been seen, the scope of the work and structure of the Plan appear to be appropriate to the type and scale of the anticipated offset.

EHL's Lake Kutubu conservation program collaboration with the WMA Committee has suffered delays, but the Project's sustainable fisheries program is expected to commence during 3Q 2012.

Pre-construction surveys are almost finished, with only Hides Ridge yet to be completed. The project footprint continues to be tightly managed. The Heartbreak Hill restricted RoW width is a notable example of careful management in difficult terrain. Side-casting management into sinkholes on Hides Ridge is apparent, in what is obviously difficult construction terrain, but further encouragement is imparted to ensure that surface coverage by side-cast material is kept to a minimum.

Recommendations focus on: understanding and mitigating hunting as an indirect impact; the scope and content of road-use monitoring; familiarity with the global standard for biodiversity offsets and calculating anticipated biodiversity losses & gains; innovative ways to reduce the Project's footprint; and waste prevention to avoid ecological harm.

Induced Access

Discussions were held with Operations on their approach to choosing permanent access roads to key locations on the RoW. Operations presented several access proposals, most of which will make use of short sections of existing RoW, rather than requiring new access roads; where these are in the vicinity of public roads, mitigation actions will be required to avoid uncontrolled access.

The IESC commends and further encourages that each and every decision on permanent access to the pipeline RoW be taken on a case by case basis and recommends that each decision be fully justified to ensure that long-time term access is absolutely necessary, that it is assessed against the aims and intentions of the Induced Access Management Plan (and other plans as necessary), and that the best ecological long-term option is ultimately chosen. Preventing induced access needs to be a key focus in the Operations ESMP.

Where wider road-access decisions under the control of the national Government might have repercussions on the Project's ability to meet its induced access commitments, the Project needs to be consider what further mitigation actions might be needed. Recommendations focus on: fully justifying permanent Project roads and their longer term controls (or reinstatement); operational input to the Road Register, and the noting of the intended plan for each access created; and assessing induced access scenarios related to decisions outside of the Projects control.

Reinstatement

RoW reinstatement in the southern Upstream is proceeding well, within sections KP 293 - KP 278 and KP 226 – KP 203, and at several off-RoW sites. The Omati swamp section of RoW is now almost devoid of vehicular access. Reinstatement efforts are also progressing well at Komo, where site slopes are being stabilized and re-vegetation encouraged on soils in areas where earth-moving and construction is complete.

Movement restrictions meant we were only able to see reinstated sites around Hides by helicopter, but it is understood that external experts are working with the Project to develop their reinstatement assessment methodology, to develop a mechanism to gauge the various stages towards successful reinstatement. A centralized register is under development, to assist with the tracking of all sites requiring reinstatement; this will prove valuable not only for longer-term monitoring but also for handover between contractors to EHL, and from Construction to Operations.

Recommendations focus on: sufficient nursery capacity; trialling native soil stabilizing vegetation for Hides; learning from information in the Road Register to close any loops; and use of static, repeatable photo-points to gauge progress.

Quarantine and Invasive Species Management

Quarantine inspections have not caused any delays to the delivery of imported equipment to site. However higher levels of inspections are still being experienced than originally anticipated. Re-fumigations following inspection are also more frequent than expected, and further information should be sought from NAQIA as to why this might be. Quarantine data from most contractors is forthcoming, and from early 2012 is now being managed through the SHE reporting system. A Quarantine Index is now operational, to record quarantine-related events as observations and non-conformances.

Onsite weed control measures are being undertaken following regular inspections, with some Priority 1 and Priority 2 species requiring active management. Although no new weeds have been found, there have been some range extensions. Although not all of these can be traced to the Project, EHL and Contractors are acting promptly to manage and eradicate when colonies are found. An external expert review was being completed at the time of our visit, and a series of recommendations were being reviewed and initiated.

IESC was able to visit the laboratory established at Moro camp to undertake soil analysis for the purposes of identifying *Phytophthora*-related dieback. The advanced expertise and diligence being applied is notable, especially with regard to investigations into a better understanding of (the causes of and mitigations required to avoid) dieback spread. As a result, preventative measures are being proposed to avoid the spread to *Nothofagus* forests along the Hides and Homo-Benaria Ridges, which are to be deemed High Value Sensitive Zones. Preventative measures include controlled access, vehicular wash-down stations and certificates, along with a heightened dieback and weed awareness education program for key personnel.

IESC recommendations focus on: advantages/disadvantages of Quarantine Inspector specialists use; re-evaluation of quarantine inspection sign-off to ensure key learnings; run-through of Incident Management approach with NAQIA; development of a centralized Weed Register and expanded weed identification guides; frequency of specialist reviews; and expediting contractor processes following *Phytophthora*-related analysis.

Procurement and Supply

EHL and its contractors combined have spent almost US\$2.1billion (K3.6B) as of March 2012. 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 currently working on the Project, 70% of which is actually provided through Lancos. Approximately 8,500 PNG nationals are currently employed on the Project where the total workforce now exceeds 16,200. Females represent about 7% of the total labor force, of which 93% are PNG nationals. Although much higher than the original construction target of employing approximately 3,500 PNG nationals out of a total workforce of about 12,000 at peak (~30 percent), the total of employed nationals is slightly less than Q4 2011 and over the past three months the percentage of PNG nationals has dropped from 60 to 51 percent of the workforce. This trend is expected to continue in 2012 with the demobilization of the Upstream Infrastructure contractor (C1) and the increasing requirements for highly skilled labor at the LNG Plant and HGCP sites.

In terms of supplier development, the IBBM Training Center offers initial business assessment and capacity building and facilitates access to finance and Project related business opportunities. To date, more than 180 companies have been assessed, more than 4,000 training days and 500 advisory and mentoring days have been delivered, 10,000+ PNG Entrepreneurs have been assisted and 1300+ PNG Business and Lancos have been entered into the IBBM Supplier Data Base. Moreover, IBBM delivered upgrading courses in the

context of their Directors Training program, i.e. Business Basics and Shareholders Training (level 1) and Fundamentals of Business Basics and HRM/IR (level 2).

An issue with respect to procurement and supply is still extending Project stewardship to organizations and facilities primarily dedicated to serving the Project. The process has started, but is not fully rolled out. After the November field visit the IESC had recommended for the Project to work on capacity building and skill development on workers' rights, worker-management relations, etc. for the Project's supply chain. Consequently, IBBM developed and delivered a training course on human resource management and industrial relations in February, with attendees from EHL, ECPs, from the main umbrella Lancos - LABA and HGDC, and from DLIR. IBBM has demonstrated through its monitoring instruments to be capable of monitoring Project-related local businesses in terms of their labor performance. However, the IESC still recommends that a verification and monitoring process for (new) PNG suppliers be developed with respect to the occurrence of child or forced labor or lack thereof (see Section 5.9.2.1).

Land Access and Resettlement

Resettlement action plan planning and documentation has fallen behind Project requirements to access land, particularly for EPC5A. Resettlement team negotiations in Homa-Paua, where the Huli landowners have prior experience of negotiating land access and compensation from the oil project, were proceeding slowly. In this area, the pipeline is also moving into more challenging topography with a consequent need for some re-routes which complicate negotiations with affected landowners.

Resettlement was observed to have occurred at Paua and along the Hides logistics route even although RAPs for these areas had not been approved. A Level II non-conformance has been raised. Corrective actions have been recommended (see Section 5.3.2).

In spite of six weeks lost time in 2012 due to the landslide and security issues, an additional 8 project-built houses had been completed since the previous review. The Project indicates about 19 further houses will need to be built, with an estimate that these will be completed by October 2012 (subject to weather and security). Given the constraints, the IESC assessed progress with house delivery as satisfactory. The Level II non-conformance has been lifted, subject to efforts to complete housing by October 2012 being maintained.

The Resettlement team had responded well to the Level 2 non-conformance for not providing special attention to vulnerable households affected by relocation. The Project had appointed two appropriately skilled and experienced staff to be responsible for assessing vulnerable peoples' need for support and for managing its implementation. A Vulnerable Committee has been established to vet assistance to be offered. The register of vulnerable households identified 49 vulnerable households with 15 identified as 'high priority' for assistance. Support measures were being delivered to 3 'high priority' households at the time of the review. The Level 2 non-conformance has been reduced to Level 1.

Overall numbers of households for physical resettlement were reviewed. The total number of physically displaced households looks likely to be close to the estimate made in the RPF. Most significant changes in physical displacement relative to Resettlement Policy Framework (RPF) estimates were as follows:

- a reduction in resettlement numbers due to reduced works along the Heavy Haul Road (78 households actually displaced versus the original RPF estimate of 253 households);
- an increase in pipeline resettlement estimates as the Project gets a clearer picture of likely resettlement numbers at the northern end of the pipeline route (113 households affected versus the RPF estimate of 50 households); and
- Spine line resettlement along the final route between Wellpad B and the HGCP where significant influx has occurred (estimated 25 households, not anticipated in the RPF).

Livelihood Restoration

The agricultural livelihoods program continues to deliver a broad range of initiatives. The focus since the last review has been on distributing plant stock, seed and poultry (chickens and ducks). Training has also been provided in care of grafted citrus, care and management of poultry, and an introduction to vegetable seedling nurseries and transplanting of temperate climate vegetables. These initiatives have the potential to diversify and introduce a cash earning component to household livelihoods.

The food processing courses directed towards women (baking; kaukau, banana and cassava processing for flour; fruit processing and jam production; marita processing) also appear to have had a very positive mobilization impact and created significant cash earning opportunities for women. EHL has introduced baking to over 500 women in the Hides and Komo areas. Cakes and scones have become a significant income source for some women who can earn 600-800 kina (about USD 280-380) a week.

Challenges going forward include:

- extending the geographic reach of livelihood programs beyond the Hides-Komo area to the newer areas experiencing resettlement and loss of gardens in Homa-Paua, Angore and Benaria;
- developing a Project-wide livelihood monitoring reporting system that consolidates findings across the whole project, not just individual resettlement areas; and,
- preparing for the second phase of livelihood program delivery targeted to address the needs of a demobilizing Project workforce.

Community Impacts Management

The Water Task Force in Upstream North had made excellent progress in addressing water impacts and water related grievances. Of the 39 water grievances received by the Project to date, 22 have been closed with the balance expected to be closed by June. By this time, the balance of water structures will have been delivered. Only one water-related grievance was received in February, down from 6-12 per month in the preceding months.

Pipeline construction is now moving into areas where it impinges on roads used by communities more than it has done in the past. There are three complaints in the grievance register relating to damage to roads and a bridge. The IESC would anticipate that such complaints will increase, as is always the case on pipeline projects where construction vehicles share roads, culverts and bridges used by communities. At present, it has been made very clear to the IESC that road-related grievances (where they relate to a public road) are treated as 'issues', not grievances. With this arrangement, it is unclear to the IESC how Project management will become aware of road damage-related complaints and any lapses in contractor performance or adverse community reaction thereto. It is also unclear how the Project can fulfill its obligations under commitments 27.003-27.006 of Community Infrastructure Management Plan if damage to roads or infrastructure is not flagged by the grievance process. It is recommended that EHL review these commitments and ensure that it has effective processes in place to meet them.

Community Security

The IESC was given a full account of actions taken in response to the pay-back incident by Hides Security Services personnel at Komo reported in the November IESC report. The incident has been thoroughly investigated. The two perpetrators have been identified and formally charged. The IESC was also briefed on the site security review plan which covers all EHL and contractor sites. Amongst other items, the program reviews cover all aspects of the Voluntary Principles implementation, with many security parameters being reviewed on a monthly basis. The related Level II non-conformance is closed.

The IESC was also briefed on EHL's risk assessment and plans for the forthcoming national elections. Comprehensive plans are in place to ensure that Project constructive activities will be able to continue through the election period.

Community Support Strategy

During the present review, the IESC was impressed by the progress of Community Support initiatives in the Komo airstrip/Komo station area where sustained effort has been directed towards 'personal viability training', community mobilization, leadership training and community organization formation. A recent incident in Komo demonstrated the value of these kinds of 'soft' programs. The Komo Community Issues Committee (CIC), a body set up with Project assistance and that has received training through the Community Support program, was able to moderate local community reaction to a traffic accident and payback killing. Beyond Komo, EHL needs to work hard to concentrate equivalent Community Support effort and resources in locations such as Hides, Juni, Homa-Poua, Angore and Benaria.

Stakeholder Engagement and Consultation

The Stakeholder Engagement team is entering a challenging period. Specific challenges going forward include the following:

- managing and effectively responding to the rumors and mis-information that may circulate during the election period;
- community preparation for work force demobilization; and
- planning an education campaign relating to safety and land use restrictions to apply during pipeline commissioning and production.

Experience from other large projects indicates that the election period will present particular challenges for managing rumors, mis-information and implied commitments made on the Project's behalf by aspiring electoral candidates or troublemakers. Work force demobilization places great pressures not only on demobilizing workers, but also on their families and communities. The Stakeholder Engagement team has an important role to play in making Lancos, community leaders, local and provincial government and communities aware of the timeframes for demobilization, explaining anticipated impacts and describing Project initiatives to assist workers and their families to receive support and counseling.

Grievance Management

The grievance system is operating satisfactorily. The system has received fairly steady 30-35 grievances per month since August 2011. The IESC considers this figure relatively low compared to similar sized construction projects. Project Management should be mindful that a low rate of grievances may indicate either good project performance in managing adverse impacts, or poor grievance capture. In spite of a vigorous rebuttal by the Project, the IESC remains concerned that complaints about construction impacts on roads (for example) are not reaching the complaints register. This may mean that a significant area of adverse impact and social risk is not visible to Project Management. See further discussion in Section 5.6.2.

Labor and Worker Conditions

Project wide issues

As compared to the situation during the November visit, the IESC observes that EHL is gradually moving towards a more 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 has already developed a Project-wide IR strategy that has been reviewed twice now by ExxonMobil experts, once in Q4 2011 by an ExxonMobil Global Labor Advisor and once in Q1 2012 by a human resource/industrial relations expert from the ExxonMobil Production Company (EMPC). The latter confirmed the strategy as a robust framework for measuring IR performance of contractors, but also observed that OCN and human rights issues are worded in high-level principles rather than in practical steps and that no clear distinction is made between mandatory requirements and best practice. EHL intends to have this specialist make regular visits during the remainder of construction phase. The IR strategy has been rolled out in the field via EHL's Contractor Interface and Compliance team, allowing EPCs to adopt the strategy as appropriate given local circumstances and contract conditions. EHL continues its focus on IR strategy implementation through regular updates and other initiatives. For example, in order to identify potential indicators of effectiveness EHL is currently analyzing trends of employment-related work stoppages. In February EHL convened an internal, multi-stakeholder demobilization workshop and expects to have a project-wide demobilization strategy ready by the end of April 2012. Finally, IESC welcomes the clear stance EHL is taking on the vital relationship between L&CA work and containing security issues. Effective and adequate L&CA work is now seen as key to reducing Project security risks outside the fence and to reducing spillover of conflict inside the fence. From a labor perspective this means enhanced harmony and stability on the work floor, a change for PNG/OCN/expat workers to focus on team building and transforming the work floor into a second 'wantok' that commands loyalty as well.

Employment opportunities, Lanco performance and workforce development

Progress is being made in terms of Lancos management of worker issues, where the total Lanco workforce now exceeds 8,000. The main Lancos have reached agreements with banks to open on-site branches, to facilitate payments through the banking system, to offer safe access to wages and to saving opportunities. LABA entered into an agreement with Bank South Pacific (BSP) and HGDC is in the process of

concluding an agreement with Australia and New Zealand Banking Group (ANZ). Along the pipeline, Lancos are in different stages of development: in Blocks 1 and 2 Spiecapag is demobilizing; in Block 3 KRS is mobilizing and is facing some problems concerning entry into Huli territory as this Lanco lacks Huli governance; in Block 4 the manpower contract for HGDC / Spie was signed well over 12 months ago. The only contracts still under negotiation are support service contracts – security etc.

The Business Development Team is continuing its efforts to professionalize Lancos, e.g. through improving their HRM system and the quality of Lanco administration, a director mentor program, development of monitoring tools – business score card, KPIs etc. The vast majority of Lancos consist of nationals. The Project is working towards a situation where management support roles are being taken up by nationals as capacity and competency increases. Moreover, in February the main Lancos, LABA and HGDC, along with some EHL and contractor staff and representatives of DLIR, received HRM/IR training at the IBBM Enterprise Center. The training offered covers topics such as: international labor standards; worker engagement and relations; HR Policies; contracts of employment; remuneration; occupational safety and health; diversity in the workplace and workplace discrimination; employment tribunals, and; demobilization. This training was provided to LABA and HGDC as they are responsible for supplying the bulk of local labor to the Project and will also be involved during the operational phase. The involvement of all the smaller Lancos in the Project, such as along the pipeline, is of temporary nature and does not justify such investment. In these instances, ‘on-the-job’ training is seen as more appropriate. Finally, Lancos are increasing efforts towards nationalization of their staff.

In terms of workforce development, EHL and its contractors have delivered more than 3,000 courses resulting in more than one million hours of training, with over 164,000 training hours in Q1 2012 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 focus 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, more than 1,600 PNG nationals have graduated, of which 30% are female. POM CTF will close down, with a last graduation expected at 30 March 2012. Henceforth, Plant site contractors will train workers on-the-job. The Highlands based Juni Training Center had just delivered its first group of graduates and has a second group in training.

Recruitment Policies and Procedures

Previous IESC reports have identified potential recruitment issues associated with OCNs. EHL is working to verify that OCN recruitment practices are consistent with Project policy and over the past quarter sent out a questionnaire to the EPC Contractors on their actual policies and practices. This questionnaire touched on topics such as: worker document retention policy; individual work contracts; recruitment fees; grievance management process, and; management-worker interface mechanisms. EHL designed this questionnaire on the basis of the Oil and Gas Industry Guidance on Voluntary Sustainability Reporting (2nd edition 2010) by IPIECA/API/OGP. EHL found that the response from the EPC contractors was mostly positive and provided no reasonable basis for concerns on forced or child labor. Nevertheless, Indian OCNs related to the IESC that the agency responsible for their recruitment did seek payment in excess of the formal recruitment fee paid by EPC5B, MCJV, who employs them. The EPC Contractor is unaware of this practice and selects its 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 recommends for EHL to request its contractors to review recruitment practices of their suppliers of OCN workers; not so much formally on the basis of the legitimacy of these agencies, but 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.

Worker-Management relationship

Due to the short-term involvement of the offshore pipeline contractor EPC2, IESC could only meet with them during this March visit. EPC2 and its sub-contractors have small work force contingencies and only hire their staff directly and not through agencies. EPC2 has had no work stoppages, other than one 2-hour incident because of pay delays and has no workers’ council. It does have a workers grievance mechanism, but no women’s version as no women are employed. IESC considers this contractor as peripheral in terms of labor and IR issues, both due to the short duration that the contractor is engaged with the Project as well as its generally acknowledged excellent working conditions.

At the LNG Plant site the EPC3 workers council has come out of its pilot phase. Elections are held every three months, which IESC considers counterproductive to achieving its objectives. The last election took place in February. IESC also observed strained relations between CJJV and the workers council, which represents not only CJJV workers, but also those of its sub-contractors. Main causes are discontent of the workers council with current procedures for running workers' council meetings, contractor response to workers' absenteeism, the continued ban on cell phones on the work floor; and the management style of one of CJJV's main subcontractors, Daewoo. IESC noted that CJJV does offer members of the workers' council an information package on workers' rights, labor standards etc., but no capacity building such as the 'safety champions' training program. Members therefore lack mature communications skills. Finally, EPC3 has decided not to establish OCN workers' council, because they foresee too many problems with bridging the various languages, cultures among OCN workers, etc.. The IESC recommends for EHL to closely monitor workplace relations at the LNG Plant site and more specifically for EPC3 to have its workers' council re-elected no more than twice a year, to train workers council members to become mature dialoguing partners and to opt for immediate disciplinary action against intimidation of fellow workers (by cell phone or otherwise) instead of continuing the ban on cell phones. The use of cell phones on-site was banned last August at EPC3 following a general strike during which cell phones were used to intimidate fellow workers unwilling to go on strike.

EPC4 and C1 in the Hides area still intend to trial safety champions meetings that include PNG/OCN/expat workers, before embarking on a workers' council. EPC4 reported that no workplace related incidents have occurred since their firm, yet fair handling of the September 2011 incident (see IESC November 2011 report) and that current problems are due to community issues. EPC4 analysed key factors that played a role in reaching this state of constructive work floor relations as follows: supervisors re-trained, code of conduct signed by workers, grievance and disciplinary procedures re-emphasized, and cultural awareness training improve. EPC4 has never considered a ban on cell phones as a means of addressing work floor issues.

EPC5A does not have a workers' council or any alternative mechanism in place, nor any plans in that direction. EPC5A has a general workers' grievance mechanism in place, but this mechanism was designed in the context of a PNG worker and does not relate to OCNs. Also, EPC5A is the one contractor lagging behind in developing a women's grievance mechanism, but now intends to accelerate its development.

EPC5B is successfully continuing its fortnightly meeting with OCNs and facilitates meetings with interpreters (Tagalog, Urdu, and Hindi). These meetings are highly valued by OCNs and have contributed considerably to a sense of security among OCNs, which was vital after the series of security and work place incidents in 2011. EPC5B now has two more successful committees in place, one being the Camp Committee with members representing EHL, MCJV iPi and Lancos, but also including a male and female worker's representative, and the other one being the Community Issues Committee. The latter committee consists of 28 members, all of which are people with a certain standing in the local community and are nominated by the 11 clans that hold claims over the Komo airstrip land. The EHL CIC (Contractor Interface and Compliance) leads for EPC5B have re-defined and strengthened the Community Issues Committee by defining a Terms of Reference (ToR) and protocol for membership and having committee members go through Personal Viability Training (PVT). Complementary to this, EHL CIC leads designed a 'Community Relations Revival' plan addressing issues such as employment, training, local business opportunities, provision of water, compensation etc. to restore trust of local communities in the Project.

In summary, worker grievance mechanisms and women's grievance mechanisms are now in place across the Project – except for a women's grievance mechanism still lacking at EPC5A, although they vary greatly in quality. The women's grievance mechanism at EPC4 looks promising and could well prove an example of best practice for the Project. The new female confidante is directly employed by the main contractor CBIC and not by the sub-contractor dealing with camp catering and housekeeping that normally hires the majority of local women. She has extensive and very relevant experience and will also proactively deliver education and outreach to women workers. IESC recommends for the Project to share best practices as identified at EPC4 (strategic work place interventions after the September 2011 incident, role and position of women's confidante) and at EPC5B (Community Issues Committee, Camp Committee, OCN fortnightly meetings, traffic-light demobilization system - see chapter 6), with the other contractors.

Conditions of Work

IESC noted in November 2011 that at EPC5A working hours and R&R for OCNs are high when compared to the other contractors. In terms of overtime, OCNs at EPC5A remain at a disadvantage due to extensive

commutes between camps and work locations along the pipeline. These working conditions may extend their working days to a critical point from a health and safety perspective, which needs to be monitored. Also, working hours for OCNs at EPC5A with a 7-day workweek and a 20/2-rotation-schedule are exceptional. Therefore, during this field visit, IESC looked into 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 is not certain that all contractors are compliant with PNG labor law. EHL received labor law exemptions for two minor issues in place since March 2012, but EHL has not carried out an update on the exemption status of its contractors. It is expected that by the time of the next field visit EHL will have conducted a thorough review of Project compliance with PNG labor legislation on working hours, including breaks, days of rest, rotation schedules, etc. and if exemptions have been obtained for any variances.

Demobilization

Demobilization is recognized as a critical worker issue that has significant consequences to local communities. EPC Contractors C1, EPC4 and EPC5B are intensifying coordination on mutual demobilization and mobilization needs. EPC5B in particular, has made substantial steps towards a sound demobilization strategy since the last IESC field visit and has an approved demobilization plan. EPC5A suffered an unfortunate demobilization incident at Gobe Camp where demobilized workers assaulted senior EPC5A personnel. Analysis of the incident brought a root cause to the surface that only more underlines the need for a consistent, Project wide approach. Workers previously employed by C1 in pre-construction activities along the pipeline route were expecting a 'good behavior' bonus for all days worked and for not having stopped work. EPC5A was unaware of this practice and suffered consequences upon paying the regular two-week notice.

Gender

During the March field visit IESC was not further updated on Project initiatives or developments in the field of gender, i.e. women-in-impacted communities and women-in-employment. During its next visit the IESC would like to discuss further this subject.

During the last IESC field visit the Community Health Program was conducting a successful 'marriage and relations counseling' program at the community level. IESC then stressed the opportunities this program could potentially offer the Project by adding a specific focus on violence against women-in-employment in this counseling program. At the time this view was actually shared and validated by program staff, as they were aware of the fact that alcohol related violence against women and children, confiscation of wages by male family members and (violent) domestic implications for women employed by the Project are widespread. At this point however, the IESC wishes to express some concern for the continued quality of this program, given the recent turnover in program staff and apparent gaps in the handover from previous to present staff.

The IESC and EHL discussed 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. Oxfam recently commissioned the LNG Impact Listening Project to gain insight into people's experiences of the resource extraction project, which describes amongst others the relation between increased influxes of money, alcohol abuse and domestic violence. A Highlands-based non-governmental organization, Family Voice, is more specific and warns that unless the government takes immediate action to prevent the risk of increased cash flows from the nation's largest resource extraction project, which is escalating alcohol consumption and eroding family cohesion, violence against women and girls will very likely to increase. The IESC urges EHL to take this issue up with relevant governmental bodies as it may impact Project reputation.

Camp Management

Camp management is an important component of the PNG LNG Project. Camp construction is progressing to schedule, 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 risk mitigation measures proposed in the risk assessment reports for personal-space-reduction at EPC3 and in the Upstream Area. During the March field visit the IESC noted that EPC4 and C1 are either experiencing or expecting problems with available space/person. EHL 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 foresees upcoming

problems with living space in the camps. Drilling will occupy part of the C1 accommodations, as the Well Pad A camp can no longer accommodate all staff. EPC4 therefore faces a decision to divert from its original target of 4-to-a-room to 6-to-a-room for lowest ranked workers. The IESC observation is that rooms would be too cramped, air quality would be compromised enhancing the risk of spread of airborne diseases, such as TB and rooms will not fit the original lockers thereby reducing private storage space for workers. Camp grievance mechanisms have improved since IESC's November visit. As most women employed by the Project are working in catering and housekeeping jobs in the camps, the women's grievance mechanisms is most applicable within the camp context.

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 continues to be a major focus, especially in consideration of the fact that the number of workers is approaching its maximum and now exceeds more than 16,200 workers. With this growth in the workforce, EHL has focused on identifying camp services risks, in particular food and potable water safety; vector control; camp hygiene and sanitation; and camp industrial hygiene across the Project. The Project continues to focus on malaria control measures after an increase in serious malaria cases in Q1 2011. By the end of March 2012, the malaria case incident rate was less than 10% of what had been recorded the previous year. Another communicable disease affecting project personnel is Tuberculosis (TB). EHL has placed greater emphasis on tuberculosis diagnosis and testing, in particular with the addition of new TB diagnostic equipment for utilization at selected worksites to ensure accurate and expedient analysis for suspected cases. The Tuberculosis Case Incident Rate also continues to be lower than at the beginning of 2011, although there were three confirmed cases of community-acquired tuberculosis during Q1 2012. Tuberculosis cases have undergone re-classification as either Index cases (community acquired from outside camp or worksite) or Serious Illness Event cases (a confirmed tuberculosis case acquired from someone within a camp or worksite).

During the March visit the IESC also looked into other occupational health issues. Most medical staff interviewed testified that no systemic occupational health issues of a physical nature had come to their attention, such as exposure impacts and the like. Nevertheless, most did notice an increase in 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. Medics expect this situation to only worsen as work pressure and stress will be increasing due to construction targets nearing deadlines.

During previous visits the IESC had suggested to further investigate 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. During the March field visit IESC noted that in various camp canteens practical measures had been taken to reduce caloric intake and enhance intake of nutritious food. Measures varied from moving dessert tables to the back of the canteen to not allowing more than one menu choice on a plate per serving, while allowing for repeat servings. The IESC sees these as welcome and more dynamic measures, complementing the more passive poster campaigns in canteens.

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), down to 0.46 for the for the entire Project to date, but the Project also recorded its fourth fatality on February 10, 2012, this time involving the death of a person working for KQCJV, a Lanco subcontracted to MCJV at the Timalia Boulder Pit (TB1) as part of the PNG LNG Project. The victim was a spotter who was struck by a front end loader operating in the vicinity of a stock pile and the accident related to both the front end loader operator and the victim not being aware of each other's movements. A question asked of the IESC by several Lender representatives was whether or not this number of deaths is abnormal or typical for a Project of this size. Although the position of EHL is that all accidents are preventable, the first three accidents were extraordinary and of the four deaths, this latest might have been preventable had supervision of ground activities been better and if there had been better awareness of blind spots associated with large construction equipment. Our experience is, unfortunately, that deaths do take place in association with large development projects and in spite of the fatal accidents, this one is better than most and they happened in spite of a comprehensive H&S program. All of the EPC Contractors have undertaken

impressive awareness campaigns to make sure safety is everyone's top priority. EHL also continues its extensive National Safety Champions program. Training programs are rolled out on Field Safety in Uncontrolled Environments. To date 225+ Champions, 400+ First Line Supervisors and 225+ Field Safety personnel have been trained.

Community Health: The IESC has commented in a number of previous reviews that the Community Health Program undertaken by EHL is one of the most comprehensive ever undertaken for a private sector development project and was likely to leave behind a positive legacy. During the present visit, the IESC was concerned to learn about the abrupt departure of the former Community Health Manager and Newfields, the community health consultants, who together were instrumental in designing and setting up the program. It was very clear that the remaining staff were not sufficiently conversant with the objectives of the Community Health program and detailed arrangements for its implementation. The program is a major EHL investment that has surrounding it a web of outside dependencies and expectations that cannot be abruptly discontinued. The IESC strongly recommends that the former Community Health Manager and key Newfields specialists be recalled, if not to continue the program in its totality, at least to undertake a comprehensive handover.

The IESC is also concerned at the protracted delays in releasing the results of the Integrated Health and Demographic Surveillance System baseline socio-economic survey and baseline nutrition survey. The iHDSS surveys were designed to provide a platform for both community health and broader social monitoring. A level 2 non-conformance has been raised for the continued delay in issuing what is a critical Project monitoring commitment.

Community Safety: Community Safety outreach programs in the Hides - Komo area are managed primarily through the L&CA organization and the individual EPC contractors utilizing field staff, including traffic control personnel and spotters to protect the local community. The issue of community incursion into Project workplaces is still an issue, but progress is being made with the construction of a perimeter road around the Komo airfield. The Project has also been conducting roadshows in advance of pipeline construction in the area from Gobe to Homa/Paua to communicate general construction safety messages, including about heavy equipment transport. Up until the end of this IESC mission, the Project had maintained a remarkable record of traffic safety with respect to incidents involving third parties, but on March 15 the first fatality to a bystander took place when a Transwonderland truck returning from a delivery to Hides for the Project struck and killed a woman in Chuave, between Lae and Mt. Hagen. The incident is still being investigated, but the Project is stepping up its community awareness programs.

Cultural Heritage Management

Cultural heritage continues to be well managed. Ongoing archaeological activities at the time of the site visit continue to be related mainly to pre-construction surveys and the management of chance finds, being encountered primarily along the wellpad access road and the pipeline ROW, and also the new Permanent Housing and Office where finds were made as a result of preconstruction surveying. 66 chance finds from the Komo airfield were turned over to the National Museum on February 9, 2012. An issue still requiring resolution is that artifacts from salvage work in the HGCP area transported to Port Moresby in late April 2011 have not been analysed. EHL is urged to ensure appropriate arrangements are in place for managing this material, as interpretation and reporting are keystones of cultural heritage management.

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, Louise Johnson (Biodiversity and Natural Resource Management Specialist), and Mark Pedersen (Aquatic/Marine Specialist). IESC Team member not in the field: Giovanni De Franch (Project Manager and Team Leader).

An activity that does not fall under the category of “audit” 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 a seismic exploration program partially within the footprint of the PNG LNG Project 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 seismic activity does have the potential to impact the PNG LNG Project if the actions of the seismic surveyors cause local communities to retaliate against EHL and we do recommend that seismic exploration equipment be decontaminated prior to operating on Hides Ridge. Nevertheless, none of these potential impacts relate to the ability of EHL to implement their ESMP. On that basis, D’Appolonia provided a letter of certification to EHL on April 5, 2012.

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 2456 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 except for the offshore pipeline 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 earthworks and site preparation at the HGCP site, construction of the Hides Waste Management Area and constructing well pads and the associated access road up Hides Ridge. Earthworks are still ongoing, but the HGCP site is partially turned over to EPC4 and camp areas, the utilities area, first process area and the helipad flyway have been turned over to EPC4. The HWMA is essentially ready to accept waste and the handover to EPC4 is on schedule for Q2 2012 delivery. Construction of the Hides Wellpad Access Road is ongoing and the Wellpad B earthworks are complete with the cellar installation underway; Wellpad C earthworks have started and cellar fabrication is in progress;
- *Red Sea Housing*: Current work undertaken by Red Sea Housing is the construction of the main construction camp for the LNG Plant (EPC3), expected to be completed in March 2012;
- *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 is expected for Q2 2012;
- *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 has now started. Detailed design of the offshore pipe is 100% complete and the deepwater offshore pipelay is approximately 85% complete. The last of the dredging for the Omati River section of the pipeline was reported to have been completed early January with trench maintenance work was being undertaken at the time of this visit;
- *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 is reported to be ahead of schedule. Construction of the LNG tanks is well underway and 50% of the north tank erection is complete. Jetty construction with the driving of permanent jetty piles, both working from the shore and also from offshore barges, is nearly two thirds complete. All seven turbine generators are now on foundations and construction of the process trains (Train 1) and piperack erection is progressing. The main EPC3 construction camp is occupied and its construction is expected to be fully complete by March 2012;

- *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 has started and pile driving for the plant foundations is about a third complete (750 of 2,200 piles). Engineering is at the 90% model review stage and all purchase orders have been issued. Factory Acceptance Testing for all major rotating equipment has been completed and equipment packed for shipment;
- *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 100 km of pipe has been backfilled and 54 km have been hydrotested. Construction of the Kopi Scraper Station is underway. The Gobe Spur line works have started and the Horizontal Directional Drilling (HDD) beneath the Wah River has been completed. In terms of camps, Camp 1 at Kopi (KP 266) is completely demobilized and the land reinstated; Camp 2 at Kaiam (KP 226) is nearly demobilized; Camp 3 at Gobe (KP 191) is just starting to demobilize to Camp 4 at Tamadigi (KP 145) where construction is ongoing and expected to be completed by the end of March; Camp 5 proposed to be constructed at Daware has been abandoned in favor of a brownfield site next to EHL Moro Camp B (KP 93) and site preparation has started at that location;
- *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. Earthworks are reported to be progressing to plan and are approximately 50% complete and a portion of the final base course has been constructed. Permanent facilities construction is underway including the Jet A1 Fuel Farm, Power House, Pump House, Fire House and Terminal Building. The erection of the asphalt plant is complete. High quality aggregate is being obtained from Tamalia Quarry TB-1 with the note that production was halted with the fatality on February 12, 2012 and had not re-started at the time of the IESC visit;
- *Drilling - Nabors Drilling International Limited*: Currently the detailed well design and technical specifications for the drilling program are being finalized with an integrated execution being planned with the Project. The current workscope is to drill 10 high-rate gas wells (8-Hides; 2-Angore) with two produced water disposal wells. The first of two drill rigs planned for the work (Rig 702) was in the process of being mobilized from Lae to Hides and the reassembly of rig components at Hides had started. The second rig (Rig 703) is being shipped from Houston. All major service contracts have been executed and ordering of equipment for the initial eight wells is complete.

In terms of current workforce as of the end of March 2012, EHL reports that about 8,500 PNG nationals are currently employed on the Project, representing about 51% of the total workforce now exceeding 16,200. This total of PNG nationals is much above the original construction target of employing, approximately 3,500 PNG nationals out of a total workforce of about at peak originally estimated at 12,000 (~30 percent). Females represent about 7% of the total labor force, 93% of which are PNG nationals.

1.2 SOURCES OF INFORMATION

The main sources of information used to prepare this fourth 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 M3.4	March '11	March '12	Procedures for identifying third-party facilities and activities have been defined such that the Project can initiate stewardship. Stewardship has not yet started and needs to be initiated.	I	Various parts of the ESMP to comply with IFC Performance Standard 1, Paragraph 5	Closed	The Project is implementing the "Procedure for the Categorization and Management of Third Party Facilities & Services."
M4.1	Jul-Aug. '11	March '12	The social component (L&CA) of the ESMS organization continues to experience a very high turnover of managers, technical specialists and general staff. Many L&CA staff positions remain unfilled. The IESC considers that EHL's inability to provide stable management, fully resource the L&CA team and retain key specialists represents an area of risk for the effective operation of the ESMS.	II	Performance Standard 1, ESMP	Closed	See Section 5.2
M4.2	Jul-Aug. '11		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	Open	Make a senior management member responsible and accountable for labor and IR issues at a Project wide level. Recruit specialist staff or specialized third party assistance to strategize and manage labor and IR issues at a Project wide level. Conduct an internal review to ascertain if labor management is fully consistent with EHL's own commitments and expectations. Review labor practices at contractor level as not all contractors seem to have the same practices, resulting in project wide inconsistencies.

² In order to better track project progress and accomplishments, the issues identified during each site visit will be 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
M 5.1	Nov '11		EHL has taken some promising steps in working towards a more centralized and informed strategy for dealing with the multitude of labor and industrial relations issues. Still, a consistent and overall coverage of Project labor and industrial relations issues seems to be lacking. The Project's main contractors are all monitored individually and Project response to events such as labor unrest, strikes, work stoppages, etc. varies widely and still depends too much on attitude and best professional judgment of individuals.	IESC Observation	ESMP in general	Closed	This observation has been closed, as the basic observation is covered under M4.2 and in any case is covered in the text in Sections 3.1.2, 3.1.3 and 6.2.3.
Environmental Issues – Waste and Wastewater Treatment							
M5.2	Nov. '11		WWTPs at all of the EPC Contractors except EPC3 have shown persistent discharge compliance problems.	I	Water Management Plan	Open	The Project has undertaken a major cross-contractor initiative to correct deficiencies with respect to WWTPs. Defective components and processes have been flagged and remedial solutions identified. Procedures to improve the effectiveness of effluent testing have also been defined. The overall process to improve WWTPs is a work in progress. The Project is not there yet, but is headed in the right direction.
M6.1	March '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	Open	The Project should actively prevent staff and contractors from discarding metal drinks cans and plastic take-away cartons. Use of biodegradable food cartons where possible and education and awareness raising can easily address this behavior, and negate the need for cleanup teams. (e.g. Section 4.1.2)
Environmental Issues – Noise							
M6.2	March '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		Open	It is not entirely clear from measurements reported by MCJV as to the nature of the noise exceedances, except that similar values have been reported over many months with no explanations provided as to the nature of the problem (see typical reporting provided in Table 4.1). Our basic recommendation is that EHL review the situation in the field to answer some specific questions: What is the source(s) of the noise? Are measurements made where people live (is this what is meant by "residential" in Table 4.1)? Are the exceedances daytime, nighttime or both? If people are exposed to excessive noise, determine if there are practical solutions to reduce the noise.

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Environmental Issues – Erosion and Sediment Control							
M6.3	March '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.	I	Erosion and Sediment Control Management Plan: M155, M64, M4, M207, A.	Open	This NC can be eliminated with a demonstration that an effective system is in place, and that the ecology has recovered.
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 Spicapag'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	EHL are considering the development of interim management plans ('handover punch-list' as discussed), plans to counter any transitional gaps that might potentially occur during periods of site handover (from Contractor to Company, or Contractor to Contractor). These should focus on issues such as reinstatement, erosion control and induced access, to ensure that a consistent management focus is retained during the handover period. Such temporary interim plans should ensure that roles and responsibilities are clearly defined, and include some form of monitoring to ensure effective mitigation is maintained during such transitional periods.
M3.11	March '11	March '12	An adequate fisheries baseline for both the Omati River and for Caution Bay still has not been established. The project committed to fisheries surveys on a quarterly basis, but results are far past due.	II	Performance Standards 1 and 6	Closed	Based on the results of limited monitoring, no significant environmental impact appears to have occurred.
M5.3	Nov. '11	March '12	The vehicle wash-down facility at KP 3.3 at the start of Hides Ridge is still not functioning in a manner to prevent the transfer of potentially contaminated soil.	I	Weed, Plant Pathogen and Pest Management Plan	Closed	EHL advises that the new permanent vehicle wash facilities are fully functioning. Due to work stoppages and disruption to vehicle movements in the Hides area, the IESC team was not able to visit the wash-down bays. However, we were able to view the facility from the air during a chopper fly-by, so can confirm its existence. This has provided us with sufficient evidence to be able to close-out the Issue

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Social Issues – Land Access							
M3.12	March '11	March '12	Social and physical/economic displacement impacts are not being addressed in site selection studies and pre-construction surveys. Social impacts, health and safety risks are thus not being identified and requirement contained in SMPs (RPF, Community Impacts Management Plan; Company Community Health Safety and Security Management Plan; Community Engagement Management Plan; Community Infrastructure Management Plan) are not being met.	II	Performance Standards 1, 4 and 5	Closed	Clear responsibilities for site selection and assessing social impacts have been identified. A systematic pre-entry checklist with defined management sign-offs has been adopted.
Social Issues – Resettlement							
M3.14	March '11		IFC PS 1 and PS 5 require that particular attention be paid to vulnerable people at each stage of the resettlement process. While vulnerable households are noted during RAP preparation, there is limited evidence of systematic monitoring or follow-up of their circumstances post-relocation.	Reduced to Level I	Performance Standards 1 and 5	Open	Solid progress has been made in completing corrective actions identified in the November 2011 review. See Section 5.3.2.8. The following actions remain to be completed: - Complete the audit/field verification of the current status of vulnerable households needs, including coverage of households outside of the Hides-Komo area; and, continue implementation of supporting measures identified. - Prepare a monitoring program and provide evidence of tracking.
M4.5	Jul-Aug. '11	March '12	12-18 months is not a fair and reasonable time frame for families to wait for replacement housing packages nor is consistent with timely delivery of compensation entitlements as required by IFC PS 5.	II	Performance Standard 5	Closed	See Section 5.3.2.2
M4.8	Jul-Aug. '11	March '12	Resettlement officers are sometimes making ad hoc changes to template resettlement contracts without overview by a legal professional. Errors in law and inconsistencies with the RPF or RAPs may have occurred. Commitments made in resettlement agreements are not being systematically tracked.	IESC Observation	National law, IFC PS 5, RPF and RAPs.	Closed	Contracts administrator has been appointed.

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M6.4	March '12		Resettlement was observed to have occurred at Paua and along the Hides logistics route even although RAPs for these areas had not been approved.	II	IFC PS 5, RPF	Open	Please see Section 5.3.2. The following corrective actions are required: <ul style="list-style-type: none"> - Complete as quickly as possible the Paua and Logistics Route RAPs and submit them to the IESC for review and approval. - Mobilize at least one more census and survey team. - Add 'Lender approved RAP completed and locally disclosed' to the 'Notice to Proceed' site checklist. Provide a forward-looking schedule of RAPs preparation so the IESC can be forewarned and turn around approvals in as short a time as possible.
M6.5	March '12		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.	II	RPF, Section 10.1	Open	Please see Section 5.3.2.6. The following corrective actions are required: <ul style="list-style-type: none"> - Submit the missing external monitoring reports. - Prepare a schedule for the biannual resettlement monitoring reviews and report completion (by August 2012 review).
Social Issues – Community Health and Security							
M5.4	Nov. '11	March '12	EHL has not undertaken any monitoring or activities to assure itself that its EPC contractors were compliant with Project standards including the Voluntary Principles. In the HSS payback incident, to varying degrees, there appear to have been lapses in ensuring principles 1-8 of the Voluntary Principle's "Interactions between Companies and Private Security" are addressed.	II	IFC PS 4, Voluntary Principles, Community Health, Safety and Security MP	Closed	See Section 5.7.2.

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M6.6	March '12		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.	II	Community Health, Safety and Security MP	Open	Provide to the IESC the results and findings of the iHDSS baseline socio-economic and nutrition surveys.
Social Issues - Project Induced In-Migration							
M4.9	Jul-Aug. '11	March '12	Ad hoc observations presented by the Project to date do not satisfy the requirement of Commitment ID 23.027 for active assessment, via monitoring or other means, of in-migration. They also fall short of the measures advocated in the Project Induced In-Migration Management and Monitoring Plan.	II	ID 23.027	Closed	PIIM team is now fully resourced. PIIM action plans have been prepared, although IESC has expressed significant reservations about their scope and conclusions. See Section 4.8.2.
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).
M4.11	Jul-Aug. '11	March '12	From a point of view of extending the Project's environmental and social standards to subcontractors/suppliers, it appears that the capacity and skill building efforts of local business – including Lancos, do not include any reference to IR management or to basic worker rights, i.e. the ILO core labor standards as defined in IFC PS2.	IESC Observation	Procurement and Supply Management Plan	Closed	The process has started.

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Labor and Human Resources - Labor and Worker Conditions							
M4.12	Jul-Aug. '11	March '12	Except for a pilot Workers Council for PNG workers at EPC3, no structural, organized and proactive worker-management dialogue is in place at contractor or sub-contractor level, nor any collective bargaining mechanisms. Whereas Lancos seem to play the role of organized labor, they more often have a counterproductive role in managing work place relations.	IESC Observation	Labor and Workers Conditions Management Plan	Closed	See section 6.2.
M4.13	Jul-Aug. '11	March '12	An overall lack of awareness, understanding and data is apparent at (sub) contractor level regarding OCN recruitment policies and practices of intermediate agencies in countries of origin. And even though the majority of OCNs are hired directly by the Project's (sub) contractors. However, diligence is still required with respect to those OCNs who are hired indirectly.	IESC Observation	Labor and Workers Conditions Management Plan	Closed	See Section 6.2.
M4.14	Jul-Aug. '11	March '12	Existing demobilizing arrangements at contractor level may prove inadequate to prevent unrest when large contingencies of PNG workers are facing demobilization, regardless of all expectation management measures taken.	IESC Observation	Labor and Workers Conditions Management Plan	Closed	See Section 6.2.
M5.5	Nov '11		Encouraging first steps have been taken with regard to the Industrial Relations Strategy. However, the Project needs to ensure not losing this momentum. The Project would benefit from ongoing monitoring and oversight of labor and industrial relations issues by a mobile troubleshooter with a short communication line to EHL management.	IESC Observation	Performance Standard 2	Closed	This observation has been closed, as the basic observation is covered under M4.2 and in any case is covered in the text in Sections 3.1.2, 3.1.3, and 6.2.3.

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M6.8	March '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	Open	Review Project compliance with PNG labor legislation on working hours, including breaks, days of rest, rotation schedules, etc. More concretely, verify: (i) whether contractors comply with PNG labor legislation, (ii) if not, whether they obtained relevant exemptions, (iii) which mitigation measures have been adopted, (iv) if so, whether there has been any stakeholder consultation on these measures, (v) whether working hours, R&R etc. conform to international standards and how they compare to the sector norm, and finally (vi) whether there are health and safety impacts on workers also and including impacts on psychological health.
M6.9	March '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	Open	Request EPC Contractors to review recruitment practices of their suppliers of OCN workers, not so much formally on the basis of the legitimacy of these agencies - as even legitimate agencies can engage in illegitimate acts, but informally on the basis of a 'civil society reputation check' in the country of origin through for example NGOs, trade unions or worker's rights experts to verify any rumors of illegitimate activities by these agencies. Discuss possible rollout of OCN Workers Council such as at EPC5B with the other EPC Contractors. Have Project Contractors improve on and provide ongoing information on grievance mechanisms towards OCNs, more specifically at EPC5A. Review the legitimacy of a differentiated R&R schedule for staff holding equal positions based on country of origin, more specifically at EPC4.
Labor and Human Resources – Camp Management							
M4.15	Jul-Aug. '11	March '12	Although most of the other issues with women facilities and accommodation have been solved, and general grievance mechanisms are available, there is currently no outlet for women to express sensitive grievances that may be difficult to report to male staff. Another point of attention is communication on and accessibility to camp grievance mechanisms for OCNs. They are hardly aware of their existence and do not make use of it.	IESC Observation	Camp Management Plan	Closed	See Section 6.4.

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
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	Open	The situation during the March 2012 visit reinforced these observations as IESC found that C1 and EPC4 are either experiencing or expecting problems with available space/person. Moreover, EHL issued a non-conformance on minimum space/person requirements for C1, as monitoring revealed that different containers had been delivered than expected (6-to-a-room).
M6.10	March '12		On the basis of interviewed medical staff at some of the camps on occupational health issues, an increase in psychological health problems among workers in the camps is being observed, manifesting mainly as stress due to long-term isolation and an ongoing sense of the security threat in PNG, predominantly in the Highlands. Medics expect this situation to only worsen as work pressure and stress will be increasing due to construction targets nearing deadlines.	IESC Observation	Camp Management Plan	Open	Carry out a rapid psychological health assessment among the Project's work force, predominantly in the Highlands, through EHL medical officers at contractor level and medical staff at camp clinics. More specifically focus on stress due to long-term isolation and an ongoing sense of the security threat in PNG and possible exacerbation thereof as work pressure and stress increase upon Project completion.
Labor and Human Resources – Gender							
M4.16	Jul-Aug. '11	March '12	Women seem to be facing two major gender specific issues. One is the lack of avenues for getting their issues and grievances addressed, at both the camp level, and Lanco level. Within the PNG cultural context and more specifically the Huli cultural context most Lancos are run almost entirely by men. Consequently, women feel that those (Huli) men at Lancos simply dismiss women with their complaints.	IESC Observation	Labor and Workers Conditions Management Plan + Camp Management Plan	Closed	The closure of this observation corresponds to a portion of the original findings from the July-August field visit. The second part of the original observation is not closed and has been re-worked into Observation 6.16.

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
6.11	March '12		<p>The quality and effective implementation of women's grievance mechanisms varies greatly across the Project.</p> <p>The approach taken by EPC4 may well turn out to be an example of best practice and worth sharing with the other EPCs</p>	IESC Observation	Labor and Workers Conditions Management Plan + Camp Management Plan	Open	<p>Have a dedicated Gender expert carry out a rapid evaluation of women's grievance mechanisms across the Project in order to identify strengths and weaknesses and share lessons learned.</p> <p>Closely monitor developments at EPC4, as the approach taken there may well turn out to be an example of best practice and worth sharing with the other EPCs.</p>
6.12	March '12		<p>The other major issue is the impact of women's changed status to 'women-in-employment'. Across the Project, but especially in the Hides 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.</p>	IESC Observation	Labor and Workers Conditions Management Plan + Camp Management Plan	Open	<p>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, at Project level - including concise instructions for Contractors and Lancos.</p> <p>Take up the issue of domestic violence and related social problems that have been unintentionally aggravated by the Project, with relevant governmental and non-governmental bodies and drive the development of a multi stakeholder strategy, building on core competencies of each stakeholder and using their respective spheres of influence.</p> <p>The Community Health Program is conducting a successful 'marriage and relations counseling' program at the community level. IESC sees a great opportunity for this program to support the aspects of the Project with gender workplace issues by developing a specific focus on violence issues related to women-in-employment. This view was shared and validated by program staff.</p>
Workers Health and Safety							
M4.17	Jul-Aug. '11		<p>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.</p> <p>This is especially the case for workers along the pipeline.</p>	IESC Observation	Various Project Health and Safety Plans	Open	<p>This is a continued observation/recommendation. Improve monitoring (excessive) overtime issues at Contractor and subcontractor level, mainly for OCNs along the pipeline.</p>

N°	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
M4.18	Jul-Aug. '11 and March '12		<p>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.</p> <p>During the March 2012 visit the IESC noted that in various camp canteens (C1, EPC4, EPC5B) practical measures had been taken to reduce calorie intake and enhance intake of nutritious food. Measures varied from moving dessert tables to the back of the canteen to not allowing more than one menu choice on a plate per serving, while allowing for repeat servings.</p>	IESC Observation	Various Project Health and Safety Plans	Open	<p>Consult with a dietician specialized in Melanesian obesity issues, to re-think the menus offered in camp canteens as well as the food packages issued to PNG workers; and,</p> <p>build on practical measures taken in certain camp canteens to reduce calorie intake and promote intake of nutritious food and share effective measures across the Project.</p>
Cultural Resource Management							
M6.13	March '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	Open	EHL is urged to ensure appropriate arrangements are in place for managing this material, as interpretation and reporting are keystones of cultural heritage management.

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 biodiversity MS 16 where the IESC has agreed that the Lake Kutubu conservation program no longer needs to be part of the Offset Delivery Plan (subsequent MOC's have tracked the delayed delivery of this item). In addition, MS#14 and #15 are due for delivery at the end of 2013; 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

The last remaining component for the completion of the ESMP is the drilling ESMP which is currently close to being finalized and in any case will be finalized prior to the start of drilling. The drilling ESMP serves as a bridging document to the EHL ESMP such that the drillers, as well as the other EPC Contractors, comply with common plans.

Environmental and social monitoring and evaluation programs have been developed between EHL and the contractors. The mechanics of monitoring and evaluation are incorporated within a computerized Information Management System (IMS) integrated with the Project Geographic Information System (GIS) such that observations in the field can be tracked as to the exact locations where findings are made. Tracking and reporting formats vary across the Project dependent on subject matter and the preferences of the individual EPC Contractors, but the system functions adequately such that the overall environmental and social performance of the Project can be tracked. A difficulty with the IMS as currently implemented is that, because it is a web-based system, it is difficult to access in the Hides area and use on a day-to-day basis. As a result, alternative means of maintaining data have developed on an ad hoc basis, although the IMS is still used as an ultimate repository of information.

The EHL environmental team (formally designated as the Environmental and Regulatory organization) has maintained a stable structure for most of the past year and is fully functional with occasional gaps associated with only normal turnover, position changes, or with logistical problems and has the appropriate organization to function as planned. Staffing of the social component (L&CA) of the ESMS organization has been more challenging, but since the November site visit significant effort has been placed in the recruitment of competent staff with good success, although staff turnover is still an issue. The non-conformance previously assigned has been closed.

After the last field visit the IESC had strongly recommended for the Project to assign a mobile troubleshooter, which can act above all parties, monitor labor and IR issues across the Project - also in between IESC missions - and mobilize swift and effective Project responses. In March EHL demonstrated a partial follow up to this recommendation. In Q4 of 2011 EHL already had a Cold-Eyes review of the Project's IR strategy carried out by an EM Global Labor Advisor. In Q1 of 2012 EHL had a human resource/industrial relations expert from the ExxonMobil Production Company conduct a second Cold Eyes review, who confirmed the strategy as a robust framework for measuring IR performance of contractors. IESC welcomes EHL's intention to have this specialist make regular visits to the Project.

A cornerstone of environmental and social management required by the Lenders is regulatory compliance. The three main institutional entities responsible for regulating environmental and socio-economic aspects of the Project are the DEC, the Department of Petroleum and Energy (DPE) and the Department of Land and Physical Planning (DLPP). Labor compliance is through the PNG Department of Labour and Industrial Relations (DLIR). As previously reported, to be able to track compliance with local regulations EHL has developed a Regulatory Framework Database, "RegFrame". Although we did not interview Government representatives for confirmation, EHL reports that the Project is currently compliant with local regulatory requirements. Evidence for this positive interaction was provided through a wide variety of documentation including those related to the permitting process with DEC, coordination with the PNG National Disaster Centre after the Tumbi landslide, security interactions, working with Government health programs, interactions with the National Museum for cultural and archaeological programs, etc.

3.1.3 Recommendations

1. Both the environmental and social organizations have reached a stage of maturity such that the framework is set to allow for a greater involvement of PNG nationals. It is recognized that the environmental team still has the need for highly trained expats, but at this stage thought should be given to grooming some PNG Nationals for the transition to Production. PNG nationals make up by far the majority of the social team, but there is still room for transitioning to the positions of senior management, which should be PNG nationals during Production.
2. As the above is not yet the case for labor and industrial relations, the IESC strongly recommends for the Project to assign a mobile troubleshooter specialized in this area, who can act above all parties. This person would visit all Project sites on an ongoing basis, monitor labor and IR issues across the Project - also in between IESC missions and mobilize a swift and effective Project response.

3. Offer capacity building for CIC team members on labor and industrial relations, or bring in new specialized staff if this would overwhelm their existing workload.

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 and Social 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. This process continues being implemented and the MOC classifications assigned since the November field visit appear to be appropriate. Since the November field visit EHL has initiated a single Class II change, which relates to well testing of Hides Wells B1 and B2 to help determine the deliverability of the Hides wells early in the program. It is a Class II change in that it will be associated with some social and environmental impacts and is expected to be enacted by the end of 2012.

At the time of the November 2011 site visit, a significant upcoming MOC related to the re-routing of the main onshore pipeline in the Hides area. This is no longer considered to be a significant change and it will eventually be classified as Class III as the re-routes are reported not to have new environmental or social sensitivities requiring physical economic displacement and there is no change to the Project Development Plan. This is a situation that the IESC expects to review in the field.

Also at the time of the November field visit another MOC was being contemplated, although it had not yet been formally introduced into the MOC process, which related to maintenance of remote access roads, the most controversial aspect being the maintenance of a road to the Omati Landfall. This MOC is no longer pending, as the idea of an Omati Landfall road has been abandoned in favor of a helipad, now constructed.

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. Such cases are identified within the LESR as Associated Facilities and the implementation of ESMP protocols established on the basis of a risk assessment. EHL continues to maintain a Register of Worksites, Facilities and Services containing 349 entries: 225 classified as Tier 1 (requirements of ESMP apply); 46 Tier 2 (ESMP is not directly applicable, but key environmental and social risks need to be identified and mitigated); and 78 Tier 3 (not stewardable, but engagement will be undertaken for positive social and environmental outcome on an as-needed basis).

Stewardship consistent with the “Procedure for the Categorization and Management of Third Party Facilities & Services” is being implemented consistent with the requirements outlined in the LESR. Examples include:

- Komo HGDC camp - stewarded for waste management;
- Para HGDC camp – environmental improvements planned, including provision of EPC4’s small incinerators;
- Tagari Quarries (Nogoli) classified as Tier 2, but treated as Tier 1; and
- Juni Laydown - EHL Field Environmental Team conduct inspection visits.

The most important aspect related to third-party stewardship is “common sense.” For example, although HQ Bravo (main EHL office) is a Tier 1 facility in Port Moresby, there cannot be an expectation that the connection to the municipal sewer will be disconnected in favor of an on-site WWTP. This would not be practical. The Project has progressed such that the non-conformance has been rescinded.

3.2.2.3 Public Disclosure

Public disclosure of key Project documents has been flagged as an issue in all of the previous IESC reports, but at this stage is no longer an issue. Ongoing disclosure requirements are associated with RAPs, as addressed in Section 5.4.

3.2.2.4 Incident Notification

One of the requirements of the LESR is for the Lenders to be notified of serious incidents:

- “Notice of any serious accident or incident (as defined in the Environmental and Social Management Plan) as a result of Project development, construction or operations that have a material adverse effect on the environment or worker health and safety or Project-affected community (CTA Section 12.2(b)(vi)(E)).”

The notification requirement is that the Intercreditor Agent be informed within three business days. The LESR does not define what constitutes a social incident, but EHL has developed a classification acceptable to the IESC and is providing Lenders with information on incidents with a social component. We are not sure if the process is working as well as it should be. Notification has been good for accidental deaths and after the Tumby landslide where EHL was quick to provide whatever information that could be provided. Nevertheless, we could not find any notification with respect to the takeover of the Gobe Camp or the assault to Spicapag management by disgruntled discharged demobilised employees.

3.2.3 **Recommendation**

1. EHL should review their Lender notification criteria to see if anything is missed.

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 and, although timeframes have slipped, the IESC considers that the Project is not delinquent on these items.

- Milestone 14 is due to be completed by end of 1Q 2013. A draft overarching project-wide monitoring plan is expected end 2Q 2012.
- With respect to MS 15, the IESC has agreed that in the interests of undertaking adequate stakeholder dialogue on the Biodiversity Strategy and offset options, the delivery date of the initial draft ODP be changed to the end of Q2 2012. The delivery date of the final report remains end 3Q 2013.
- Regarding MS 16, the IESC has agreed that the Milestone now focuses on EHL contributions to the development of the EHL Lake Kutubu Conservation Program, currently in progress (further detail in Section 4.7.2.1.), and is decoupled from delivery of MS#15. Delivery of this MS was reset to the end of Q2 2012; the IESC encourage the Project not to delay any further on delivery of this milestone.

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.

The Waste Management Plan is supplemented by a Waste Management Template, a detailed report that specifies the requirements of Contractor's waste management plans and identifies methods for proper identification, classification, temporary storage, transport, and final disposal options, as well as defines how to implement an effective waste and wastewater management strategy throughout the Project.

As outlined in these documents, the main objective of the Project is to be self-sufficient regarding waste management processes, procedures and facilities and to dispose of wastes only at facilities approved by EHL, for which disposal (with or without prior treatment) is the only practical option. Waste management and treatment should be performed on-site: no disposal is planned to facilities not under the control of EHL (such disposal is to be handled on an exceptional basis and approved by EHL) and off-site re-use and recycling (to facilities not owned by EHL) will have to be accomplished in a controlled manner that benefits the applicable community. For the cases where the use of non-Project dedicated facilities to dispose Project wastes is required, the EHL needs to follow its internal waste management facilities review requirements before allowing the use of the site. A network of properly designed, drainage-controlled Waste Accumulation Areas (WAAs) is required to be established at all Project and Contractor locations for storage/treatment/disposal of wastes until the permanent facilities are available.

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

Solid waste management is effectively under control. Infrastructure and procedures are in place and EHL Contractors are effectively self-sufficient. Progress made since the November IESC field visit in November 2011 includes the following:

- identification of a recycling company for the management of HDPE, PET and LDPE plastics – this is an important advancement, as plastics have proven to be one of the most difficult waste streams to manage, given their volume and the fact that incineration is not an ideal solution;
- introduction of a requirement for monthly metric reports by EPC Contractors to EHL Senior Management that 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;
- startup of the LNG Plant construction waste landfill;
- completion of Hides (Kopeanda) Landfill groundwater bores installation with baseline and surface water assessment planned; the first landfill cell is constructed and the facility is expected to be open for business in Q2 2012;
- a consolidated Project Waste Register has been developed such that EPC Contractor volumes and reported disposal can be verified (looking for anomalies), waste projections when reviewing landfill capacity can be verified, and trends among different Contractors can be analyzed.

The need for a landfill at Gobe has also been evaluated in detail since the last IESC field visit with the conclusion that this facility can be replaced and there will be sufficient capacity for Production with the addition of a new landfill cell at the Hides facility. In fact, the wastes from Gobe would have fitted within the Hides facility, even without the construction of a new cell. It is understood that EHL management has

provided an in-principle agreement for construction of a new landfill cell at Hides. It is expected that an MOC will be developed addressing responsibility and budget for construction and change in execution strategy. Hazardous waste alternatives including disposal in Australia are being defined on a contingency basis, because the Hides landfill does not foresee a restricted waste cell.

In terms of the specific EPC Contractors, the following waste management activities can be noted:

Upstream Infrastructure (C1):

- last incinerator commissioned (all 3 operating with a total capacity of C1 units of 250 kg); and
- an Incineration Loading Procedure has been prepared and operators have been trained.

EPC1 Telecommunications – a problem that is now becoming chronic is that faulty gel acid batteries represent 77 tons of hazardous waste which EPC1 is still trying to return to manufacturer and is currently stored on site. This is a situation that has not changed over the past several IESC visits.

EPC2 Offshore Pipeline – improvements have been made with respect to on-board waste segregation for delivery to the EPC3 landfill at the LNG Plant site.

- EPC3 LNG Plant:
 - o operation of landfill for construction non-hazardous waste has started,
 - o a solution for waste oil has been to inject this oil into the second incinerator; and
 - o CJJV has made arrangement with PNG Ports to send used tires for their use on tugs and wharfs as fenders;
- EPC4 HGCP:
 - o the second incinerator is now installed and operating,
 - o an environmental technician responsible for incineration and WWTP operation has been appointed,
 - o four trucks have been purchased for skip bin haulage; and
 - o procurement is underway for skip bins;
- EPC5A Onshore Pipeline:
 - o Kopi Scraper Station (Camp 1) closed – incinerator moved to Tamadigi Camp (Camp 4), and
 - o Kaia (Camp 2) waste processing area – to be moved to Tamadigi Camp.

EPC5B Komo – The pioneer camp incinerator has been repaired and is operating; solid oily waste oil is being incinerated.

One observation as we travelled along the RoW was the increasing volume of litter observed along the road-side. Discarded metal drink-cans and plastic take-away cartons were all too prevalent, whilst driving along both Project and OSL roads, plus inside the mouths of caves along the road-side. Considering the volume of Project-related traffic and work being undertaken along these routes, it is not unreasonable to deduce that much of the waste is derived from workers associated with the Project (or their families sharing take-away food). Even though clean-up teams might regularly trawl these routes, the volume of litter observed is completely preventable through education and awareness-raising and better team management.

Wastewater Management

The general situation identified with respect to wastewater treatment plants at the time of the November 2011 IESC field visit was that the infrastructure for wastewater management is generally in place, but performance lags behind solid waste management. In response to this observation, the Project has undertaken a major cross-contractor initiative to correct deficiencies with respect to WWTPs. Defective components and processes have been flagged and remedial solutions identified. Procedures to improve the effectiveness of effluent testing have also been defined. The current situation with EHL and the EPC Contractors is as follows:

- *C1 (CCJV) – C1 Camp WWTP* – The C1 Camp has three Ultra-Flo MBR-100 Containerized Membrane Bioreactor Units that continue to have exceedances of BOD, COD and Ammonia, with some excursions of fecal coliforms. The units have been overhauled and found to have clogged filters that need to be replaced. Parts are on order and the expectation is that overall performance will improve. Sampling procedures, storage and shipping (hold time exceedances) have also been an issue and solutions are being defined;
- *EPC4 (CBI Clough JV)* – There are four WWTPs under the responsibility of EPC4, for the Fly Camp, Pioneer Camp, Tokaju Camp, and the Main Camp (under construction and not yet commissioned). The Fly Camp has a Chatoyer Sequential Batch Reactor that continues to underperform with routine exceedances of BOD, COD (when tested), fecal coliforms, TSS, and ammonia-nitrogen (when tested). This plant now has a dedicated operator, laundry gray water was diverted as a short term measure to ensure balance tank capacity limitations were better managed with the intention to reintroduce them into the plant once the limitations were fixed. An additional balance tank has been added, and a manufacturer representative has been consulted. The Pioneer Camp WWTP (Biocube Uranus) uses a Submerged Aerated Fixed Film system that also underperforms with routine exceedances of BOD, COD (when tested), and TSS; occasionally fecal coliforms surpass discharge standard. Solutions being followed are improved filtration, adding alum, and sludge monitoring / de-sludging. Tokaju Camp with an Ozzi Kleen is the best performing of the EPC4 plants with only TSS routinely discharged above the Project limit. Remediation consists of a buried inlet pump well/balance tank and lift pump delivery to a bar screen for the pre-treatment component; improved aeration and sludge management; and chlorine dosage upon decant;
- *EPC5A (Spiecapag) – 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 that appears to have improved in 2012. The Membrane Bioreactor Systems currently at Gobe C1 Camp and Kantobo Camp perform inconsistently, with occasional non-conformant discharge for all of the measured parameters. Vendor representatives have been brought in to overhaul inherited WWTPs and Spiecapag is also assessing third party facilities to determine opportunities to improve environmental performance beyond compliance (e.g. Moro MDC Camp). Spiecapag is also investigating reliable means of collecting data in the field to obtain “real time” performance feedback, especially for ammonium-nitrogen to improve 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 contacted the manufacturer’s to troubleshoot the problems;
- *EHL – Work Camps* – the WWTPs at the EHL camps have problems similar to the EPC Contractors;
- *Agility at the 11 Mile Site* – the WWTP appears to be generally working well and is under capacity. The only issue is that discharge is directly to surface water, rather than to the ground.

It is emphasized that discharges do not represent a significant environmental risk as leach fields are being utilized and discharges do not go directly to surface water. The single exception is the WWTP operated at the 11 Mile Base at Lae. The overall process to improve WWTPs is a work in progress that will take time to properly resolve. Accordingly, the general Level 1 non-conformance is maintained.

4.1.3 Recommendations

1. The Project should reinforce better waste disposal practices “outside the fence”, continue to move towards biodegradable food cartons where possible, and instigate awareness and training on the prevention of litter. We encourage the Project to continue their dialogue with contractor teams to ensure this practice is discontinued immediately.
2. Verify that all WWTP discharges are to the ground and not directly to surface water. Designed leach fields are the preferred solution.

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 potential impacts associated with the handling and transport of hazardous materials and include the minimum requirements to be reflected in the CIPs in terms of mitigation and management measures as well as responsibilities, reporting and notification. 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.

Site-specific Hazardous Materials Management Plans have to be developed by each Contractor covering specific risks associated with hazardous materials handling and identifying relevant mitigation and management measures. The provisions included in each plan in terms of risk assessment results, prevention and control measures established, and instructions on actions to be undertaken in the event of releases or spills have to be disseminated to potentially affected communities through awareness campaigns.

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 January – March 2012, a total of 64 incidents, of which 60 were small hydrocarbon spills and three were wastewater spills. Three spills of polyurethane coating were also reported for EPC2, but were contained on the vessel. Spill records are 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 November, two more oil spill response drills have been conducted by CCJV in the upstream area and also conducted a dedicated hazard identification (HAZID) for the helicopter transport of fuel. At the LNG Plant an emergency response drill was conducted involving both an oil spill and injury. EPC2 also conducted an oil spill response drill from the offshore installation vessel in February. Over the past quarter EHL has led a Project-wide campaign on ground transport spill prevention in both English and Tok Pisin, including the sharing of past experience and providing instructions on the appropriate packing, restraint and inspection of chemical and hydrocarbon transport loads.

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.

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 not an issue during the March field visit, as rainfall was sufficient to control dust generation. At the time of the November 2011 field visit dust was an issue and extensive use of water spraying was observed, but during this field visit these vehicles were retained only for as-needed applications.

One aspect that has been stressed by the IESC since the first visit relates to the performance of the incinerators and their monitoring to ensure their consistency with the ESMP. This is a subject where the field procedures to optimize incinerator operations previously developed as a Project-wide SOP are effectively routine. The last planned construction waste incinerator was completed and commissioned at the HGCP site, allowing for the three interim drum burners to be made available to the Para HGDC (Lanco) camp as part of EHL's third-party stewardship initiatives.

Greenhouse gas emissions continue to increase with the expansion of construction activities as a consequence of the increased fuel consumption associated with the operation of both stationary and mobile equipment. Marine operations are now being factored into the total amount generated, which in Q1 2012 reached a total of about 72,000 tons of carbon dioxide equivalent, of which about 31,000 tons was generated with two offshore installation vessels and supporting vessels. This is more than triple what was generated in Q1 2011, consistent with the increasing scope of field activities.

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

Noise being generated by the Project continues to be mainly within camps associated with the diesel generators and with earthmoving equipment and truck traffic associated with the construction activity. Blasting associated with quarries and with road upgrades is expanding such that the potential for community effects is increasing. Noise monitoring results are now being reported by all of the EPC Contractors with operations near communities. The only persistent exceedance of measured noise continues to be at MCJV's Pioneer and Main camps at the Komo airfield where noise exceeds the daytime limit of 55 dBA. MCJV in their monthly reports (see example in Table 4.1) indicates the results of testing, but do not indicate if the testing was daytime or nighttime, so it is not known if the daytime limit is the appropriate standard or if comparison should be made with the more stringent nighttime standard. EHL reported in November 2011 that these anomalous values were being investigated, but the measurements from Q1 2012 continue to show that the MCJV camps experience noise levels above the daytime limit. With no available analysis to indicate the contrary, repeated readings above 55dBA are interpreted to be a non-conformance.

Table 4.1: Noise Monitoring Results Reported by MCJV for February 2012

Location	Pioneer Camp				Main Camp			
	North	South	Residential	25m from Camp	North	South	Residential	25m from Camp
L _{Aeq} (1 hr) (dBA)	58.82	62.22	59.67	52.34	63.18	68.36	66.94	52.15

Community grievances associated with noise or vibrations have not been recorded since the last IESC field visit.

Vibration monitoring has yet to start along the pipeline as blasting has reportedly not taken place next to sensitive receptors.

4.4.3 Recommendations

1. EHL should conduct a Project-wide review of how the individual EPC Contractors actually implement the Project Noise and Vibration Management Plan. In particular, we have observed that some active quarries are close to communities, but we did not see evidence of blast monitoring (repeat recommendation).
2. Reporting of noise and vibration monitoring needs to be presented in terms of where the measurements are being made with respect to receptors. It is not sufficient to say a measurement was made at a "camp" without specifying where in the camp – next to a diesel generator? – or in a sleeping area? This should also be part of a Project-wide review (repeat recommendation).
3. Specifically with respect to MCJV, determine the nature of the noise problem. What is the source(s) of the noise? Are measurements made where people live? Are the exceedances daytime, nighttime or both? If people are exposed to excessive noise, determine if there are practical solutions.

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 slopes 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 for the extension of EHL environmental and social stewardship to quarries and borrow pits where the Project requirements lead to extraction at a third-party facility or shares the site with a third-party. As discussed in Section 3.2.2.2, EHL has finalized a "Procedure for the Categorization and Management of Third Party Facilities & Services" that is consistent with the requirements outlined in the LESR. This document contains a flow chart whereby a process is defined for identifying the third-party aggregate or rock sources where the ESMP should be directly enforced or where there at least needs to be Project stewardship on the basis of a risk assessment.

4.5.2 Observations

Construction at the HGCP site and the Komo airfield requires more aggregate that was originally anticipated and both CCJV and MCJV have had difficulties in identifying sufficient quantities of good-quality aggregate. MCJV no longer operates Quarry QA1 and after the Tumbi landslide next to this quarry in January 2012, the access road has been cut off and the overall stability of the area is questionable, given that the slip plane from the Tumbi slide extends behind Quarry QA1. Although the benching undertaken by MCJV stabilized the quarry from shallow slope failures, the benching will not prevent the expansion of the Tumbi landslide into the QA-1 area, should such an event take place. In any case, QA-1 is no longer a potential source of aggregate for MCJV. MCJV was operating the Timalia River Quarry/Borrow Pit - designated TB1 up until February 10 when a fatal accident occurred. This quarry was still closed at the time of the IESC field visit, pending a revamping of safety procedures, but expected to re-open in the near future. Other quarries being planned by MCJV have not yet opened.

CCJV continues to operate only Quarry HQ4 along the Well Pad Access Road, as HQ1 and HQ3 have been converted to laydown areas. Quarry QA-2 was shut down after the Tumbi landslide on January 24, 2012, but CCJV has been able to obtain aggregate from the part of the Well Pad Access Road along Hides Ridge, in particular from the Wellpad C area. The recovery of this material is a welcome alternative to sidelaying. Spoil from the quarrying continues to be placed in sinkholes with no adverse effects yet noted, but it is unknown if the water entering the sinkholes will surface as a fresh water spring. CCJV recognizes that treatment measures may be required to mitigate this situation, should it develop.

Spiecapag currently operates four quarries. Two pinnacle quarries have been decommissioned from KP 274 and KP 276. Spiecapag was able to demonstrate that the highwall still remaining at KP 276 is stable and not a safety risk and also demonstrated the reinstatement process for that area.

At the LNG Plant site aggregate is brought in from local commercial quarries.

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. A significant achievement is the completion of the sediment control dam at the HGCP site, a structure appropriately sized to contain the remaining spoil from HGCP excavations. Other large sediment control structures have been constructed around the HGCP site. Erosion and sediment controls at the Komo Airfield are still substantial, but at the time of the site visit heavy rains had exposed the vulnerability of some systems. One observation at the Komo site is that dumping of spoil at the edge of the construction area creates a situation that is difficult to manage. Without some compaction, this material is highly susceptible to erosion and muddy runoff. As documented in Section 4.7.2.5, freshwater ecological monitoring has found probable ecological impact downstream of the Komo Airfield, interpreted to most likely relate to increased turbidity or sedimentation. This observation by itself indicates that more effort needs to be undertaken to control sediment runoff at the Komo Airfield.

During this field visit it was not practical for security reasons to visit the Hides Wellpad Access Road, but it was possible to undertake a helicopter flyover. It is recognized that EHL has expended considerable effort to minimize the impacts of sidecasting, but the impacts are still significant. An important achievement to minimize sidecasting has been the recovery of material from the cuts for the road and, in particular Wellpad C, that can be used as aggregate for the HGCP (>200,000 m³ recovered), reducing or eliminating the need for Quarry HQ4.

During the November 2011 IESC visit, concern with respect to the possible impact on surface water was presented by representatives of the drilling team, who noted that drilling through the cavernous limestone has in some cases caused discharge of foam and drill cuttings to the ground surface through caves based on OSL drilling experience. Drilling continues to develop contingency plans for the potential releases of foam and cuttings to be integrated into a Drilling Foam Management Plan for use when drilling commences later in the year.

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.
2. Improve the method of dumping of spoil at the Komo Airfield. Consider minimal compaction in thick lifts, working from the bottom, not the top.

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, the Reinstatement Management Plan and the Erosion and Sediment Control 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 Strategy provides an overview of EHL's overall approach to mitigating impacts on biodiversity in alignment with the mitigation hierarchy, and also contains the Project's approach to its Biodiversity Offset Program and Biodiversity Monitoring Program. In alignment with the Biodiversity Strategy, EHL are developing the ODP, which will be a detailed document on offset design and management.

The Biodiversity Monitoring Program is currently comprised of five Programmed Monitoring Activities (PMAs), which are as follows:

- PMA-1, 'Remote Sensing of Indirect Impacts', designed to monitor forest loss and degradation in the entire Upstream Project Area as caused by project-related indirect impacts;
- PMA 2, 'Aerial ROW Surveys' designed to monitor focal habitats and the potential spread of invasive species and disease along the ROW;
- PMA-3, 'Regeneration 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 biodiversity benchmarking system;
- PMA-4, 'Road Record Assessment', designed to monitor potential third-party use of Project roads during operations; and
- PMA-5, 'Efficacy of Offset Projects', which will be tailored to monitor the outcomes of each biodiversity offset project.

4.7.2 Observations

During this sixth mission, both the IESC's biodiversity specialist and the freshwater/marine issues specialist participated on the visit.

4.7.2.1 Ecological Management and Biodiversity

EHL's Biodiversity Working Group, tasked with oversight of the implementation of the Biodiversity Strategy, and comprising senior EHL management and expert advisors, is now fully functional and meeting every 2 months. In the period since our last visit, the Working Group Protocol has been finalized and signed off. Their key tasks, in the short term, are to steward the Biodiversity ODP and the Biodiversity Monitoring Plan.

The IESC welcomes the Project's intended recruitment for a full-time resource to undertake implementation of the various priorities detailed with the Biodiversity Strategy.

Biodiversity Strategy: Monitoring

EHL's Biodiversity Strategy continues to provide the basis for the Project's philosophy on ecological impact avoidance and mitigation. A revision to the current Strategy (to be Version 3) awaits completion, pending additional development of the Programme Monitoring Activities (PMA's) and indicators. The updated revision is anticipated during Q3 2012. The PMA's continue to be refined to ensure that upon their finalization (Q1 2013, as per Milestone Schedule #14), they will inform how well the goals and objectives of the Biodiversity Strategy are being met. A draft overarching project-wide monitoring plan will now be made available to the IESC at end of 2Q 2012.

Worthy of note is the verdict that, following field testing late in 2011, the proposed satellite imagery analysis will be a sufficiently quantifiable technique to identify the majority of Project-related indirect impacts over time (PMA-1), e.g. logging, new roads, fire, broad scale agriculture, canopy condition, etc. The first set of high and medium satellite imagery has been sourced and a contract awarded to undertake the necessary analysis and imagery interpretation. IESC anticipates a review of the analysis to date during our next visits. One indirect impact that remote sensing is not able to capture is increased hunting of vulnerable species. Greater take of forest meat occurs in similar projects where local populations are swelled by in-migration of people seeking work. This has already been identified in the Project's impact analysis as one of the primary potential indirect impacts. For example, in the Juha area, the lack of hunting has been identified as one of the key reasons why the area supports such high biodiversity values. The IESC would consider it good practice for the Project to identify the current characteristics of hunting (establishing a baseline) near permanent major facilities in the Priority Ecosystems⁷, and its social /economic importance within communities. This would offer a baseline record from which any future levels of hunting associated with in-migration might be managed; for example, options for the development of alternative protein-sourcing activities in those villages where an increased population has caused forest-take to increase.

PMA-3, identifying benchmark plots against which successful vegetation regeneration can be assessed, continues to be tested and further developed. A full suite of benchmark plots are currently being determined, and once identified, should represent the full range of natural forest types and ages against which Project-related regenerating sites can be compared. Elements of the overall concept are still being discussed, but specialist advisors and field staff are contributing to what could ultimately be a novel approach to determining 'successful' regeneration in a system as dynamic as PNG's tropical rainforest. PMA-4, monitoring the use of new Project roads and infrastructure, is the least sophisticated of the PMA methodologies, and thus perhaps receives less focus. Based on road-use records, it is intended to demonstrate that their use remains restricted to Project-related activities. Information currently being gathered during construction will feed into the PMA.

The Project is currently considering the addition of another PMA (PMA-6) to potentially collate inventory-type data (presence/absence) on specific faunal species. This could include repeatable transects or plot surveys, akin to the rapid assessment biodiversity survey approach. IESC commends inclusion of this additional monitoring activity, especially considering the ecological richness of the upstream area. These surveys should provide valuable datasets on species that have not yet been recorded around Project infrastructure, and on whom the impacts of the Project might not be fully understood – in this regard, the gathering of such information contributes positively to the Projects attainment of IFC PS6 requirements.

Biodiversity Strategy: Offset Design and Implementation

Completion of the Biodiversity Offset Delivery Plan (ODP) has been further delayed, while discussions continue. EHL anticipates that a draft will be released to the Lenders by the end of 2Q 2012, with a view to final publication by 1st Sept 2012. The IESC realizes that the Project is embarking on a public process relatively new to ExxonMobil, and that internal buy-in is just as vital to the success of biodiversity offsets as external buy-in. However, any further delay to the draft ODP will require an MOC, and the IESC urges the Project to deliver the draft ODP within the currently schedule. Although the IESC was not able to review any detail of the draft ODP, we were presented with the intention for a Kikori-wide offset philosophy, the scope of the offset, and the proposed structure of the ODP, the contents of which appear appropriate for the design of an offset of this scale. The technical rationale for offsets is still under development, but the value of multi-stakeholder input on priority areas for conservation was indicated by development of a 'hotspot map', overlaying various stakeholders' assessment of key conservation areas (built as a result of data-collaboration since the Biodiversity Workshop held last October, as reporting in our last report). Conservation International, as part of the first phase of collaboration (initiated in July 2011), has worked with EHL and other stakeholders to provide a series of recommendations during 1Q 2012. These recommendations will be considered during the development of the draft ODP. The IESC keenly anticipates the chance to review the draft ODP (due to be released to the IESC by end 2Q 2012), and to learn how the Project has taken into account the extent and significance of residual impacts in

⁷ As defined in EHL PNG LNG Biodiversity Strategy Rev.2, Dec 2010 (PGGP-EH-SSZZZ-000003).

comparison with the conservation gains anticipated from offsets; stakeholder transparency in this area of offset acceptability is key.

The IESC reiterates the value of learning from the Business and Biodiversity Offset Program (BBOP) global collaborative dialogue, where projects of a similar scale are contributing to and learning from the process. We especially recommend the Project becomes aware of the BBOP Standard published earlier this year, which details a model suite of Criteria and Indicators, and an assurance process. This may prove valuable to the Project, not only in their offset design but also in any assurance monitoring related to development of PMA-5 (efficacy of the ODP).

Biodiversity Strategy: Conservation Projects

Although not classified as offset projects (the technical rationale for offsets is not yet available to guide which conservation projects meet the offset design criteria), the Project continues to support several conservation projects within the upstream area. For example, the Piku Conservation Project (in collaboration with the University of Canberra), focusses on protection of the pig-nosed turtle (*Carettochelys insculpta*) and its sand-bank habitats in the Lower Kikori delta.

Discussions related to the Project's contribution to the existing collaborative work at Lake Kutubu have not progressed sufficiently to enable the sustainable fisheries management plan, as presented in our last report, to be finalized. The Lake Kutubu Wildlife Management Area (WMA) is the only WMA with which the Project footprint overlaps. Lake Kutubu has been identified as a high priority ecosystem within the Biodiversity Strategy, and has been recognized as a Wetland of International Significance under the Ramsar Convention. An apparent lack of resources within the WMA has meant that progress has been slower than anticipated when the Project originally agreed to collaborate. Reflecting this, the Project intends to continue to develop the aforementioned sustainable fisheries program, building on regular discussions with WMA Committee members, OSL and other local stakeholders, with a view to further collaboration when the Committee is ready. Delivery of this EHL program is currently monitored via the Milestone Schedule (#16), and as a result of additional MOCs, the current deadline for delivery is end Q2 2012.

Ecological Management

The Pre-Construction Surveys (PCS) are mainly complete, with only those on Hides Ridge beyond Wellpad-D yet to be undertaken. Due to movement restrictions around Hides, the ability of PCS teams to survey the remaining areas on the Ridge has been impacted. The IESC was advised that there were no ecological sensitivities or focal habitats encountered that could not be avoided through micro re-routing of the RoW; for example, the Bulmers fruit bat (*Aproteles bulmerae*) colonies continue to be elusive. On two of the pipeline sections where re-routes are anticipated, all PCS's have been undertaken; the IESC was advised of no ecological sensitivities, and no new environmental mitigations required.

Good planning and footprint management prevent the need for unnecessary clearing of land, and therefore the amount of soil requiring erosion control, reinstatement, re-vegetation and ongoing monitoring, and potentially also compensation and/or offset. The IESC once again observed some good examples where the project footprint was being actively managed to a minimum, and also some areas where additional foresight and planning might have minimized additional footprint requirements. These include:

- opportune use made of space within the RoW for pipe laydown and vehicle parks, instead of clearing additional surface area near to the RoW;
- in those stretches we were able to view, the restricted RoW width along the difficult-to-access Mubi-Kantobo section (around Heartbreak Hill) has been impressive;
- the Operations team are designing future access to the RoW to eliminate unnecessary permanent access roads and allow reinstatement to continue (see Induced Access for more detail);
- on Hides Ridge, excavated limestone materials from road construction are being utilized for well-pad road and pad construction (as well as at the Hides Gas Conditioning Plant) – the extracted limestone material quality is better than expected and therefore avoids the excavated material going into spoil areas and the need for additional quarries;
- where the pipeline RoW runs parallel to the OSL pipeline, the standard agreed distance between the two has been a 10m minimum. Dispensation has been sought from OSL, and approved, for some stretches of RoW where physical constraints have meant that the pipeline RoW needed to be

closer, i.e. to 5m. If this narrower RoW has been readily approved by OSL, it seems reasonable to request that this narrower RoW occur more frequently, and hence lessen forest clearance.

- on Hides Ridge, there may be opportunities to minimize the footprint of side-cast material pushed into sinkholes, by re-using existing side-casting channels and not creating new channels;
- at Komo airfield, continued improvements in management of existing spoil areas could mean that additional spoil areas are not required (regardless of whether within original overall footprint), and therefore does not require any further clearing of trees;
- some Operational facilities could have utilized already cleared land e.g. (as detailed in the Induced Access section), with minor amendments to scheduling. For example, facilities around Kopi Scraper station could have been redesigned so that the vent stack & associated security area was positioned near Camp A (already cleared and currently being regenerated) where the current plans show the proposed helipad). This would have required less forest clearance to accommodate the size of security fenced zone. The helipad could then have been relocated to where the vent stack is shown on the current plan, and less forest cleared.

The project should continue to seek innovative opportunities that would allow footprint to be minimized.

4.7.2.2 Induced Access

The IESC was encouraged to hear that the option for permanent operational access to the Omati landfall section of RoW presented during our last trip was no longer being considered. We were not able to determine whether the 'shortcut' route linking the Kopi shore-base to the Kopi scraper station was still being considered for permanent use (originally determined to be a temporary access); if this is still the case then the recommendation holds from our last visit, and is included again for clarity. We reiterate that any temporary access which is then deemed to warrant value as permanent access, must have that access controlled as per the Induced Access Management Plan commitments (Mitigation reference number M88).

IESC was informed that the Pipeline RoW Execution and Management Plan is under development, requiring ongoing liaison and transition planning between Construction and Operations teams. This will inform the Operations ESMP, also currently under development, under which site specific management plans will provide locational detail.

Operations presented four of their current recommendations to the IESC regarding service roads to enable access and maintenance on the operational pipeline:

- cathodic Protection Valve 1 (CP-1) will now lie alongside the existing OSL road, and will utilize an area cleared for an EPC-5A camp, so no additional permanent project-created road will now be necessary;
- at Gobe Main Line Valve (MLV) at KP192, Operations now plan to make a small stretch of the temporary RoW road permanent, which will mean that no new additional road linking the MLV from the Gobe-Kopi road will be required, as previously planned. The IESC recommends that the RoW service road to the MLV be a no-through road (i.e. not accessible from both north and south RoW sections), to deter this becoming a thoroughfare and potential shortcut from the Gobe-Kopi public road to the OSL Gobe road;
- cathodic Protection Valve 2 (CP-2) at KP227, just south of the Kaiam Bridge over the Kikori River. Again, Operations are considering making a small stretch of the existing temporary RoW road permanent, negating the need for a new access from the Ferry road. However the RoW just north of the proposed CP-2 site intersects a public road; if there were to be no restrictions or control of access, this would allow easy incursion to the RoW, therefore appropriate mitigation measures should be implemented (see Kaiam point below); and

- near KP268 Operations plan to install the Kopi Scraper station, along with a vent stack and security buffer, plus a helipad, just to the north of the old EPC-5A Camp A location. This part of the RoW intersects with a public road (to Kopi shore base) and two culverts that were originally to be removed will now be retained; incursion into the RoW could occur from the public road, so therefore appropriate mitigation measures should be implemented. It should be noted that the Camp A site had already been cleared, has now been decommissioned, and is currently undergoing reinstatement. With some scheduling adjustments, part of this site could have been retained for Operational use. For example, the vent stack will require a significant safety exclusion zone bounded by a security fence, which will require new areas of forest to be cleared; this might have been avoided if the infrastructure had been located on the RoW right next to the Camp A site.

The IESC recommends that each and every decision on permanent access to the pipeline RoW is taken on a case by case basis and that each is fully justified to ensure that long-time access is absolutely necessary, that each is assessed against the aims and intentions of the Induced Access Management Plan (and other plans as necessary), and that the best ecological long-term option is ultimately chosen. As bulleted in the examples above, where permanent access is required to CP, MLV or other infrastructure points along the RoW, and there is a risk these routes may be used to access areas of forest not previously easily accessible, the Project needs to consider how this access will be deterred.

The IESC was advised that the PNG Government is currently considering the feasibility of a road from Tamadigi to Kaiaam. This could have repercussions on the Project's ability to control access to Project infrastructure in the vicinity of the Kaiaam Bridge, and along the nearby RoW and pipeline service roads. The IESC recognizes that there will be decisions made that are outside of the Project's control, and that the Project's objective is not to deter the Government from installing infrastructure and enabling communities to travel. However, in alignment with the Project's commitments and IFC PS6, the Project does have a responsibility to deter use of, and control access to, its own infrastructure where this may be to the detriment of the ecological value of the area. The Project needs to assess the various possible scenarios that might arise if and when the Government decides to improve its own infrastructure in the area, and consider how best the Project can still achieve both the requirements of IFC PS6 and its own commitments to avoid and reduce induced access to areas opened up by the Project.

Operations have stated that the new project road around the south of Heartbreak Hill, linking Mubi to Kantobo, will not be required for operational access or maintenance (the RoW is routed to the west and north of Heartbreak Hill). The intention to deter access to the whole Gobi-Kantobo section of RoW and road is via removal of culverts at Gobi (GS002 and GS211) and at Kantobo (MK 058 and MK201), as stated in the Induced Access management plan.

4.7.2.3 Reinstatement

In the southern Upstream area, where RoW trenching, pipe welding, laying and backfilling was ongoing during the field visit in Nov 2011, reinstatement and successful natural re-vegetation is now taking place. EPC-5A's reinstatement works (including re-contouring, topsoil re-spreading, and drainage re-established and erosion control measures, where necessary, and re-growth) are ongoing along two stretches of RoW:

- 23km between KP 293 – KP 278 (Omati swamp section, observed from the air), where culverts have been removed and vehicular access is now negligible; and
- 15km between KP 226 – KP 203 (sections of the Kaiaam to Gobe portion, driven), where reinstated RoW sections follow the existing OSL road.

EHL advises that the total length of RoW reinstated so far is 38km, which represents 13% of the RoW length from KP 293 up to KP 0 at the Hides Gas Conditioning Plant. Within these areas, locations where tie-ins are yet to be connected have not yet been reinstated. In addition, off-RoW EPC5A sites (such as borrow pits, camps, pipe yards, etc.) are also being reinstated where these are no longer required. The IESC commends the rapidity with which RoW and RoW-associated reinstatement is being undertaken so far, and encourages a continued determination for prioritized reinstatement as construction moves farther inland.

At Komo airfield, phased small-scale reinstatement continues in the few areas designated to date as no longer required by current or future construction works. The nursery for wildlings (for replanting during reinstatement) is proving successful, continues to expand, and is now operational on three levels. Its output rate is currently sufficient for the reinstatement needs at the airfield, but larger volumes of replanting material will be needed in due course. The reinstatement trials at Komo have provided valuable lessons in

identifying the types and proportions of seeds for optimum regrowth and soil stability, and in the suitability of different plants for placement in different habitats e.g. swamp, shade, etc. Japanese Millet, the subject of a previous waiver, has proved to be effective as an initial soil stabilizer; the padlocked storage of the Japanese Millet seed stock was seen to be dry and secure (conditions of the NAQIA import license). Japanese Millet is being used as there is no comparable native species that offers such impressive soil-stability characteristics - with the predicted time-lag before reinstatement and soil stability is required up on Hides Ridge.

Due to the ongoing access restrictions at the time of the visit, the IESC was unable to view any sites undergoing reinstatement in the Hides area, such as the C1 spoil dump where the reinstatement plan was being finalized during our last visit. Neither did we see the continuing reinstatement efforts at the LNG Plant during this visit.

Biotropica was completing an independent review of reinstatement and weeds management during 1Q 2012. Regarding reinstatement, the focus was to:

- test the ‘reinstatement assessment’ scope, methodology, and end point criteria; and
- assess contractor performance against the management plan objectives and the draft end point criteria.

The Project also required Biotropica to assist in the development of guideline documents for ‘difficult to reinstate’ areas.

The reinstatement assessment methodology seeks to define different site types, and different ecological settings, to ensure that the representative sites chosen for benchmarking are appropriate and sufficient. This will aid in the definition of successful criteria end points for both Phase 1 reinstatement (drainage, erosion, soil condition) and Phase 2 (vegetation cover), and feed into the development of PMA-3. Each site will be scored against these criteria to identify levels of reinstatement success; parameters to be used will include drainage, erosion control, soil condition and compaction, and vegetation cover. Replicable ‘photo-points’ should be used at key points across the whole Project area where reinstatement is being undertaken, so that photographic records capture progress at regular intervals at each of these key spots.

A centralized Reinstatement Register has been developed, to define those sites where reinstatement has or will be undertaken and assist in their reinstatement assessment; this is based on the Associated Facilities / 3rd Party Stewardship register. The Reinstatement Register includes site specific details on the type of reinstatement, when and to whom handover of reinstatement (or the reinstated site) will occur, and highlights potential risks that might occur during handover.

As the IESC understands the situation, EPC-5A will hand sections of the pipeline to EHL on a 2-phased approach following commissioning (Omati to Kutubu, and Kutubu to Hides). This makes centralized recording and replicable measures of progress important for longer term monitoring by the Project.

During the mission, the IESC learned that discussions were ongoing between Construction and Operations as to the nature of access to Hides RoW areas where gardens were originally situated. The IESC assumes that where gardens occurred before RoW construction, they would be allowed to continue post-construction (with caveats to maintain pipeline integrity e.g. erection of structures immediately above the pipeline), as long as measures were employed to avoid induced access along the RoW, and non-gardened areas were fully reinstated.

4.7.2.4 Invasive Species Management and Quarantine Management Program

Quarantine Management

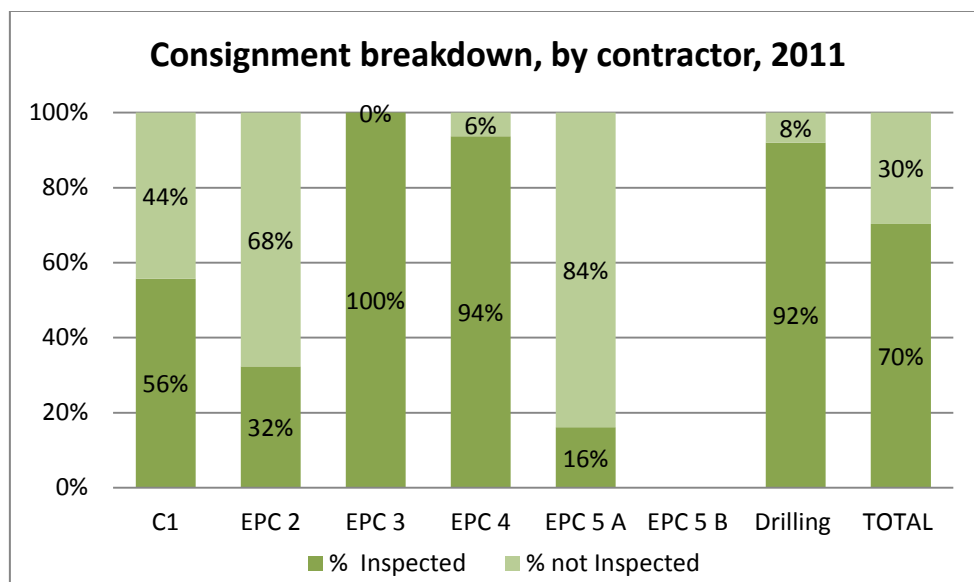
Inspections continue to be undertaken by NAQIA, either at the point of origin of the shipment or at one of the international ports being utilized by EHL contractors: Lae, Port Moresby or Motukea Island. NAQIA provides basic information on the need for inspection, i.e. whether because the shipment contains break-bulk items, if the documentation is inadequate, or simply due to the shipment originating from a location NAQIA considers high risk. Fumigation is required if any live or dead insects are found in the container.

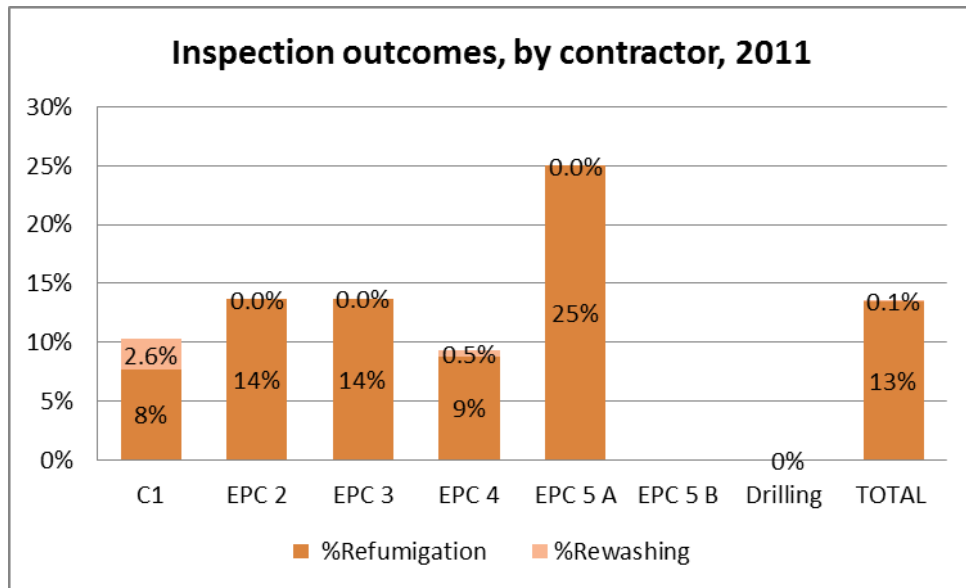
EHL presented a breakdown of contractor import shipments and quarantine inspections for 2011.

Contractor	No. of shipments	No. of inspections (as % of shipments)	No. re-fumigations (as % of inspections)	No. re-washings (as % of inspections)
C1	70	39	3	1
		(56%)	(8%)	(2.6%)
EPC-2	68	22	3	0
		(32%)	(14%)	
EPC-3	1034	1034	143	0
		(100%)	(14%)	
EPC-4	206	193	17	1
		(94%)	(9%)	(0.5%)
EPC-5A	597	96	24	0
		(16%)	(25%)	
EPC-5B	-	-	-	-
Drilling	25	23	0	0
		(92%)		
Total	2000	1407	189	2
		(70%)	(13%)	(0.1%)

These data are gathered on a monthly basis. There has been an improvement in the volume and frequency of data being provided by contractors and the majority of contractors are now reporting against all the required performance indicators. Data have not yet been forthcoming from EPC-5B, but data from early 2012 is now being provided.

The following two charts provide a visual breakdown of 2011 data:





EPC-1, although experiencing a high rate of inspection for Q2-Q4, has experienced no re-fumigations or re-washings during Q3 and Q4. EPC-5A re-fumigations look high as a proportion of shipments inspected, but when compared to their total number of shipments, only 4% are being re-fumigated. EPC-3 still continues to experience a high rate of inspections, assumed to be due to many shipments being break-bulk in nature, and also that a high proportion originate from the Middle East (which NAQIA considers a higher-risk quarantine location). Nevertheless, a quarantine specialist has been employed by EPC-3 to oversee inspections alongside NAQIA officers, and the inspection rate seen during the first few months of 2012 has been reducing. IESC recommends that other contractors might consider employing a similar quarantine specialist during periods of heavy import volumes, where this may help streamline their own quarantine experiences. However, EHL should ensure that at no stage are NAQIA officers deterred from undertaking inspections or performing their normal quarantine actions, or that use of such quarantine specialists is not perceived to place undue pressure on NAQIA officers.

Quarantine data are now being collated through the SHE reporting system, with the Materials Logistics Group planning to fulfill more of an oversight role. The Quarantine Index (QI) has now been rolled out (including defined levels of observation/non-conformance/near-miss/incident, endorsed by SHE). Most contractors are now reporting their quarantine-related incidents accordingly. The Quarantine Procedure is in the process of being updated to incorporate the QI and new reporting mechanisms. EHL has also sought to define Incident Management actions that should be taken should a quarantine related incident occur.

The IESC commends the Project for developing a QI and formalizing this through the incident management system. Definitions developed for use within the incident management system will be further discussed during the October 2012 mission.

It might be useful for EHL to discuss with NAQIA their recently developed Incident Management Procedures, and gain their input into how such a procedure might be put in place if a quarantine-related incident were to occur, whether in transit from an inspection facility or at a Project site. A logical starting point would be for the Project to undertake a few table-top 'scenario' exercises with NAQIA, so as to run-through both company and agency responses.

The IESC was able to briefly visit the international port at Lae, and visit with Agility contractors at 11-mile storage depot. At the port workers were undertaking a wash-down for container re-use (not a quarantine wash-down), and noted that wash-down discharges are not contained, and are allowed to run-off into nearby fields and through cracked concrete. At 11-mile storage depot, we met with Agility and briefly observed a NAQIA officer undertaking an inspection of a container recently arrived from the US. Agility presented us with the blank template they use for every consignment that passes through Lae, which indicates that sign-off is required from the inspecting NAQIA officer, the contractor representative (using the consignment) and Agility following each inspection. Agility informed us that the three signees do not meet during the inspection, but are just included in the paper-trail post inspection. As IESC was previously informed that EHL does not receive sufficient information from NAQIA on why fumigations or rewashings

are required (and thus not able to determine whether their intended prevention at source is proving effective), this simple proforma seems a valuable tool that should record those reasons, and provide additional detail for analysis. In addition, if senior EHL management were to meet and discuss their data needs with NAQIA Departmental leads, this would allow NAQIA to understand why the detail from their officers is so valuable.

Good quarantine storage practices were observed at Komo, where Japanese Millet seeds (and Carpet Grass seeds) are being stored in a container, under padlock (key held by Contractor site Environmental Manager), mostly on pallets raised off the floor (to keep seed-bags dry). The Project's permit from NAQIA requires the Japanese Millet seed be kept clean and dry, and IESC can confirm this was the case.

Weeds, Pests and Pathogens (Invasive Species) Management

During discussions in Port Moresby and observations in the field, it remains evident that EHL and their contractors continue to consider invasive species management a priority ecological issue. During visits along the RoW and at Komo, contractors were undertaking regular weed inspections and ad-hoc preventative inspections where reinstatement/regeneration is ongoing. Their results are reported to EHL via contractor monthly environmental reports.

Onsite control measures following inspection and identification of priority weed species comprise hand-pulling/up-rooting, then sun drying and incineration. Certain Priority 1 species have required active and ongoing management by EHL's contractors. Several examples can be cited. Giant Sensitive, not previously recorded in a PCS, has now been identified at two isolated locations near Moro. Singapore Daisy (*Sphagneticola trilobata*) was observed in two new, small and isolated areas. Siam weed (*Chromolaena odorata*) has been recorded around Omati and has colonized portions of disturbed road-side along existing logging roads (that Project vehicles have been instructed to no longer use). Although weed inspections are occurring regularly, considering the expanding area that EPC5A needs to cover, there is room to consider inspections and monitoring on a more systematic basis, to encourage regular visits to areas considered at highest risk, such as where priority weeds have either already been eradicated or are considered most at risk from further outbreaks. There has been some misidentification of weeds, which the Project is aware of and seeking to rectify. Full emphasis should be given to correct identification of weeds as this dictates the extent and urgency of control measures applied to eliminate or manage them.

Due to work stoppages and disruption to vehicle movements in the Hides area, the IESC team was not able to visit the Hides Ridge or quarries around the Hides area. However, EHL advises that the establishment of the Hides Ridge 'clean line' at KP3.3 now benefits from opening of the permanent vehicle wash-down bays, replacing the previous temporary facilities. We were able to view this facility from the air during a chopper fly-by, and so can confirm it is now in place. The Level 1 non-conformance assigned to the temporary facilities (Issues Table item M5.3) is closed.

In the period since our last visit, the project has benefitted from Biotropica undertaking their second annual expert review, evaluating the effectiveness of EHL management and contractor implementation and performance in achieving the goals of the Weeds Management Plan. Biotropica undertook field visits at points along the RoW and various sites, including the road under construction along the Hides Ridge. At the time of our visit, Biotropica had undertaken all necessary field work, but were in the process of compiling and analyzing results. They presented results from the southern Project area and Komo – Hides was awaiting analysis and report completion. Overall, they noted several successes:

- no new weeds were observed that had not already been noted in the PCS baseline reports;
- there had been a decrease in the abundance of weeds in comparison to 2011;
- the diversity of species remained static overall (i.e. no species found during PCS's had been completely eradicated from the Project area as a whole, but neither had it increased);
- high levels of weed hygiene had been observed;
- the weed prioritization status appeared adequate so far, but may be revised at some stage;
- the 'prioritization of weeds' concept into Priority 1 / Priority 2 had been successfully recognized by contractors, and being applied;
- that where any extensions to the ranges of weeds had occurred, this had been minimal;

- that biophysical boundaries have contributed to the restrictions in expansions of ranges, and acted as ‘ecological brakes’, deterring movement across barriers such as “changes in drainage, elevation and the nature of the intervening landscape (forest cover) between areas of major disturbance”;
- biotropica found that contractors exhibited good focus and engagement in actions required to manage weeds; and
- they noted that only non-residual herbicides were being utilized.

In addition to successes, they noted certain challenges that were apparent following discussions with contractors and field-visits:

- certain challenges are arising with particular priority weed species, such as Giant Sensitive, Pond Apple, Singapore Daisy, and Fountain Grass, but that these challenges were currently being managed;
- ensuring that plant and equipment remained only within areas that had been surveyed, and did not enter or move through areas where there may be unknown weed species that could be brought onto a Project site;
- bare surfaces left following construction but prior to reinstatement require careful management to deter weed establishment;
- that there should be improved consistency of control, recording and monitoring across the Project;
- weed identification showed some inconsistency (although following Biotropica’s visit, they are assisting with the accurate identification of weeds to determine accurate sub-species); and
- they noted a need to increase weed awareness and expertise across both EHL and their contractors.

Biotropica made a series of 15 specific recommendations. EHL is acting upon these recommendations to target site-specific improvements with their contractors, and are also responding strategically by, for example, updating their Weed Management Plan and preparing a Priority 1 weed identification booklet. IESC supports the full adoption of their expert’s recommendations. We do note that different approaches for weed control are being followed at different sites. For example, EPC5A’s approach is to remove all Priority 1 species and monitor the extent of Priority 2 species to be sure of their containment. At Komo, however, both Priority 1 and 2 species are removed.

Reducing the risk of spread of dieback in *Nothofagus* (beech) forests is one of the objectives of the Weed Management Plan. Aerial surveys in on Hides Ridge have identified areas of dieback, and investigations are ongoing to determine whether this was caused by *Phytophthora*. During this visit, the IESC was able to visit the *Phytophthora* laboratory at Moro, and meet with EHL’s expert dieback consultant. At the laboratory, lupins are being cultured in soil samples taken from various Project areas where *Phytophthora*-related dieback has been suspected, which when grown can be analyzed for the pathogen. The advanced expertise and diligence being applied is notable, especially with regard to investigations into a better understanding of (the causes of and mitigations required to avoid) dieback spread, and the soil-analysis procedures followed in the Moro laboratory. Contractors are working closely with the dieback expert to propose and implement precautionary plant hygiene measures. These include the establishment of High Value Sensitive Zones at Hides Ridge and the Homo-Benaria Ridge, with associated measures such as clear demarcation of these Zones, the potential addition of wash-down station(s) in the Homo-Benaria Ridge area (with the issue of wash-down certificates), heightened dieback and weed awareness education programs for key personnel, along with controlled access to the area. One area for potential improvement is reducing the time between receiving results from soil analyses and applying new procedures to minimize the risk of spread of *Phytophthora*. This process can take several months, and thus may prove an obstacle to a sufficiently rapid response, particularly with regard to Hides Ridge where there have been challenges in deployment of PCS teams to undertake surveys.

4.7.2.5 Freshwater Ecology

During the site visit, EHL presented a report containing comprehensive results of the 2011 survey of stream invertebrates from the PNG LNG upstream area sampled 19 of 20 sites successfully. Together with data collected in 2010, these results established a baseline dataset to use in the ongoing monitoring of aquatic habitats selected in the upstream area during construction of the pipeline. The report presented a set of metrics including diversity (number of taxa) and proportions of this diversity contributed to by the Ephemeroptera (mayflies) Plecoptera (stoneflies) and Trichoptera (caddisflies) – EPT taxa (%EPT) and chironomid taxa (%Chiron). EPT taxa are traditionally used as indices of groups sensitive to pollutants, so

their absence suggests recent pollution, while the Chironomidae (non-biting midges) are typically pollution tolerant. A positive aspect of the reported sampling is that measurements of embeddedness at each of the sample sites were included, which improved the detection of sedimentation at sample sites. This added parameter better represents effects of sedimentation than spot measurements of turbidity and suspended solids, which may fail to pick up sediment loads if they are only present in the water column during high flow events. A qualitative measure of embeddedness allows sites that vary in terms of their morphology, both naturally and as the result of sediment impacts to be distinguished consistently.

It must be kept in mind, however, that the study results represent a limited surrogate derived from samples of the hundreds of water courses crossed or potentially affected by the construction. No fish surveys were done before and after construction to estimate direct project effects on abundance or species composition of this group of fauna. Depending on the distance from the ROW clearing (if less than one mature tree height or 45 m, and with no effective sedimentation and control measures) impacts to fish resource will occur due to physical disturbance, sedimentation, and reduction in function of the riparian and hyporheic zones. As noted in Section 4.6, although erosion and sediment control has been a focus of the Project and in most cases effective, there are problem areas. During this field visit ineffective erosion and sediment control structures were observed in places at the Komo Airfield. The freshwater ecological monitoring has found probable ecological impact downstream of the Komo Airfield, interpreted to most likely relate to increased turbidity or sedimentation. Downstream of the HGCP, probable ecological impact was also encountered, but in this case it is difficult to distinguish impacts from site runoff or related to the mud flow accident that affected Akara Creek in Q4 2010, where impacts to fish were physically observed at the time of the event. Residents of Manu Village told the IESC that clearing of the ROW had eliminated the fish they use in the stream near the village. While the ROW did not cross the stream, they observed silt-laden runoff entering the stream resulting in negative effects to aquatic life.

4.7.2.6 Omati River Studies

EHL has completed the first year fisheries field studies, and results were provided to the IESC just before the site visit. The system for interviewing fishers is now well established, and cooperation is now very high. The catch per effort data presented to date, as well as the results of IESC interviews with fishers at Goare, did not suggest any significant drop-off in fish supply for food. The data suggested that catch per effort actually went up each quarter. During the dredging operations, the Goare fishers would set their gear in tributaries and backwaters, rather than the main stem. This site visit represents the first time that the IESC fisheries specialist had the opportunity to go in the field, on the water, and visit fishers on the Omati. Prior to this site visit, EHL consultants had indicated that, based on their field observations, there were few fish in the main channel where the dredging and pipe-laying would occur. During the visit to Goare Village, IESC discussions with the villagers revealed that fishing does occur in the main channel by means of a setline with large, baited hook attached to a large buoy, which is anchored to the bottom. They catch several large fish, including catfish, sharks, and jewfish during each four hour session. Fishing sessions in the main channel occur during low tides with calm weather.

Life histories of fish resources that could have been impacted by dredging and pipe-laying activities have not been documented such that impacts could not be predicted. Last year, the IESC requested a comprehensive list of species in the Omati River. The recently submitted 2011 Omati River fisheries utilization study improves the species composition breakdown resulting in documentation of seven species by scientific name and 12 other general categories of species. It is still unknown if any endemic species live in the Omati.

In response to IESC concerns for construction impacts expressed during the November site visit, EHL developed and implemented a monitoring plan, with the objectives to:

- observe the sediment plume from helicopters;
- measure dissolved oxygen in plume;
- document community grievances and claims from the quarter and EHL's responses and actions; and
- document the visual monitoring (with photos of species dredged up) of dredging vessels equipment and hopper (i.e. information confirming the level of fish entrainment or impacts to wildlife).

Because of fuel limitations, only one helicopter observation was made, which reported the sediment plume from dredging and sidecasting to be visible for about 3 to 4 boat lengths (300-400 m) from the vessel before merging with background turbidity. The in-situ water quality sampling was completed over three

days of dredging, from December 19th – 21st 2011. The objective was to record levels of dissolved oxygen (DO) and turbidity (nephelometric turbidity unit – NTU) during the active dredging and sidecasting operations. The in-situ water samples were taken at three depths (surface, mid and bottom) at five transects across the width of the Omati River; one transect located 800 m upstream, and four located from 300m to 2,000m downstream of the dredging. Over the three days of survey, there was no marked or sustained reduction in dissolved oxygen levels downstream of the dredging operations and given the high variations between and within the sites, no clear dredging-related DO signal. The report concluded that while NTU was elevated (potentially from dredging) at some locations and depths, it was not consistent over the three days and therefore unlikely to be an extended occurrence at any particular location or depth in the water column. Furthermore, there did not appear to be correlation with the observed elevated turbidity and reduced DO, and all NTU values were within ranges previously recorded during the baseline sampling.

While the IESC appreciates the efforts of EHL, it needs to be recognized that the program could have been improved. The study would have been more meaningful had the prime monitoring station been located much closer (50-100M) to the dredger (instead of at the distance of where the plume appeared to dissipate to background) and directly downstream of the plumes (actually two plumes were generated: one from the vessel prop-wash and one from the discharge), and then auxiliary stations at specified distances toward each bank. Monitoring was only conducted during three consecutive days in one reach of the river during the three months of work, and no monitoring was done during backhoe dredger operations along the first few kilometers downstream of the landfall. Based on observations from the L&CA fishery monitoring team, there is no reason to believe that a major fish kill was associated with the dredging, but there may have been some impact to fish. Goare and other villages reported findings of dead fish and crabs. On average one fish per day and total of ten mud crabs were reported during peak dredging activity in November and December, and very few dead fish/ crab reported in January and February. Goare villagers report that dead fish (mostly large fish) were still being observed. When questioned about the cause of dead organisms, they said most were likely the result of the dredging because there were no net marks or wounds on the dead fish. Observations of dead fish were reported to be rare before the river work began. In any case, dredging is now complete. Although not efficient, the monitoring was conducted and did not indicate major problems.

4.7.2.7 Caution Bay Studies

With respect to the jetty, the Project is to be commended for significant minimization of footprint beyond that anticipated in the EIS. Pile driving was not active during the visit. Pile driving noise dampening measures, such as wood blocks on the hammer or bubble curtains around the piles, are not employed. Mitigation is limited to a “slow start” pile driving approach, done to scare marine resources away from the site to prevent mortality/injury due to underwater sound (pressure) waves. While this action may result in minimal long-term resource/habitat effects, short-term noise effects from pile driving has affected fish behavior and fishing patterns, according to fishers’ reports to the IESC from Lea Lea village.

EHL has completed the first year (2011) report on fisheries field studies in the four key coastal villages, and results were presented to the IESC a few days before the site visit. Results indicate overall income per effort increased from Q1 to Q3, but decreased in Q4. Several factors affect catch per unit effort (CPUE) such as moderate cooperation (only 50%); seasonal differences in fish abundance, weather, and gear use; removal of fishers to Project employment; and shifts to other fishing grounds, etc. The IESC interviews with fishers from Lea Lea suggested that noise from the pile driving during pier construction was clearly audible, and that during driving, they changed fishing locations from the inshore reefs to fishing in their estuary, primarily for tilapia. There is a likelihood that as pile driving has moved into deeper water the effects of sound become more pronounced. The IESC also meet with officials from Porebada Village. Fishers from that village have the highest fishing success and are planning on fishing more offshore in the future. They did not indicate any significant issues with noise from the pile driving. Fishers from the village of Papa reported that they were upset because the Project has restricted their access to traditional fishing areas due to the construction of components of the marine terminal. Although they were informed this would happen, the fishers were taken by surprise when activities commenced as there was an internal breakdown of communication between the construction crew and CLO representatives.

With respect to the backfilling of the LNG pipe trench, previous sediment plume modelling showed some offshore coral resource could be exposed to plume. Post construction monitoring for total suspended solids (TSS) and water quality (WQ) showed no exceedances. The final report will be submitted in due course. Post construction coral surveys were also performed February 28 to March 3, so results were not available

at the time of the field visit, but preliminary observations, however, suggested possible effects appeared at the pipe landfall, jetty and at an inshore reef to the south. The fishers from Papa reported their impression that coral reefs had been impacted. The results of the surveys are expected to be available in April and will help clarify the situation.

4.7.2.8 Marine Fauna Observations

The IESC was able to verify that Marine Fauna Observation training was conducted aboard offshore vessels starting in 2010. To date, five pods of dolphins, one whale shark, one turtle, one shark, and four large fish were observed. The objectives of the marine fauna observation protocols were to minimize risk of collisions with marine fauna passing close to vessels and initiate specific mitigative measures when marine fauna are close to vessels.

4.7.3 **Recommendations**

1. EHL should consider the current characteristics (baseline) of hunting (which is already noted as a priority primary indirect impact), and its social /economic importance within the communities near permanent major facilities. This would provide a baseline against which future hunting levels could be compared (as job-related in-migration increases) near permanent major facilities within EHL's designate Priority Ecosystems.
2. Regarding PMA-4 (road use) the Project should re-evaluate not only that all parameters being recorded now are sufficient to fulfill any future indicator requirements, but also that the PMA is sufficient to adequately determine whether induced access is being avoided (and ESMP objectives met).
3. The IESC recommends the Project becomes aware of the standard in biodiversity offsets, developed by BBOP (published Jan 2012), which details a model suite of Criteria and Indicators and an assurance process. This may prove valuable to the Project, not only in their current work on offset design but also in any assurance monitoring related to development of PMA-5 (efficacy of the ODP).
4. The Project should continue to seek all opportunities to keep the construction and operational footprint to a minimum, and require all contractors to do likewise. For example, but not limited to:
 - a. Following the successful dispensations from OSL to narrow the 10m distance between the OSL and Project pipelines to 5m where physical constraints require this, actively identify further opportunities where the RoW could be similarly narrowed to avoid unnecessary forest clearance.
 - b. Operations could preferentially use (where appropriate) sites already utilized by construction, through engagement with the Reinstatement Register, and Associated Facilities/3rd Party Registers recently developed.
 - c. On Hides Ridge, seek opportunities to minimize the footprint of side-cast material pushed into sinkholes, by re-using existing side-casting channels and not creating new channels.
5. If EHL operations continue to consider keeping open the new Project road, allowing a shortcut between Kopi shore base and Kopi scraper station, the implications for mitigating any future induced access should be considered and included as part of the decision-making dialogue. The 700m section not previously in existence prior to construction by EPC5A/C1 will, if not closed and reinstated, require permanent access control measures. (repeat from IESC-V report Doc. No. 10-874-H4).
6. Regarding access to the Gobe MLV, the IESC recommends that the RoW service road to the MLV be a dead end road (and not accessible from both north and south RoW), to deter this becoming a thoroughfare and shortcut to access the OSL Gobe road from the Gobe to Kopi public road.
7. 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.
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

Kaiaam Bridge / Kikori River 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.

9. If the new road around Heartbreak Hill is no longer required, the IESC suggests the Project consider reinstating this stretch. There are no villages in the area that would utilize this stretch, and restricted OSL roads are either side of the new road. Therefore there is no value in leaving the section installed by the Project. Active removal of the infrastructure, then reinstatement, is in alignment with the hierarchy for controlling access as detailed in the Induced Access management plan.
10. The Road register could benefit by specifying the intended permanent fate of each access road used, and also includes input from Operations. This should feed into the Operations ESMP, to ensure that the decided permanent outcome for each is fully discussed and noted. By collaborating with Operations to maintain the register, this will not only keep the centralized resource as fully up-to-date as possible, but also provide value to both Operations and the Environment/Social group through consistency and track-able decisions for the Construction to Operational transition.
11. Project should consider whether the Komo nursery should be expanded to be capable of providing sufficient regrowth material to cater for the extremely busy period when the airfield approaches completion, so as to avoid extended periods of bare un-reinstated soils and slopes.
12. The Project should consider undertaking trials on native alternatives to Japanese Millet as a soil stabilizer for reinstatement, so that the 'exotic' species does not need to be taken or used above the clean-line on the Ridge.
13. Information from the Induced Access / Road Register should be incorporated into the Reinstatement Register, to ensure the reinstatement of shoe-flies and access tracks is similarly logged and tracked to successful completion.
14. Photo points should be used at key points across the Project area where reinstatement is being undertaken, so that photographic records capture progress at the same spots at regular intervals.
15. Suggest Contractors consider use of a Quarantine Inspector specialist during periods of high import volumes.
16. Suggest the Project re-evaluates the process of quarantine inspection sign-off, and the proforma as used by Agility at Lae, to ensure that sufficient detail on rewashing and refumigation decisions is sourced from NAQIA officers. Senior level dialogue with NAQIA could also help the agency better understand why inspection outcome details are so valuable to EHL.
17. EHL should consider having discussions with NAQIA regarding their recently developed Incident Management Procedures, and gain their input into how such a procedure might be put in place if a quarantine-related incident were to occur, whether in transit from an inspection facility or at a Project site. IESC would suggest the Project undertake a few table-top 'scenario' exercises with NAQIA, so to run-through both company and agency responses.
18. If not already done so, a Project wide weed register should be established, as per the stated outcomes of the current Weed Management Plan. This would record the presence of Priority 1 species (rare, occasional, common) or absence from certain sites or KP sections, with dates of initial observation, what controls were put in place, when follow up monitoring is required to monitor progress or prove site-eradication, etc..
19. Increase the frequency of Biotropica weed reviews to 6-monthly (versus the proposed 12-monthly) as long as RoW construction is ongoing (until reinstatement & handover is signed off), and encourage more systematic weed inspections from contractors. It is apparent that Biotropica's review has provided extremely useful and timely advice and contributed expertise at a stage in the project lifecycle where the risks from weed transfer are potentially at their highest.

20. EHL should review the processes by which contractors are able to act on results from *Phytophthora*-related soil sample analyses, to ensure processes are sufficiently streamlined and timely and field-actions taken in an appropriate timeframe.
21. IESC recommends fisheries surveys in Caution Bay continue at least through 2012 to have a baseline for assessing operational effects, and that surveys should focus on tracking success of individual key fishers in order to obtain a more standardized CPUE.

5 SOCIAL

5.1 INTRODUCTION

5.1.1 Scope of Social Review for this Site Visit

In total, the IESC engaged with some 140 people individually or in groups during the March visit, including those affected by resettlement and communities living adjacent to Project works areas. The IESC social review included (but was not limited to) the following activities:

- introductory presentations by L&CA in Port Moresby;
- briefing by the Government Affairs team on election planning and government arrangements for Infrastructure Development Grant (IDG) disbursement;
- 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;
- inspection of various construction areas including Omati dredging; Tamadigi camp; camp site at Moro (Daware replacement); pipeline construction spread near Tamadigi and early right of way clearing at Manu; the Tumbi landslip site and, Komo airfield perimeter access road.
- Aerial inspection of the spine line and access road for well pads B to G;
- discussion with a director of the Environmental Law Centre (independent observers of the RAP process);
- meetings with Goare village adjacent to the Omati dredging works;
- public meeting in Homa (60-70 people);
- meeting with seven Hides clan leaders at Nogoli camp;
- informal interviews with displaced families at Homa, Emberali and in the vicinity of Komo airstrip;
- visits to various replacement house sites and resettlement areas around Komo airstrip and at Emberali;
- meeting with Porebada woman's group, Boera school staff and Papa training course attendees.
- informal interviews with members of communities in the vicinity of major works areas⁸; and,
- informal roadside discussions at various locations adjacent to project sites and along the pipeline route.

The social specialist's access to communities in the Hides area was curtailed by demonstrations at the HGCP site entrance and security concerns in the vicinity. The social specialist did, however, meet with seven Hides clan leaders who were kind enough to convene at Nogoli camp and discuss their current perceptions and concerns. 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 Homa and Paua in the mid sections of the pipeline route for the first time.

5.1.2 Highlights and Challenges

Highlights of the March 2012 visit for the IESC included:

- EHL's logistical support to the PNG Government and direct assistance to affected communities in response to the Tumbi landslide. The PNG Government and National Disaster Relief team also performed well.

⁸ Sites visited during the March 2012 IESC visit included, but were not limited to: Goare village, Omati River; Tamadigi camp; observed pipeline spread near Tamadigi; Mano village; Moro camp/laydown (Daware replacement); Homa-Paua communities; vulnerable household on logistics route near Komo; Hides Quarry 1A landslip; Komo airstrip perimeter settlements; Emberali resettlement village; Porebada and Boera villages, near the LNG terminal; Papa villagers attending training course at POM training facility.

- effectiveness of the Community Issues Committee at Komo in moderating community responses to a recent traffic incident, and generally improved community relations in the Komo airstrip area (see Section 5.10);
- progress by the PNG Government with EHL support in defining a transparent and accountable process for managing Infrastructure Development Grants (IDGs), committed by the Government as part of Local Benefit Sharing Agreements (LBSAs) (see Section 5.13.2);
- progress in addressing water issues in Hides - Komo but with a need to continue E. coli water monitoring and resume hygiene and sanitation awareness training to communities (Section 5.6.2).

An ongoing and critical challenge for the Project is effective communication that bridges cultural differences, recognizes local reliance on oral communication (and relatively high illiteracy) and that recognizes customary approaches to information exchange. Two relatively serious confrontations (the melee involving three senior EPC5A managers at Gobe and the actions that lead to an injunction being taken out against certain villagers in Papa) had their origins in misunderstandings or miscommunication. The kind of focused effort that has been used effectively in HSE training directed towards non-verbal modes of communication, use of peer trainers and customary approaches to information exchange needs to be applied more widely both ‘inside the fence’ and ‘outside the fence’. This is crucial leading into demobilization where misunderstandings could potentially result in incidents that jeopardize life and property.

Some of the emerging social challenges observed by the IESC during the November 2011 visit were re-visited during the March 2012 field visit and specifically included the following:

- pipeline land access and resettlement planning - documentation and implementation is progressing too slowly and is now barely ahead of the pipeline construction spread (see Section 4.3.2.4); and,
- managing demobilization to avoid security confrontations and the risk of security incidents becoming safety incidents.

As noted in the November 2011 IESC report, while not EHL’s responsibility, it is clear that many landowners’ perceptions of the Project are clouded by the Government’s delayed performance in delivering commitments made in Local Benefit Sharing Agreements. Following the lack of transparency and misuse of the business development seed money, and the lack of any clear outcome from a government sponsored ILG assessment, there is also increasing landowner concern about whether royalties from the Project will be transparently and equitably distributed. While the origin of these perceptions rests with the Government, EHL’s operations will inevitably be leveraged to draw attention to the landowners’ concerns. While the Prime Minister’s March 2012 announcement in Tari about the IDG process and lodgment of the initial cheques totaling PNG Kina 120 million into PDL trust accounts was an excellent first step to delivering commitments, this has to be backed up by (i) an intensive, grass roots information and education campaign within each PDL area to explain how IDG funds will be distributed; (ii) support and capacity building to LLGs to enable them to be effective in assessing local services and infrastructure needs, identifying priorities and preparing budgeted project proposals; and, (iii) early implementation of some high visibility public works projects within the Hela area which demonstrate that benefits can be delivered.

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

As an outcome of the March 2012 visit, the IESC is satisfied that the aggressive actions taken by EHL to stabilize its management and stem the high turnover of L&CA staff have been successful. The organization is now fully resourced. As previously reported, the Acting L&CA Manager was replaced by a regular appointment in November 2011 and subsequently 50 staff have been recruited from within and outside of EHL. Key positions filled include Planning and Controls Manager, Community Affairs Manager, a National Content Adviser, and two Project Induced in-Migration advisers. A positive outcome is that National staff now forms nearly 80% of the team, up from 66% previously.

During 2012, as part of planning for Operations, EHL will commence the phased conversion of selected contract staff to permanent employees. Targeted training and staff development activities will continue with a focus on developing middle management to becoming L&CA leaders. The Resettlement team will be progressively demobilized as resettlement activities decline, with reallocation of resources within L&CA where possible.

The Level II non-conformance is closed.

5.2.3 Recommendations

None arising from the March 2012 review.

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

RAP planning and preparation is falling behind Project requirements to access land, particularly for EPC5A. As has been long foreseen by experienced L&CA team members, the Resettlement team is now moving into the Homa-Paua, Benaria and Angore areas where the Huli landowners have prior experience of negotiating land access and compensation from the oil project. There are also legacy issues stemming from the oil project that landowners would like to leverage EHL to resolve, even although EHL has no direct responsibility. In addition, in these areas the pipeline is moving into progressively more challenging topography with a need for some re-routes to avoid landslips that only become apparent with detailed ground inspection. These complicate negotiations with affected landowners.

Resettlement was observed to have occurred at Paua and along the Hides logistics route even although RAPs for these areas had not been approved. Relocation of families without an approved RAP is a serious non-conformance. A Level II non-conformance is raised. If the IESC comes across any further such instances on its next review, it will not hesitate to escalate this to Level III. Required corrective actions are as follows:

- complete as quickly as possible the Paua and Logistics Route RAPs and submit them to the IESC for review and approval;
- mobilize at least one more census and survey team;
- add ‘Lender approved RAP completed and locally disclosed’ to the Resettlement team/ L&CA; and,
- provide a forward-looking schedule of RAPs preparation so the IESC can be forewarned and turn around approvals in as short a time as possible.

The RAPs should be plans for land access and resettlement execution, not a record of ‘as built’ affected land and resettlement. RAPs would normally be prepared on the basis of the FEED pipeline alignment, so they always have a margin of error when re-routes occur (as they inevitably do). For this reason, +/- 10% error in the resettlement and affected land area census and survey numbers for a pipeline is common. With or without this margin of error, the process steps in the RPF must be rigorously followed. RAP addenda should be subsequently prepared to present final census and survey results.

The IESC heard complaints at Paua from people who had houses and/or gardens along the surveyed pipeline route, but whom were subsequently bypassed due to re-routing. Some claimed they had already invested time and effort in relocating structures and gardens, and they now feared they would not be compensated for their efforts. This is a problem commonly encountered during pipeline construction. It would be consistent with IFC PS 5 to offer people affected by such cases an ‘inconvenience payment’ to cover their costs in time and expenses. EHL should develop a clear and consistent policy on compensation for such cases.

From the perspective of the IESC, too much time is being spent on negotiating with speculative house builders (for whom, there is no obligation to compensate under IFC PS 5). While the Project has considered trespass prosecutions for speculative builders under the Oil and Gas Act, an action that is supported by the IESC and ELC, in practice the RPNGC has proved unwilling to enforce such measures. An alternative approach might be to look at some kind of bonus scheme for the clan landowners if they effectively prevent encroachment by speculators (who are always fellow clan members) on the pipeline right-of-way.

Subject to appropriate security review, the IESC strongly endorses Resettlement team proposals for establishing some field camps so that census and survey teams can stay overnight close to their place of activity. This would greatly increase the teams’ productive hours each day. It would also, in all probability, help to foster trust and better relationships with local communities.

5.3.2.1 Operations Phase Land Access Planning

Operations land access planning was proceeding well with good interaction between the Operations team and the L&CA team. As part of commitments to avoiding and minimizing displacement impacts, production facilities and infrastructure should take advantage of already-cleared and abandoned camp and laydown sites.

As previously noted, the Operations and Project teams should work backwards from commissioning dates to determine when the following activities need to be initiated:

- finalizing land use restrictions/ pipeline right of way maintenance agreements; and,
- initiating a pipeline safety education campaign.

Both will be significant logistical undertakings and should be planned well ahead.

5.3.2.2 Replacement House Delivery

A Level II non-conformance was raised in November 2011 for the protracted delays in resettlement house delivery. The corrective actions that should have been completed prior to the March 2012 IESC review are summarized in the following Table 5.1.

Table 5.1: Status of Corrective Actions for Level II Non-Conformance for Delayed Replacement House Delivery

Required Action from Nov 2011	Status	Outcome
Complete eight project built and ten kit houses (subject to logistics and security conditions)	Eight additional project-built houses were completed, in spite of six weeks lost time in 2012 due to the landslip/ security issues. The ten kit houses remain stranded in Lae.	Open. Solid progress given lost time in early 2012.
Schedule for delivery of balance housing packages in the Hides-Komo area (within, ~six months)	The Project has improved its tools for scheduling and tracking delivery of resettlement commitments, including housing. The Project indicates about 19 further houses will need to be built, with an estimate that these will be completed by October 2012 (subject to weather and security environment).	Closed

On the strength of solid progress, the Level II non-conformance is closed. A sustained high level of resourcing must be maintained to deliver the balance houses within a six month timeframe.

As a new initiative, the Project is offering water structures (tank or bladder type) as part of resettled households' Part C compensation component. Under this arrangement, the Project has committed to construct seventeen 3m x 3m bladder-type water collectors and thirty six 5m by 5m collection structures and tanks. This will have the following benefits:

- provides families with their own water supply so that they are not reliant on access to collective supplies;
- provides families with an improved water supply leading to reduced time and labor in terms of water collection;
- potential improvements in family health (if delivered with parallel sanitation training) i.e. standard of living improvements consistent with IFC PS 5;
- in the case of the 5m x 5m structures, the structure provides a roofed area that can be used for other productive activities; and,
- delivers compensation in the form of a fixed asset that benefits all family members, rather than cash which is easily dissipated often for the benefits of the household head at the expense of other family members.

It is well established that water improvement projects do not deliver health benefits unless the beneficiaries also receive basic sanitation training. EHL should ensure that resettler households receiving water tanks are included in its sanitation training programs.

5.3.2.3 Phase 1 Physical and Economic Displacement

Table 5-2 provides Resettlement team estimates of Phase 1 (2010-2014) physical and economic displacement as of March 2012. Bracketed figures indicate estimates provided in the October 2009 RPF. Economically displaced household numbers are difficult to compare with earlier estimates as the Resettlement team has changed its categorization. The figures include compensation paid for a large number of speculative structures, rather than true economically displaced families.

The most significant trend discernible from the table is that the total number of physically displaced households looks likely to be close to the estimate made in the RPF. Most significant changes in physical displacement since the table was last updated are as follows:

- a reduction in resettlement numbers due to reduced works along the Heavy Haul Road (78 households actually displaced versus the original RPF estimate of 253 households);
- an increase in pipeline resettlement estimates as the Project gets a clearer picture of likely resettlement numbers at the northern end of the pipeline route (113 households affected versus the RPF estimate of 50 households); and,
- spinline resettlement along the final route between Well pad B and the HGCP where significant influx has occurred (estimated 25 households).

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 Feb 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	+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 + TBD	-16(+TBD)
Landfill	Hides & Gobe (TBD)	54	15	38	+23
HDD	Tagri, Mubi, Wah and Kikori	31	5	TBD	-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
Total		3,079	465 (+TBD)	449 +TBD	-16

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

5.3.2.4 Processing of RAPs and CRPs

The status of RAP/CRP documents as of April 2012 is summarized in Table 5-3. The number of RAPs and CRPs produced to date has risen from the 13 originally listed in the RPF to 25 to date. The Resettlement team needs to be mindful that breaking the Project into more and more RAPs is not necessarily efficient. It increases the Resettlement team workload in terms of writing, reviewing and seeking approvals, but it clears relatively less land for contractor occupation than more consolidated RAPs and CRPs.

Table 5.3: Lender Review and Approval of RAPs (29 March 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)	✓	✓	✓	No
Paua RAP (KP 59-6550.5-59)	✓	✓	No	No
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)	✓	✓	✓	No
Hides Quarries 1-3: RAP Addendum 4 Side casting additions	✓	✓	✓	No
Spine line & Well Pad Access Rd C-G	✓	✓	✓	No
Quarry Area 1 (Tumbi Quarry) RAP	✓	✓	✓	✓
Hides Vehicle Staging Area RAP	✓	✓	✓	✓
Caution Bay CRP	✓	✓	✓	No
Omati Waterways CRP	✓	✓	✓	No
Duware Camp & Tugiri Quarry CRP	✓	✓	No	No
Kantobo to Kutubu Addendum KP 97.5 Laydown	✓	✓	✓	No
KP 4.5 Camp	✓	✓	✓	No
Paua RAP	✓	✓	No	No

RAP	Received	IESC Reviewed	Lender/IESC Approved	Finalized & Disclosed on EHL website
Homa RAP	✓	✓		
KP 24.5 Camp	✓	No	No	No

5.3.2.5 Valuation of Trees and Crops

The Resettlement team will undertake top-up payments to achieve full replacement value during the first half of 2013. The valuation study for mid and lower altitude project areas by Australian National University Enterprise Pty. Ltd. has been completed.

5.3.2.6 Resettlement Monitoring and Reporting

For internal monitoring, the resettlement team is working on a monthly dashboard type monitoring report, but this remains a work in progress.

The IESC has not seen a consolidated resettlement monitoring report since August 2011. Similarly, livelihood restoration monitoring appears to be occurring on an ad hoc, site-by-site basis without any consolidated reporting. 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 any recent evidence that this has been happening. Monitoring reports are an important tool for the Project Management and IESC to understand at a Project level to what extent progress has been made towards restoring or improving standards of living and livelihoods. This is a critical compliance function. A Level II non-conformance is raised. The corrective actions that need to happen include the following:

- submit the missing external monitoring reports; and,
- prepare a schedule for the biannual resettlement monitoring reviews and report completion (by August 2012 review).

5.3.2.7 Replacement Community Infrastructure

Good progress was observed on the construction of perimeter roads around the HGCP and Komo airstrip. These need to be pushed through to completion. Resettlers in Emberali reported that it still takes them two hours walking to reach the Komo airstrip perimeter road, but more than twice this time if they are carrying some-one who is ill or incapacitated. Road access is an essential service that must be restored as rapidly as possible. Commitments made by the Government and EHL with respect to road access to the east of the Komo airstrip must be fulfilled.

5.3.2.8 Vulnerable Households

Five corrective actions were identified as part of the Level II non-conformance raised in November 2011. Project actions and outcomes are summarized in the following Table 5.4.

Table 5.4: Status of Corrective Actions for Level II Non-Conformance on Vulnerable Households

Required Action from Nov 2011	Status	Outcome
Substantive assistance delivered to improve living conditions to the 2 Hides hardship cases observed by IESC in November 2011	The Project provided an update on support provided to date. This was deemed to be appropriate & satisfactory.	Closed
Consolidated and verified register of vulnerable households	A consolidated register had been prepared. This identified 49 vulnerable households with 15 identified as 'high priority' for assistance.	Closed
Completed audit of current status of VPs with list of corrective actions arising	The audit of vulnerable households was reported to be about 60% complete at time of the March 2012 visit, and was ongoing. Support measures were being delivered to	Complete the audit/field verification of the current status of vulnerable households needs, including coverage of households

Required Action from Nov 2011	Status	Outcome
	3 'high priority' households at the time of the review.	outside of the Hides-Komo area; and, continue implementation of supporting measures identified.
Time-bound VP monitoring plan & tracking system for going forward	A system for regular and ongoing monitoring needs to be documented and implemented.	Prepare a monitoring program and provide evidence of tracking.
Lessons learned from investigation of failure to respond to vulnerable cases interviewed by IESC.	The Project has appointed two appropriately skilled and experienced staff to be responsible for assessing vulnerable peoples' need for support and for managing implementation of support measures. A Vulnerable Committee has been established to vet assistance to be offered. The vulnerable team was performing effectively in the field.	Closed

The vulnerable people's management framework needs to not only provide retroactive support to those already displaced households, but also to proactively support those presently being identified by the resettlement process. This is a compliance requirement.

The IESC was generally satisfied with the progress that has been made towards achieving effective vulnerable peoples' support system, but there remain actions to be completed (see the right column of Table 5.1). The Level II non-conformance is reduced to a Level 1 non-conformance subject to completion of the identified actions.

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 March 2012 review. ELC had been involved in the lease rates negotiation with Hides landowners for the HGCP that were ongoing during the IESC's visit. From that experience, ELC highlighted again the importance of clear and culturally appropriate communication. Many (but not all) issues evaporate when there is clear understanding.

Matters discussed with ELC included the following:

- a need for further training to EHL's Land and Resettlement teams on legal due process with respect to signing and witnessing of land (IPCA) and resettlement agreements. To witness, ELC must be present at the time of signing. ELC cannot witness agreements after the event;
- ELC also highlighted the 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;
- pipeline route changes and related obligations to compensate or not compensate; and
- managing speculative house construction after IPCAs have been signed.

EHL should consider providing refresher training to the Land and Resettlement teams on legal due process. Signing and witnessing of agreements will be an ongoing aspect of Project and Operations land administration. Team members should be thoroughly conversant with the procedural requirements.

The IESC has previously expounded on the risks under the Fairness of Transaction Act (1993) for EHL if ELC or equivalent third party is not present to verify and witness that landowners or resettlers fully understand the contracts that they entering into. IFC PS 7 (2006) also requires that Indigenous People

undergo ‘free, prior, informed consultation’⁹. Disclosure of the IPCAs prior to signing is part of ensuring that participants are informed about what they are agreeing to.

5.4.3 Recommendations

1. Provide refresher training to the Land and Resettlement teams on legal due process particularly related to signing and witnessing of agreements (repeat recommendation).
2. Ensure that the content of IPCAs is locally disclosed for a reasonable period ahead of signing to demonstrate that the IFC PS 7 requirement for ‘free, prior, informed consultation’ has been complied with.

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;
- 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 advise on compensation investment and business options.

5.5.2 Observations

The agricultural livelihoods program continues to deliver a broad range of initiatives. The focus since the last review has been on distributing plant stock, seed and poultry (chickens and ducks). Training has also been provided in care of grafted citrus, care and management of poultry, and an introduction to vegetable seedling nurseries and transplanting of temperate climate vegetables. These initiatives have the potential to diversify and introduce a cash earning component to household livelihoods.

The food processing courses directed towards women (baking; kaukau, banana and cassava processing for flour; fruit processing and jam production; marita processing) also appear to have had a very positive mobilization impact and created significant cash earning opportunities for women. EHL has introduced baking to over 500 women in the Hides and Komo areas. Cakes and scones are produced using flour made from local staples. EHL has also facilitated establishment of a more local source for drum ovens. A tray of cakes sells locally for 300-400 kina (USD 140-188). The sustainability of baking as a source of cash flow will depend on continuing and affordable access to drum ovens (which the Project has facilitated) and the prevalence of a cash economy in the post-project construction period.

“Our menfolk are staying at Komo station so that they can go to work every day on the Project. Many of them have taken second wives and we don’t see much of their wages out here in the bush. The drum ovens and our new baking skills have been a godsend. We can earn 6-800 kina a week which helps support ourselves and our children.” Baking course participant, Emberali.

Challenges going forward will be to:

- extend the geographic reach of livelihood programs beyond the Hides-Komo area to the newer areas experiencing resettlement and loss of gardens in Homa-Paua, Angore and Benaria;

⁹ The latest version of IFC PS 7 (1 January 2012) requires ‘free, prior, informed consent’. This new version of the performance standards is not applicable to PNG LNG, but it does indicate that best practice has moved beyond just ‘free, prior informed consultation’.

- develop a Project-wide livelihood monitoring reporting system that consolidates findings across the whole project, not just individual resettlement areas (see also Level II non-conformance, Section 5.3.2.6); and
- prepare for the second phase of livelihood program delivery targeted to address the needs of a demobilizing Project workforce.

Another issue identified during a presentation to the IESC on Project measures to manage the spread of *Phytophthora*-related dieback, is that one of the causal factors was identified as the distribution of plant stock by agricultural programs.

5.5.3 Recommendation

1. Review the sourcing of plant materials being used for the agricultural livelihood program to verify that they are *Phytophthora* free and consider the need for a sourcing protocol to ensure that the Project livelihood program does not inadvertently introduce harmful strains of *Phytophthora* to the Project area.

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 Water Task Force in the Upstream North had made excellent progresses in addressing water impacts and water-related grievances. Twenty-seven water structures have been completed in communities experiencing adverse water quality impacts with a further 7 structures and 43 water tarps to be delivered. The water tarps are a locally produced collection-cum-storage bladder suitable for a household that holds about 200 liters of water. Hygiene and sanitation training is being provided in conjunction with the water structures by NGO, Population Services International (PSI), through its Community Led Total Sanitation (CLTS) Training Program. CLTS training had been completed in five villages in the Malanda area, but the program had to be stopped due to the landslip and PSI security concerns ahead of elections. Training will be recommenced in August.

Of the 39 water grievances received by the Project to date, 22 have been closed with the balance expected to be closed by May/June. By this time, the balance of water structures will have been delivered. Only one water-related grievance was received in February, down from 6-12 per month in the preceding months.

Excellent as this response has been, the IESC notes that a program of regular water quality surveillance should be continued with feedback to communities on findings. The health risks associated with increased

population concentrations will persist until after construction demobilization when many of the in-migrants are expected to disperse.

Pipeline construction is now moving into areas where it impinges on roads used by communities more than it has done in the past. There are three complaints in the grievance register relating to damage to roads and a bridge. The IESC would anticipate that such complaints will increase, as is always the case on pipeline projects where construction vehicles share roads, culverts and bridges used by communities. Communities should have assurance that roads will be maintained in a passable condition throughout the construction period and that roads, bridges and culverts will be reinstated to at least their pre-construction condition upon completion. Communities (e.g. Homa) are understandably dubious about the likelihood of local or provincial government reinstating roads upon construction completion. Project responses to Homa community queries about responsibility for road repair and reinstatement made during a meeting with the IESC were very circumspect.

At present, it has been made very clear to the IESC that road-related grievances (where they relate to a public road) are treated as 'issues', not grievances. With this arrangement, it is unclear to the IESC how Project Management will become aware of road damage-related complaints and any lapses in contractor performance or adverse community reaction thereto. It is also unclear how the Project can fulfill its obligations under commitments 27.003-27.006 of Community Infrastructure Management Plan if damage to roads or infrastructure is not flagged by the grievance process. It is recommended that EHL review these commitments and ensure that it has effective processes in place to meet them.

5.6.3 Recommendations

1. Record complaints about damage to roads, bridges and culvert (irrespective of ownership) in the grievance register (not as 'issues') so that Project Manager can actively monitor contractor performance and community reaction.
2. Review commitments 27.003-27.006 of the Community Infrastructure Management Plan and ensure that EHL has adequate processes in place to fully implement them.

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

Key security challenges identified by the Security team remain as follows:

In the Project work areas:

- systemic criminal activity (clan-based, organized crime);

- unfulfilled government commitments (Benefit Sharing Agreement commitments) and related unrealistic landowner expectations;
- ongoing threat from inter-clan feuds and issues relating to labor relations and 2012 elections; and
- alcohol related incidents remain prevalent.

In Port Moresby:

- carjacking (in Port Moresby and Lae) and opportunistic crime continues to be a serious problem;
- in-migration of people looking for work has compounded law and order issues; and
- 2012 election risk assessment planning.

The IESC was given a full account of actions taken in response to the pay-back incident by Hides Security Services personnel at Komo reported in the November IESC report. The incident has been thoroughly investigated. The two perpetrators have been identified and formally charged. The IESC was also briefed on the Country Global Security Adviser's site security review plan which covers all EHL and contractor sites. Amongst other items, the program reviews cover all aspects of the Voluntary Principles implementation, with many security parameters being reviewed on a monthly basis. The Level II non-conformance is closed.

The Security team should be closely involved in a detailed review of the melee involving senior EPC5A management at Gobe in January 2012. The Security team must be given a forward-looking schedule for all major workforce demobilizations. Clear protocols for the presence of RPNGC personnel during periods of demobilization also need to be established as part of an overall Project demobilization plan.

5.7.3 Recommendations

1. Develop a Project-wide workforce demobilization plan and ensure that the Security team and RPNGC are given sufficient lead-time to be able to plan resources and their deployment well ahead of contractor demobilizations.

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

EHL provided to the IESC hard copies of the following documents:

- Hides Komo Project Induced In-Migration Report and Hides-Komo Influx Management Plan; and
- Kikori-Omati Induced In-Migration Report and Hides-Komo Influx Management Plan.

The IESC and the authors of the in-migration studies have divergent views on what constitutes in-migration, the kind of measures that might be used to manage it and what constitutes a management plan.

IFC PS 1 and PS 4 are based on assessment of risks and impacts and design of mitigations to address these. Within this framework, it is largely irrelevant whether the increased population in Project areas is intra-Huli or extra-Huli, less or more than the Porgera project, or defined using 'emic' or 'etic' criteria. Such fine distinctions will have little relevance if there is, for example, a cholera outbreak due to increased concentration of people and poor sanitation. The focus of the PIIM actions plans should be on the risks posed by in-migration or increased population concentrations, irrespective of where those populations come from.

IESC observations are as follows:

- the in-migration studies take a highly selective view of what constitutes 'in-migration' that conveniently excludes 'aggregations' such as those around Well Pad A (Hides), Komo airstrip and population increases and impacts such as those reported by the Pastor in Kopeanda (November 2011 IESC report) on the basis that these are primarily 'redistributions' and 'second houses', not 'influx per se';
- there is no assessment of health, water and basic sanitation risks that should be a primary concern for the kinds of short-term, opportunist 'aggregations' or settlements in Hides and Komo, and for locations where local population has markedly increased due to guests/sponsored workers (IESC note: Fortunately, while the PIIM study does not recognize these risks and recommends a 'do nothing' approach, the risks have been identified and responded to by other Project teams);
- the PIIM study does not appear to have involved interaction or drawn on intelligence and observations from other Project disciplines such as Health, Environment, Biodiversity, L&CA, the Water Task Force, and the like;
- the in-migration reports eschew use of the most obvious and cost effective empirical tools for quantifying in-migration impacts – the remote sensing imagery that the Project obtains on a quarterly basis covering the entire LNG plant area, for example, and the results of the Integrated Health and Demographic Surveillance System (iHDSS) socioeconomic and nutrition surveys that are supposed to form a basis for project social monitoring;
- where the in-migration study does identify substantive adverse impacts (e.g. reduced attendance at Yuni school due to children's fears of increased traffic; loss of 9 out of 13 teachers to Project employment), no mitigations are proposed; and
- the management plans make 'suggestions', but do not commit to any time-bound actions.

The IESC can see little added value in expending USD 200,000 on 'data entry clerks' and 'statistical analysts' to monitor in-migration in the Hides-Komo and Kikori-Omati areas as proposed by the respective PIIM action plans for these areas. The Project has already implemented monitoring using satellite imagery that will readily and cost effectively capture land use change and changes in settlement patterns and numbers of structures.

For the LNG Terminal area, there is a pragmatic and appropriate PIIM Action Plan already being implemented. Actions going forward should involve:

- complete the PIIM Action Plan defined activities for Porebada, Lea Lea and Papa based on community mobilization and basic land use planning in coordination with the provincial government;
- seek to extend those activities to Boera, if and when that community expresses an interest to proceed;
- monitor population growth and land use change that has occurred in the LNG vicinity since PNG LNG construction start in Boera, Porebada, Lea Lea and Papa and areas adjacent to the LNG site using satellite imagery (which the Project routinely collects) and the results of the iHDSS surveys; and
- share monitoring information with the Central Province Government so that it can use it as a planning resource.

For Kikori-Omati, Project construction activity is largely over and the IESC accepts the Kikori-Omati Induced In-Migration Report finding that construction activity did not contribute to significant population change. PIIM management actions for the future should be aligned to add value to Project Biodiversity team plans for the Kikori basin, as well as Health and Community Support activities. There will be continuance of the trend for in-migration to Kikori from the Omati and Kikori delta (not Project induced). It remains to be seen what future impact the project constructed Kikori bridge will have on clan occupation/assertion of rights in the vicinity of the Kikori crossing. It also remains to be seen whether mooted plans for a Kikori to Tari road connection are realized and what population impacts these may or may not have in the Kikori Basin.

- use satellite imagery to monitor changes in land use and settlement patterns with follow-up ground assessment where indicated to test for adverse impacts such as those listed in the Community Support Strategy; and
- coordinate with the Biodiversity, Community Health and Community Support teams (and provincial government, LLGs) to identify appropriate mitigative actions if and when warranted.

For Highlands areas, the IESC considers that the Project has moved to address some of the issues related to population influx (in particular, water and health and sanitation issues). A rapid gap analysis should be undertaken to ensure that all population growth ‘hot spots’ have been covered, and that there are no residual PIIM risk/impact issues left unaddressed. The CSS list of adverse PIIM impacts might be expanded into a systematic checklist.

- use satellite imagery to identify areas (‘hot spots’) where there has been rapid growth in settlement/change in land use since the Project construction commencement (e.g. around Komo airstrip, Komo Station, around Well Pad A/HGCP area, Kopeanda, Juni);
- convene experts from the Water Task Force, L&CA team Community Health and Community Support (and possibly, LLG representatives), to undertake a rapid appraisal of each of the influx ‘hot spots’ to identify whether there are any gaps in addressing influx-related environmental, social, health impacts or risks;
- where warranted or where actions are not already underway, develop an action plan to address impacts and risks for implementation either through Project support or as possible IDG initiatives; and
- use existing tools and systems (L&CA community monitoring, environmental monitoring, grievances, satellite monitoring) to monitor risk areas associated with population influx going forward.

5.8.3 Recommendations

1. Ensure that the PIIM impact monitoring (clearing, land use change, settlement change, number of houses) is systematically incorporated and reported on as part of the satellite imagery monitoring program.
2. Complete a rapid appraisal of influx ‘hot spots’ in the Highlands to determine if there are risks or impacts that need to be addressed and develop a mitigation action plan.

3. Follow up the following issues raised by EHL's experts in the Hides-Komo PIIM Report and, if warranted to ameliorate adverse impacts of the Project, implement appropriate corrective interventions:¹⁰
 - reported loss of nine out of thirteen Yuni School staff members due to Project recruitment; and,
 - high pupil non-attendance at Yuni School reportedly due to children's fear of increased traffic.

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

Contractor mobilization and in-country presence has clearly resulted in rapid engagement of local business and suppliers and in a steep increase in the work force. Although the Project peak is still to come towards the middle of 2012, the increase in national workforce numbers will de-accelerate as some EPCs demobilize. The demand for national workforce employees is also expected to fall 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 still exists with respect to procurement and supply is extending Project stewardship to organizations and facilities primarily dedicated to serving the Project. The process has started, but is not fully rolled out. After the November field visit IESC had recommended for the Project to work on capacity building and skill development on workers' rights, worker-management relations, etc. for the Project's supply chain. Consequently, IBBM developed and delivered a training course on human resource management and industrial relations in February, with attendees from EHL, EPCs, from the main umbrella Lancos - LABA and HGDC, and from DLIR.

The training was delivered by a dedicated expert and offered topics such as: international labor standards; worker engagement and relations; HR Policies; contracts of employment; remuneration; occupational safety and health; diversity in the workplace and workplace discrimination; employment tribunals, and redundancies. Participants felt they gained insight on how a human resource division in a small, medium or large enterprise should operate in order to develop fair and consistent approaches to manage and develop its work force and to foster constructive industrial relations. Participants especially appreciated the discussion on redundancies to better prepare for Project demobilization.

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

¹⁰

Project experience of interventions at Hides School revealed the complexity and difficulties of moving to address what are deep-seated systemic problems in the schooling system with short term actions. The IESC acknowledges that a careful assessment of the Yuni situation must be made before any action is taken.

concretely verifying the existence of any child or forced/bonded labor practices¹¹. Eventually such a ranking process should lead to exclusion of such suppliers from the Project supply chain.

5.9.2.2 Project Procurement from Local Business

EHL and its contractors combined have spent almost US\$2.1 billion (K3.6B) as of March 2012. 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 currently working on the Project, 70% of which is actually provided through Lancos. Approximately 8,500 PNG nationals are currently employed on the Project where the total workforce now exceeds 16,200. Females represent about 7% of the total labor force, of which 93% are PNG nationals. Although 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), the total of employed nationals is slightly less than Q4 2011 and over the past three months the percentage of PNG nationals has dropped from 60 to 51 percent of the workforce, even though, paradoxically, Lanco spend increased over the same period. This trend is expected to continue in 2012 with the demobilization of the Upstream Infrastructure contractor (C1) and the increasing requirements for highly skilled labor at the LNG Plant and HGCP sites. The figure below shows numbers of national Project workers per quarter through Q1 2012 (Figure 5.1).

In terms of workforce development, the Project is committed to providing positive, productive and supportive work environments. Key to this is developing and retaining a highly talented workforce that is representative of Papua New Guinea. The expertise of Papua New Guinean workers is being developed through dedicated facilities such as the Port Moresby Construction Training Facility (POM CTF). To date, the Project and its Contractors have trained more than 6,000 Papua New Guinean citizens primarily to gain in-construction and support activities skills and some for future production roles. This equates to more than 700,000 hours of training delivered, with around 200,000 hours completed Q3 alone. Refresher training courses are being offered to update worker skills for those who have been engaged on the Project for more than 12 months.

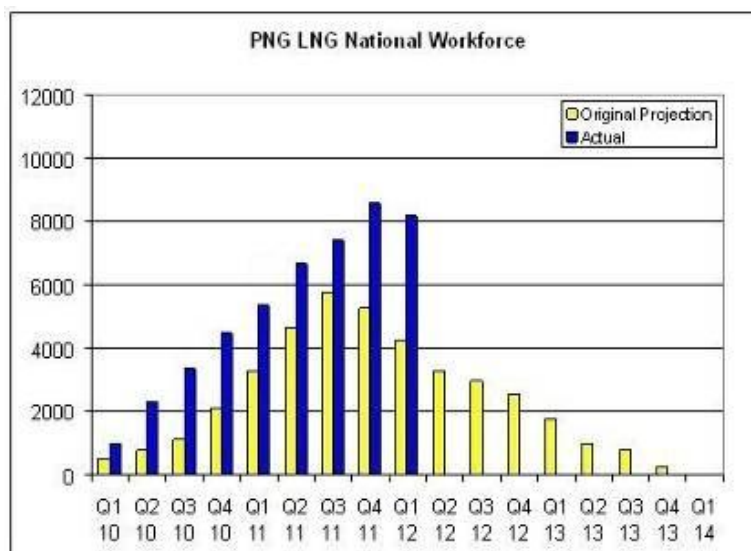


Figure 5.1: PNG LNG National Workforce – Actual versus Projected

Source: Updates provided by EHL.

¹¹ 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.

Project-related spending with Lancos totals Kina 880 million (US\$424 million) through Q1 2012. Just within Q1 2012, EHL procurement of Lanco labor, services and materials exceeded Kina 195M (US\$94M), representing a 30% increase over the previous quarter. 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.

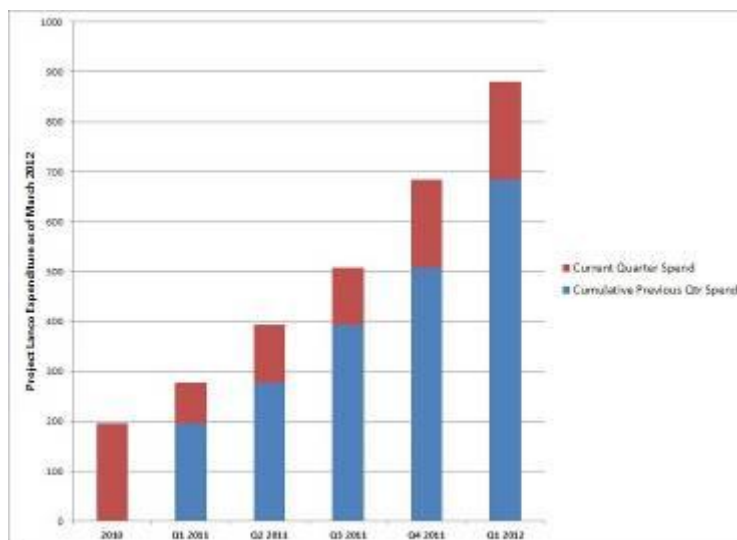


Figure 5.2: PNG LNG Expenditures for Lancos

Source: Updates provided by EHL.

Of course, Papua New Guinean businesses other than Lancos are also providing goods and services to the Project, mainly in the field of road and air transport, office and residential accommodation, staff recruitment and training via other PNG agencies, PNG Institute Medical Research and the PNG Institute or Banking.

5.9.2.3 Capacity and Skills Building of Local Business

EHL indirectly supports PNG businesses - including Lancos, through the IBBM Enterprise Center. The Enterprise Center was established in 2010 as a result of an agreement between the PNG LNG Project and the Papua New Guinea Institute of Banking and Business Management (IBBM). In terms of supplier development IBBM offers initial business assessment and capacity building and facilitates access to finance and Project related business opportunities. To date more than 180 companies have been assessed, more than 4000 training days and 500 advisory and mentoring days have been delivered, 10,000+ PNG Entrepreneurs have been assisted and 1300+ PNG Business and Lancos have been entered into the IBBM Supplier Data Base. Since the IESC November visit IBBM delivered upgrading courses in the context of their Directors Training program, i.e. Business Basics and Shareholders Training (level 1) and Fundamentals of Business Basics and HRM/IR (level 2).

IBBM's strategy towards Lancos specifically is centered on training, mentoring and providing technical support to mainly the Umbrella Lancos. In this framework staff from LABA and HGDC attended a new training course on human resource management and industrial relations in February last. This training course was developed and delivered by a dedicated expert and IBBM intends to introduce this IR/HR training as a new course to target Lancos for 2012.

The Project's Business Development team offers support to Lancos that consists of pre-contract preparations, contract negotiations and post-contract provision of services. Below figure shows the developments since the last IESC visit. The main Lancos are moving towards full nationalization of their staff, have their outstanding financial obligations on track and are professionalizing their management systems. Next steps in this direction include for example a business analysis to determine the impact of demobilization on LABA, an evaluation of LABA Joint Ventures and HGDC's efforts to move payroll systems progressively towards electronic processing of timesheets. Besides dealing with demobilization and identifying non-Project work opportunities, Lancos continue to face challenges such as lack of

commercial awareness and business discipline, protection of payroll (Hides), knowledge transfer to Joint Venture partners and limitations in the ICT environment.

Table 5.5: Business Development Accomplishment with Lancos

LANCO(S)	DEVELOPMENTS BETWEEN NOVEMBER 2011 - MARCH 2012
LABA	<ul style="list-style-type: none"> Project workers down from 1,650 to 1,400, with projected peak at 2,400 (excl. employees in Joint Ventures). Joint Ventures: LAG (catering) 475 employees, LSSL (security) 258 employees. Projected annual revenue 2012 Kina 38 M, previous estimate at Kina 27.6 M. Milestone advance repayments to EHL remain on track. No EHL funded expatriates remain supporting LABA, as compared to one expat previously. Labor database remains operational providing an inventory of available personnel from the 4 villages. Director Mentor program continues. LABA Annual General Meeting at 23 December 2011. Succession Plan developed - to be reviewed quarterly. Business Scorecard developed - Key Performance Indicators to be reviewed every month. MOU signed 8 February between LABA and BSP, to provide banking facilities and 2 ATMs at LABA site.
HGDC Ltd	<ul style="list-style-type: none"> Project workers up from 2,200 to 2,400, with projected peak at 3,000. Staff running JV businesses remain 410. Expatriate staff embedded in the organization down from 9 to 5. Fortnightly payroll Kina 3.0 M (up from Kina 2.6 M), expected to increase to almost Kina 3.6 M (includes wages and ration allowance). Cash balance = Kina 13.0 M (up from 9.0 M). Monthly Plant & Equipment Revenue remains Kina 2.1 M. Outstanding debt payments are up to date. Experiencing a 60 day turnaround on receive to pay process (as compared to 10.5 M outstanding). Working capital requirements remains Kina 12.0 M / month. Completed of all outstanding shareholder equity payments. Executed a lease with ANZ for installation of bank at Para Camp. All staff employment contracts completed. Continuing agreement with IRC regarding payment of Kina 12.0 M in tax obligations over 24 months, payments are up to date.
Pipeline ROW Lancos	<ul style="list-style-type: none"> Approximately 290 km from Omati to Hides. 9 distinct cultural areas. 4 major Lancos but 54 key sub-Lancos (excluding Hides sub-Lancos). Block 1 – General demobilization for EPC5A and EPC 2. Block 2 – GFE participating in Gobe Spur Line. Block 3 – Pipeline work now in the lower Kutubu area. Block 4 – Early works starting (access and camps). EPC5A PNG workforce up from 1,400 to 1,692 – percentage of total workforce down from 78% to 77% and number of women up from 89 to 135. EPC 5A PNG workforce profile: Skilled down from 33% to 31%, semiskilled down from 23% to 21%, unskilled up from 44% to 48%. Other PNG workforce: EPC 2 (36); Lanco staffing (290); TWL staffing (245) – total of 571 up from 367 previously. Employment from 20 Provinces with SHP & GP slightly declined from 88% to 86% of the National workforce. Hrs of training to National workforce up from 22,000 to 54,000. Revenue to Lancos up from Kina 26.5 M to Kina 46 M (as of 29 Feb). Direct Revenue Flow to sub- Lancos (# of sub Lancos). <p>KERKOI►(2) GFE►(4) KRS►(11)</p>

Source: EHL Lancos update March 2012.

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.

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 IESC has previously expressed its confidence in the approach that has been adopted by the Community Support team. During the present review, the IESC was impressed by the progress of Community Support initiatives in the Komo airstrip/Komo station area where sustained effort has been directed towards ‘personal viability training’, community mobilization, leadership training and community organization formation. A recent incident in Komo demonstrated the value of these kinds of ‘soft’ program. The Komo Community Issues Committee (CIC), a body set up with Project assistance and that has received training through the Community Support program, was able to moderate local community reaction to a traffic accident and payback killing. The IESC has previously witnessed how similar programs led to constructive community relations in remote parts of Southern Caucasus and post-conflict Kurdish areas of eastern Turkey. It is confident that with persistence over a 2-3 year period such programs will also prove effective in the Hela area.

With progress in Komo, EHL needs to work hard to concentrate equivalent effort and resources in locations such as Hides, Juni, Homa-Poua, Angore and Benaria. Such programs will not be immediately effective and will not prevent the occurrence of further blockages and security incidents. There will be setbacks and communities will progress at different rates. With time, however, they will contribute to more constructive relations with communities, productive dialogue and quicker resolution of disputes when they arise.

5.10.3 Recommendations

1. Prepare ToR and identify potential parties to undertake the third party, mid-term evaluation of the CDS program (for implementation Q3 2012).

2. Review whether sufficient resources and logistical support (especially accommodation) has been allocated for effectively expanding personal viability training, group and community mobilization programs into more difficult to access Project areas.

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

Together with the L&CA teams, the Stakeholder Engagement team is entering a challenging period. Specific challenges going forward include the following:

- managing and effectively responding to the rumors and mis-information that may circulate during the election period;
- community preparation for work force demobilization; and
- planning an education campaign relating to safety and land use restrictions to apply during pipeline commissioning and production.

Experience from other large projects indicates that the election period will present particular challenges for managing rumors, mis-information and implied commitments made on the Project's behalf by aspiring electoral candidates or troublemakers. Prior to the election, the Stakeholder Engagement team should anticipate potential communication challenges that could arise during the election campaign and have well prepared responses. Timely issues management to prevent rumors and misinformation gaining currency is a key factor.

Work force demobilization places great pressures not only on demobilizing workers, but also on their families and communities. The Stakeholder Engagement team has an important role to play in making Lancos, community leaders, local and provincial government and communities aware of the timeframes for demobilization, anticipated impacts on families and communities. Project initiatives to assist and provide other avenues for workers and their families to receive support and counseling are needed. Reference should be made to the IFC *Good Practice Note on Managing Retrenchment*. Stakeholder Engagement initiatives need to form part of a global project workforce demobilization strategy.

It is not too early to planning the roll-out of an information and education campaign to explain to landowners (i) activities that will take place during pipeline commissioning; and, (ii) the nature of safety and land use restrictions that will be applied along the pipeline route around above ground installations. This will be a major logistical challenge should be developed in conjunction with the Operations team.

5.11.3 Recommendations

1. Consider holding an internal workshop to identify some of the potential community communications challenges that could arise during the election period and develop responses.
2. As part of wider Project workforce demobilization planning, determine community preparation and information dissemination needs and the Stakeholder Engagement teams.
3. In cooperation with the Operations team, start planning for the roll-out of an information and education campaign to explain to landowners (i) activities that will take place during pipeline commissioning; and, (ii) the nature of safety and land use restrictions that will be applied along the pipeline route around above ground installations.

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 system is operating satisfactorily. The system has received fairly steady 30-35 grievances per month since August 2011. The IESC considers this figure relatively low compared to similar sized construction projects. Project Management should be mindful that a low rate of grievances may indicate either good project performance in managing adverse impacts, or poor grievance capture.

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 about water continue:

- *Two complainants on behalf of the T----- community say they own about 18km of the oil and gas pipeline route. Within this portion of the route, the community has creeks and streams flowing which help to make the place wet and retain the soil fertility. The community has witnessed at KP-----, that the once-flowing creeks and streams are no longer flowing. The community has not seen any signs of water for quite some time. The community is asking the Project to explain why these creeks and streams are no longer flowing like before the pipeline construction began, otherwise they will take the Project to court to address their concerns.*
- *Complaint that human feces and sewage is coming out of the B----- camp and causing pollution to the nearby C----- creek, affecting the drinking water source for people living downstream.*
- *Water at Camp Y--- is being polluted by X Company. They are dumping their sewage into our creek and this is flowing into our main river. There are times that it smells out there.*

Numerous complaints are about missing out on employment or business opportunities:

- *The complainant demands that Contractor X hire his chainsaw, as he sees that is the only way that he will participate in any business spinoffs provided in the area. He has threatened to put a stop work in his area if his concerns are not satisfactorily addressed.*
- *Complainants were informed by Contractor Y that they would be given the opportunity to mend about 200-300 pairs of trousers. Both expressed their disappointment after learning that the work was given to another organization.*
- *Complainant requested the laborers undertaking Environment Rehabilitation work along the PL ROW between K---- and Y---- to be replaced by workers from the clans who own the land.*

Some complaints about damaged roads and infrastructure do appear in the complaints register:

- *The complainant blocked access to a work site and stopped all work. He claimed that Z---- road is in a deteriorating state and demands to know what the company is going to do about it because the company is the major user of the road.*
- *Complainant mentioned that contractor heavy vehicles used the Y Bridge and caused it to collapse. They reported this to the contractor CLOs but there had been no response to date.*
- *P--- complained that the chopper at Y----- approached the landing pad low over her house, and damaged her thatched roof and blew 8 large banana trees down. Would appreciate some compensation.*

Some complaints consist of a wish list or petition:

- *Petition given by village leaders from N---, B--- and I--- villages concerning list of demands (total 10 in all), with the main ones being additional tuppa tanks for N---, communal Market for the 3 villages, and B--- school ground leveling.*

Complaints about missing out on compensation due to re-routes are an emerging category:

- *The I-----, R---- and J---- Clans of R---- and D---- areas, especially those who expected resettlement packages along the old pipeline route, are upset after learning that the new reroute cuts mostly through the jungle. They had high expectations which have been thwarted by the reroute. Therefore, out of frustration they have asked the project to compensate them K5million for the pipeline to pass through their areas.*

5.12.3 Recommendations

Complaints about damage to roads or community infrastructure due to Project traffic should be recorded in the Grievance log.

5.13 OTHER SOCIAL ISSUES

5.13.1 Hides (Tumbi) Landslide

The IESC was not able to directly verify the mood or attitudes of community members neighboring the land slide due to the wider security context in Hides at the time of its visit. The landslide was discussed in an IESC meeting with seven Hides clan leaders. Two clan leaders expressed lingering concern about what triggered the landslide. As for any incident that results in significant loss of a life, a comprehensive PNG Government inquiry is essential. Even with such an inquiry, it is possible that a definitive cause may never be established. The inquiry may or may not contribute to 'social closure'.

5.13.2 Infrastructure Development Grants

EHL's Government Affairs team has worked hard with the PNG Government to promote adoption of a transparent framework for the orderly disbursement of Infrastructure Development Grants in Project-affected areas. IDG funds total PGK 1.2 billion to be disbursed over 10 years. On the March 13, 2012, the PNG Prime Minister, Mr. Peter O'Neill, outlined in Tari the process for IDG distribution. Some key features were as follows:

- IDG funds will be deposited in a trust account for each Petroleum Development License (PDL) area;
- local-level Governments (LLGs) within each PDL will submit project proposals;
- a Project Advisory Group will vet proposals and evaluate projects for funding;
- approved projects will be tendered through the Central Tender Board; and
- the Provincial Secretary and Secretary of Finance will be sole signatories for authorizing the release of IDG funds – these will not be disbursed as cash.

Also on March 13, the O'Neill Government deposited K120 million in IDG funds being payment for 2011. Payments were made into PDL trust accounts in proportions agreed as part of the UBSA. The Prime Minister committed that 2012 payments would be made later in the year. The breakdown of 2011 payments was as follows: PDL1 - K20m; PDL2 Kutubu - K10m; PDL 3 & 4 (Southern Highlands) – K8.2m; PDL 5 Central Moran - K6m; PDL 6 Northwest Moran - K12m; PDL7 South Hides - K15m; PDL8 Angore - K12m; and PDL 9 – K11m.

While announcing this process is a substantial step in the right direction, very significant challenges remain. In the Hela area in particular, but also in Gulf Province, the LLGs have limited capacity. Ward Development Committees which, under the Local Level Administration Act (1997), are responsible for provision of services, development programs and infrastructure, are not operating in Southern Highlands Province (including Hela) and are not functioning effectively in Gulf Province. If LLGs are to be effective in assessing local services and infrastructure needs, identifying priorities and preparing budgeted project proposals (with appropriate operations and maintenance provision), they will need significant training and capacity development. If this cannot be provided by the PNG Government, technical assistance should be sought through a bilateral or multilateral donor (e.g. AusAid, USAid, ADB or World Bank). Without LLG capacity building, there is the prospect that the IDG funds will have limited lasting benefit.

As noted in the last IESC report, there is a legacy of frustration and disillusionment amongst landowners stemming from the opaque and seemingly arbitrary manner in which the earlier business development grant funds (also part of the Benefit Sharing Agreement commitments) were distributed. There is also growing resentment that the PNG LNG project is now half finished and that there is still no tangible evidence of the improvements in education, health care or roads that were promised as part of the Local Benefit Sharing Agreements. In the Southern Highlands area, these thwarted expectations are contributing to a potentially volatile situation. It is essential that the PNG Government run an intensive, grass roots information campaign to inform landowners about how the IDG will operate and how projects to be funded through the IDG will be identified. Implementation of some small early IDG demonstration projects may help educate landowners about how the system will operate and to demonstrate that positive outcomes will be forthcoming.

5.13.3 Recommendation

1. To the extent possible, through EHL's engagement with the PNG Government, seek to promote the following:

- PNG Government implementation of an intensive, grass roots information campaign to inform landowners about how the IDG will operate and how projects to be funded through the IDG will be identified.
- PNG Government consideration of bilateral or multilateral donor technical assistance to strengthen LLG institutions in the affected PDLs, and to build their capacity for strategic planning, budgeting, assessing local services and infrastructure needs, identifying priorities and preparing project proposals (with appropriate operations and maintenance provision).
- PNG Government implementation of some small early IDG demonstration projects to help educate landowners about how the system will operate and provide reassurance that positive outcome will be forthcoming.

6 LABOR AND HUMAN RESOURCES

6.1 INTRODUCTION

6.1.1 Scope of Labor Review for this Site Visit

The IESC March mission represented a third dedicated review of labor and industrial relations issues since the first visit in July – August 2011. 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.

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 2, 3, 4, 5A and 5B as well as with the OCN committee and Community Issues Committee at EPC5B;
- presentations by several 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;
- discussion on the PNG Decent Work Country Program with the PNG Employers Federation, and
- talks with Project medical staff on worker health issues.

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 consulted with workers in groups only. Group interviews were carried out according to an established methodology; clearly outlining the mandate of the interviewer, ensuring absence of management, guaranteeing anonymity and confidentiality of interviewees while at the same time discerning systemic labor issues and underlying patterns from symptoms and incidents. Group interviews captured views of both men and women. The focus during this third mission by the IESC labor specialist was to follow up on issues with regard to specific risk groups, such as women workers, locally hired workers and OCNs and more specifically on OCN hiring practices by Contractors. Worker consultations were carried out in a random fashion and were not necessarily fully representative of the workforce. With best professional judgment, however, some new issues were identified.

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. All Contractor Implementation Plans were finalized between October 2009 (C1) and July 2011 (EPC2), except for Drilling. As drilling was the last contractor to mobilize, they only received training on social management plans in October 2011 and consequently have only recently finalized compiled a final version of its CIP.

As compared to the situation during the November visit, the IESC observes that EHL is gradually moving towards a more 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 has already developed a Project-wide IR strategy that has been reviewed twice now by EM experts, once in Q4 2011 by an EM Global Labor Advisor and once in Q1 2012 by a human resource/industrial relations specialist from the ExxonMobil Production Company. The latter confirmed the strategy as a robust framework for measuring IR performance of contractors, but also observed that OCN and human rights issues are reflected worded in high-level principles rather than in practical steps and that no clear distinction is made between mandatory requirements and best practice. EHL intends to have this specialist make regular visits to the Project during the remainder of construction phase.

The IR strategy has been rolled out in the field via EHL's Contractor Interface and Compliance team, allowing EPCs to adopt the strategy as appropriate given local circumstances and contract conditions. EHL continues its focus on IR strategy implementation through regular updates and other initiatives.

After its November visit the IESC reported that the Project had carried out a gap analysis of the IR strategy against existing practice and summarized the preliminary conclusions of the IR gap analysis as follows: EPC3 and EPC4 will be employing the largest workforce and will therefore run the highest IR risk; EPC3 had all IR enablers implemented and their lessons learned were being shared across Project; EPC4 had an action plan ready for implementation and EPC5B needed to take immediate steps to address its IR gaps. Also, Operations would implement the IR strategy in the first half of 2012 and the IR monitoring tool would be used on a regular basis to assess progress on the enablers. EHL did not provide any information on the follow up of these findings during the March visit, other than informing the IESC on a trend analysis concerning employment related work stoppages in order to identify potential indicators of effectiveness.

EHL provided the IESC with results of the questionnaire that had been sent to Contractors on issues such as the retention of travel documents, agency fees, grievance processes and management-worker engagements, which were mostly positive. On the other hand, the IESC was not updated on the ILO core labor standards training that was developed for all contractors and had already been delivered at the LNG plant site, or on the CIC research on how to incorporate ILO core labor standards into EHL procurement and contracting processes.

The IESC appreciates the changes in staffing that took place in the CIC team between November 2011 and March 2012, but expects to be updated on the above during its next visits.

In terms of achievements, EHL convened an internal, multi-stakeholder demobilization workshop in February and expects to have a project-wide demobilization strategy ready by the end of April 2012. The IESC welcomes the clear stance EHL is taking on the vital relationship between L&CA work and containing security issues. Effective and adequate L&CA work is now seen as key to reducing Project security risks outside the fence and to reducing spillover of conflict inside the fence. From a labor perspective this means enhanced harmony and stability on the work floor, a change for PNG/OCN/expat

workers to focus on team building and transforming the work floor into a 'wantok'-type culture that generates loyalty as well.

6.2.2.2 Employment through Lancos and PNG Workforce Development

EHL provided the IESC with the latest update on (de)mobilization and training statistics concerning the PNG work force employed and demobilized through Lancos – although it should be noted that EPC5A does not demob through Lancos, as they hire PNG workers directly and figures provided below include EPC5A workforce numbers. As described in greater detail in Section 5.9.2.2, approximately 8,500 PNG nationals are currently employed on the Project where the total workforce now exceeds 16,200. This is fewer than Q4 2011 and this downward trend is expected to continue in 2012.

LABA had a slight decrease and currently employs 1,400 Project workers (compared to 1,650 in November 2011) with a projected peak still at 2,400. This number excludes employees in Joint Ventures, which now total 258. No EHL funded expatriates remain supporting LABA, as compared to one expat in November. HGDC employs 2,400 project workers compared to 2,200 previously, with a projected peak at 3,000. Joint Venture staff still stands at 410. Five expatriate staff remain embedded in the organization, compared with nine at the time of the last visit, which is fairly typical for PNG companies and probably even on the low side. HGDC has completed Director Shareholder awareness training.

The four major Pipeline Lancos representing 54 sub-Lancos have different arrangements with the EPC Contractors, due to the linear and fast moving nature of their activities. Lancos do recruit the work force, but EPC5A employs these workers directly and pays each Lanco a fee per recruited worker. The pipeline Lancos are in different stages of development. In Blocks 1 and 2 Kerkoi and GFE are finishing up their contracts, but are planning for future non-Project work and GFE is participating in the Gobe Spur Line. In Block 3 EPC5A is mobilizing and moving its camps into the Highlands, as pipeline work has reached the lower Kutubu area. The local Lanco, KRS, recognizes the challenges as it moves into Huli territory, particularly as it lacks Huli governance, and is working closely with EPC5A to manage these issues. In Block 4 early works have started and the Block 4 Lanco, HGCD has entered into negotiations with Spiecapag on contracts concerning service supply including security. All other agreements between EPC5A and HGDC were signed over a year ago, but HGDC did relate to IESC the difficulties in dealing with the different conditions for supplying labor to EPC5A.

EPC5A's employment has gone up from 1,400 to 1,692 PNG workers, representing 77% of the total workforce (down from 78%) and includes 135 women workers (up from 89). The EPC5A workforce profile now looks as follows: skilled down from 33% to 31%, semiskilled down from 23% to 21%, and unskilled up from 44% to 48%. Other PNG workers are employed either by EPC2 or as Lanco staff and now total 571 (up from 367).

In terms of workforce development EHL and its contractors have delivered more than 3,000 courses resulting in more than one million hours of training, with over 164,000 training hours in Q1 2012. The Port Moresby Construction Training Facility (POMCTF) alone has delivered more 400,000 training hours and was recognized by the Australia Quality Training Framework (AQTF). Training modules focus 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 more than 1,600 PNG nationals graduated, of which 30% are female. POM CTF will close down, with a last graduation expected at 30 March 2012. Henceforth, Plant site contractors will train workers on-the-job. The Highlands-based Juni Training Center had just delivered its first group of graduates and has a second group in training.

6.2.2.3 Lanco Development and Performance

The Project's Business Development team offers support to Lancos that consists of pre-contract preparations, contract negotiations and post-contract provision of services. Noteworthy, is the fact that all Lancos are moving towards full nationalization of their staff, have their outstanding financial obligations on track and are professionalizing their management systems. With the support of Project BD staff, the two main Lancos continue to improve their HRM system and administration, participate in the BD Director Mentor program, and develop monitoring tools, such as a business scorecard accompanied with KPIs.

Moreover, in February the main Lancos, LABA and HGDC, along with some EHL and EPC Contractor staff and representatives of DLIR received HRM/IR training at the IBBM Enterprise Center. The training offered topics such as: international labor standards; worker engagement and relations; HR Policies;

contracts of employment; remuneration; occupational safety and health; diversity in the workplace and workplace discrimination; employment tribunals, and; demobilization. LABA itself has sent three more staff (payroll, contracts and IR) to the PNG HR Institute for a 2-week course.

LABA's priorities for the next few months is to still deploy as many people as possible, given the fact that the peak of activities at the LNG Plant site is in sight, to manage the upcoming demobilization and carry out a business analysis to determine the impact of demobilization on LABA itself and to evaluate LABA's Joint Ventures. HGDC will continue its efforts to progressively move payroll systems towards electronic processing of timesheets. HGDC expressed concern on the entry of EPC5A into the Hides area. They are aware of the deviating recruitment and employment practices of EPC5A¹² and fear the impact those may have on their own operations when they become an EPC5A supplier. HGDC does not fully grasp EPC5A systems yet and indicated that they would really like to start talks.

Lancos also continue to face challenges. Besides dealing with demobilization and identifying non-Project work opportunities, Lancos are still faced with lack of commercial awareness and business discipline, protection of payroll (Hides), knowledge transfer to Joint Venture partners and limitations in the ICT environment.

The main Lancos have reached agreements with banks to open on-site branches, to facilitate payments through the banking system, to offer safe access to wages and to saving opportunities. LABA entered into an agreement with Bank South Pacific (BSP) and HGDC is in the process of concluding an agreement with Australia and New Zealand Banking Group (ANZ).

6.2.2.4 Contractor Performance

During 2011 when labor issues were first reviewed by the IESC, a general lack of awareness at the Contractor and subcontractor level was found for Project labor requirements, except for worker health and safety, which scores very high across the entire Project. Most prominent were (i) the lack of organized worker-management dialogue that offers workers avenues for getting their concerns and needs addressed in a collective manner, rather than individually, as with the worker grievance mechanisms or publically, as during toolbox meetings and (ii) an overall lack of appropriate due diligence with regard to hiring practices for OCNs. Significant progress has taken place, but there is still room for improvement.

In terms of worker – management dialogue, the Project should be able to provide its workers with collective and institutionalized avenues to discuss their needs and concerns as well as a forum for understanding the needs and concerns of management. Worker grievance mechanisms and toolbox meetings are not effective alternatives. Also, in PNG there is no real alternative for workers to organize given the lack of trade union presence in the PNG gas and oil sector. The situation is the more pressing given the complex reality of employing a workforce that now exceeds 16,200, of which some 8,500 are PNG nationals, who bring very distinct norms and values to the work floor and the remainder of the work force consisting of a diverse, international workforce.

The context in which the Project operates includes incidents due to either community or workplace issues, as well as factors such as EPC Contractors nearing construction deadlines. The upcoming elections will only further enhance tensions. The overall situation emphasizes the importance of directing efforts to develop and maintain harmonious workforce relations.

In summary, the IESC is still of the opinion that the Project can do more in terms of facilitating a roll out of workers' councils across the Project, particularly with respect to PNG nationals and OCNs. IESC recommends the Project stimulate and continue its efforts to facilitate the development of such councils and not solely rely on avenues such as grievance mechanisms or toolbox meetings.

During this field visit IESC found that at EPC5B an alternative body has been put in place, the Community Issues Committee, which also deals with collective workers concerns and appears more culturally appropriate. The fortnightly meetings with OCNs continue at EPC5B and have contributed to better

¹² Deviating from the other Project EPC contractors in the sense that EPC5A recruits its PNG workforce directly and only pay the Lanco a fee per recruited worker. Also, due to its transient nature of activities the EPC5A contractor offers different training and promotion opportunities and do not provide for workers councils.

workplace relations. Unfortunately, at EPC3 workplace relations have somewhat deteriorated and the performance and effectiveness of the workers' council has decreased.

In terms of recruitment of OCNs, EHL should be able to demonstrate that its Contractors and their subcontractors can sufficiently guarantee the quality and reputation of the recruitment agencies in the countries of origin. This implies that EHL's Contractors cannot solely rely on a formal legitimacy check of these agencies, as even legitimate agencies can engage in illegitimate acts. At EPC5B a group interview with OCNs revealed a possible issue of concern in this respect. EHL's Contractors should base their engagement with recruitment agencies equally on an informal 'civil society reputation check' in the country of origin through, for example NGOs, trade unions or worker's rights experts to verify whether there are any suggestions or indications of improper activities by these agencies.

EHL annually signs a waiver that the company is compliant with the host country's legislation. Exemptions from the labor legislation have been in place for EHL since March this year. These exemptions concern two minor issues, namely women being able to work outside the 6am to 6pm restriction and on shifts and R&R for office staff. The official request was sent out last October, but talks with DLIR started as early as August 2011.

As IESC suspects that some EPC Contractors might not comply with PNG labor legislation in terms of working hours and R&R, EHL was asked for relevant exemptions. During the March visit EHL was not in a position to advise on the exemption requirements and status of its Contractors. EHL will now approach all its Contractors – including the umbrella Lancos, to verify whether or not they have a need for exemptions from PNG labor legislation and, if so, whether they have these in place and what mitigation measures have been agreed with DLIR.

6.2.2.5 Recruitment Policies and Procedures

During the visit the IESC once again looked at OCN recruitment practices and noted that Contractors were still unable to provide details on hiring policies and practices of those agencies responsible for indirect hires. As said in the previous report, Contractors and sub-Contractors do have highly diverse recruitment strategies. Some work with agencies on an ad hoc basis, some with fixed agencies and some even have their own recruitment agencies in the countries of origin. In some cases the agencies are fully responsible for the recruitment process and HRM of workers, but the main trend visible in the Project is to employ OCNs directly and to only pay the recruitment agency a fee per worker.

EHL did inform the IESC during its March visit that it had send out a questionnaire on OCN recruitment practices to its main Contractors. This questionnaire touched on topics such as: worker document retention policy; individual work contracts; recruitment fees; grievance management process, and; management-worker interface mechanisms. EHL designed this questionnaire on the basis of the Oil and Gas Industry Guidance on Voluntary Sustainability Reporting (2nd edition 2010) by IPIECA/API/OGP. 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.

However, during the same visit the IESC organized another group interview with OCNs, this time at Komo Airstrip (EPC5B). IESC met with a large group of Indians, Philipinos and Nepali workers, all on MCJV's pay list and all participants to the fortnightly OCN meetings at EPC5B. IESC also had talks with OCNs working for MCJV's subcontractors.

Of the first group, the Indians explained how they were recruited to the PNG LNG Project through a well-known labor supply agency in Mumbai. They related that this agency routinely demands under the table payment of US\$1,500 per worker, in excess to the formal recruitment fee paid by MCJV. Obviously, workers have no choice than to pay otherwise they do not get the job and are not provided with a receipt of such payments. Going through another agency is not an option as either, as MCJV recruits Indians only through this agency. The Philipinos in this group were hired through another agency, which is monitored by the Philippines Overseas Agency (POA) a governmental agency regulating migrant labor. POA has set a standard of minimum US\$1,250 monthly salary and a maximum fee paid by workers to agencies of no more than one-month salary. The Philipinos said that at least these arrangements give them some social benefits and social security in their home country.

MCJV was unaware of the practice of recruitment in India and selects its recruitment agencies according to their legitimacy as stipulated in the procurement contracts with the Project. The IESC recommends for EHL to request its contractors to review recruitment practices of their suppliers of OCN workers; not so

much formally on the basis of the legitimacy of these agencies, but informally on the basis of a 'civil society reputation check' through for example NGOs, trade unions or worker's rights experts to verify whether there are any suggestions or indications of improper activities by these agencies.

In the last two reports the IESC recommended for EHL to follow international best practice and consider a commitment to the intent of the UN International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families. Even though PNG is not a signatory to the Convention, the Project employs sizeable contingencies of workers from countries that are signatory to it, e.g. Colombia, Egypt, Indonesia, Philippines. Governments of States that have ratified the UN Migrant Workers Convention undertake to ensure that migrant workers whose rights have been violated may seek an effective remedy. It would then be at EHL's discretion to verify that no such rights are violated across the Project and avoid possible future workers action. In March EHL informed the IESC that given current complexities and priorities in the Project it would not act on this recommendation.

6.2.2.6 Worker-Management Relationship

Due to the short-term involvement the offshore pipeline contractor EPC2, the IESC could only meet with them during this March visit. EPC2 and its sub-contractors have small work force contingencies and only hire their staff directly and not through agencies. EPC2 has had no work stoppages, other than one 2-hour incident because of pay delays and has no workers council. It does have a workers grievance mechanism, but no women's version as no women are employed. The IESC considers this contractor as peripheral in terms of labor and IR issues, both due to the short duration that the contractor is engaged with the Project as well as its generally acknowledged excellent working conditions.

At the LNG Plant site the EPC3 workers' council has come out of its pilot phase with elections held in February, forming a new council that is a mix of old and new members. This council has convened only once at the end of February and for a second time during the group interview with the IESC labor specialist. The workers' council is re-elected every three months, which IESC considers counterproductive to achieving its objectives. CJJV does offer members of the workers council an information package on workers' rights, labor standards etc., but no capacity building such as for example the 'safety champions' training program. The meeting is typically with CJJV HR staff, but when necessary, HR staff representatives from subcontractors are invited to the meeting to address concerns.

The IESC observed the atmosphere being very different from the last talk with the EPC3 workers' council in November, 2011. Council members consider this platform as a one-way street for handing down management decisions, even though they co-determine the agenda. Upon trying to discuss these decisions they are referred to the grievance mechanism. They are embarrassed to go back to their fellow workers, because they feel like they are merely passing on management decisions instead of acting as worker representatives. They also feel they do not get/have any time and space to caucus amongst themselves, without CJJV present.

They brought up issues such as absenteeism; they say they need to skip work because working hours and days at plant site are too long and only leave them with Sundays off. This prevents them from accessing certain facilities and services that are only available during the week. With transport to and from the four nearby villages or POM, PNG workers may end up being away from home 12 to 15 hours, 6 days a week. They claim they tried many times to discuss more flexibility in working hours and days, but that these requests have been denied.

CJJV considers absenteeism one of its biggest workplace issues and does not see why workers complain about their wages as they could increase their income simply by reducing absenteeism. It is estimated that, due to work stoppages, lost income for the four villages combined is 4 million Kina. Absenteeism at the Plant site has the highest rate of the whole Project, but at least has reduced from 35% to currently 12%. Men perform worse than women, with absenteeism among men having levelled at 12.6% versus 9.9% among women.

Workers also do not understand the ban on cell phones. They regard it as understandable just after the August 2011 strike, but now perceived as an infringement on their right to communication. No one expects cell phone usage on the job, but all do expect to be able to access their phones on the work floor during breaks to coordinate with their homes or in case of emergencies, especially given their long working hours. CJJV is sympathetic to their plight and had already sent out a message to its subcontractor to lift the ban, but during the IESC's visit workers started using cell phones for the purposes of intimidating fellow

workers into work stoppages. The IESC labor specialist had planned a follow up visit to Plant site at the end of the trip, but this was not possible due to a work stoppage by workers employed by Daewoo.

PNG workers at Daewoo have stopped work due to grievances about Daewoo's management style which is perceived as authoritarian, top-down and harsh. When PNG workers complained once again about the lack of an appraisal system at Daewoo, its alleged response was that appraisals do take place monthly, but inside manager's heads and are not communicated to workers. CJJV has had several talks with Daewoo about their management style and underlying cultural differences, but to date has not led to any improvements in workplace relations.

DLIR did organize a workshop on workers' rights for the workers council in February. CJJV used these materials to do a similar training at POM CTF. DLIR is also planning to deliver a tax and pension workshop for the workers council.

IESC recommended in its July/August and November 2011 reports that CJJV should also consider establishing an OCN workers' council. During the March 2012 mission CJJV formally responded that for various reasons (cultural and linguistic diversity, short term contracts etc.) they decline to follow this recommendation.

The IESC recommends EHL closely monitor these developments at the Plant site and more specifically for EPC3 to:

- reduce the three-monthly election of the workers council to no more than twice a year, as it renders the council ineffective and unproductive;
- formalize time and space for caucusing according to international standards, i.e. caucusing takes place during working hours and outside breaks;
- offer worker council members personal skills training, to foster mature dialoguing, besides handing out information packages; and
- identify and instantly dismiss those workers that use cell phones (or otherwise) to intimidate fellow workers, rather than deprive all others (90%) of their means of communication.

The document outlining EPC3's Women's Grievance Mechanism Procedure states that this "special procedure refers to issues that have arisen solely because the aggrieved is female, and is not concerned with contractual, safety, work or remuneration matters on which the gender of the aggrieved has no particular bearing". However, CJJV clarified to IESC that if women do not feel heard by their male superiors concerning workplace related issues (other than harassment and the like) or by LABA that they are free to turn to the women's confidante anyway.

EPC4 and C1 in the Hides area are still intending to trial the Safety Champions meetings that include PNG/OCN/expat workers, before embarking on a workers' council. EPC4 reported that no workplace related incidents have occurred since their firm, yet fair handling of the September 2011 incident, which has led to improved and constructive workplace relations. Most current problems (absenteeism, work stoppages etc.) are due to non-Project issues (landslide, government not delivering on commitments). Communities use Project presence in the area as leverage for putting pressure on the PNG Government and to pressure PNG workers to stop work. During its March visit IESC was flown onto the construction site as land access to the site was blocked.

Despite these 'outside-the-fence problems', workplace relations have improved. EPC4 has analysed key factors that played a role in reaching this state of constructive work floor relations:

- handling of the September 2011 incident was firm and decisive, yet transparent and fair, which led to respect and re-stored trust;
- EPC4 never introduced a ban on cell phones, not even temporarily;
- all supervisors (PNGs, OCNs, expats) were re-trained on their roles and responsibilities. Previously they would refer every complaint to HGDC. Retraining has led to substantial improvements in supervisor performance and work place relations;
- identify and instantly dismiss those workers that use cell phones (or otherwise) to intimidate fellow workers, rather than deprive all others (90%) of their means of communication;
- every team has an Anglophone PNG worker as go-between for PNG workers and foreign workers;

- induction for new recruits is one to one-and-a-half day and includes training on Code of Conduct and cultural awareness;
- the cultural awareness component was improved, not only are foreign workers trained on local culture, but reverse cultural awareness training is given to PNG workers to understand expats and OCNs. Consequently the cultural divide has almost disappeared and multi-cultural teams are now really working as teams;
- all workers signed code of conduct, with an emphasis on the 'EPC4 clan allegiance';
- grievance and disciplinary procedures were re-emphasized; and
- several OCNs had asked to be repatriated after the September event, as they were seriously concerned for their personal safety after having been intimidated by the instigators to also stop work. OCNs now feel safe enough to stay on. The improved cultural awareness training has made them more assertive.

With respect to the EPC4 grievance mechanism, queries are separated from real grievances, which are logged and followed up. No administrative differentiation is made between grievances of national or foreign workers, so EPC4 reports on all grievances, not only those of the national work force.

EPC4 is in the process of recruiting a women's confidante. In March interviews had been held and a candidate identified. She has over 20 years of experience at POM general hospital at the gynecological ward and in women's counseling. She is originally from the Hides area and a native Huli speaker. She will be directly hired by CBIC, who will then introduce her to Alliance, CBIC's subcontractor employing all local women. Her role will be more than taking grievances; she is expected to proactively reach out to women employed under EPC4 and will deliver education and build capacity among women workers through meetings and workshops (See section 6.3 on Gender).

EPC5A upon entering the Hides area will be offering different terms and conditions of employment than the current Hides-based Contractors, C1, EPC4 and EPC5B. EPC5A will differ in terms of recruitment, training possibilities, contract arrangements with the Lancos and closed camp requirements for PNG nationals and is still sorting out these issues with HGDC. As observed in IESC's previous report, these arrangements need to be worked out soon, well and in a transparent manner, not to further aggravate the already volatile situation at Hides.

EPC5A still does not have a workers' council or any alternative mechanism in place, nor any plans in that direction in spite of recent incidents along the pipeline. The EPC5A L&CA efforts to set up groups similar to EPC5B's CIC – community issues committee, which deals with inside and outside the fence issues at Gobe and Homa Puau have failed, mainly due to excessive demands and expectations of local leaders.

EPC5A has an official workers' grievance mechanism on paper, which has an informal part (verbal) and formal part (written complaints), but all grievances first go through the supervisor and then the CLO – community liaison officer. This procedure appears not to have been developed with OCNs in mind. The mechanism is communicated to workers in English and local languages during the three-hour induction session at the start of their employment. Spiecapag's L&CA Community Affairs Manager has a final say in grievances coming from PNG nationals. These are logged, collated and reported to EHL in the monthly contractor monitoring reports. Spiecapag related that OCNs all have their own tailored routes for lodging complaints per nationality. OCNs tend to flag to those Spiecapag staff from their own country of origin (or close by). With regard to OCN grievances it is either Spiecapag's Construction Manager or Project Manager that has a last say. It remained unclear to IESC whether OCNs grievances are logged and included in the monthly contractor monitoring reports.

Also, EPC5A has been the one contractor lagging behind in developing a women's grievance mechanism, but now intends to accelerate its development. This is partly due to the following situation. EHL had issued Spiecapag a non-conformance for food quality (Alliance, who only had a contract for the Gobe Camp, was not delivering and camp morale had reached a low point. This situation put Spiecapag's performance at risk). Spiecapag took action because of worker feedback by removing Alliance and taking over catering themselves by employing some of the former Alliance staff - mostly women - in addition to new staff. Spiecapag therefore decided to accelerate the development of a women's grievance mechanism. One of the female CLOs will be appointed by Spiecapag as the women's confidante. All should be in place by May 2012 and the existence of the women's grievance mechanism will be communicated via toolbox

meetings. The IESC had suggested capacity and skill building for this person, especially considering pipeline entrance into the Hides area. The EPC5A L&CA will consider this suggestion.

EPC5B is successfully continuing its fortnightly meetings with OCNs and facilitates these with interpreters (Tagalog, Urdu, and Hindi). These meetings are highly valued by OCNs and have considerably contributed to their sense of security, which was lacking after the series of security and work place incidents in 2011.

An OCN council meets every Wednesday. Issues that can be addressed immediately are fixed as soon as possible, whereas others are taken up to management and resolved. For example, problems with getting salaries paid into bank accounts in countries of origin are addressed and resolved by HR. During the fortnightly meeting a worker with payment problems can now request a release from his shift, so that he can actually go and see HR during office hours to resolve the issue. The intent is that OCNs can focus on their work knowing that their concerns will be addressed through an official and regular platform – the mantra being: “don’t get upset at work”. This platform has improved relations with the PNG national and local hires as well.

Message from the work floor at Komo Airstrip

IESC talks with many people in the field. When asked for recent, prime achievements on the work floor one of the MCJV field supervisors stated that team building among the different nationalities had dramatically improved, creating a new allegiance to the work place ‘wantok’. He also considered on-the-job training of a considerable part of locally hired spotters in order to obtain operator skills as a major achievement. He pointed out that spotter jobs are highly sought after, even though it pays less than a carpenter’s job. Spotters are there, on the ground with the operators and quite a few of them end up as trainee, junior and mature operators.

EPC5B now has two more successful committees in place. One committee is the *Camp Facilities Management Committee – CFMC* with members representing EHL, MCJV Lancos and iPi, including an iPi male and female worker’s representative (see section 6.4 on camp management). The other one is the *Community Issues Committee - CIC*.

The CIC had already been in existence for the past 2.5 years, but had been at times inactive. EPC5B (MCJV CA) decided to revive the committee after the security incidents in its pioneer camp and to develop a management group to control future community development projects. From September to November 2011 the MCJV CA for EPC5B worked on a turn-around strategy. Firstly, CIC had to be re-defined, re-formed, and strengthened, so the following steps were taken:

- defining membership criteria through a Terms of Reference, prescribing roles and responsibilities and requirements such as no alcohol & drugs, no criminal records;
- defining a membership Protocol e.g. no show for three times leads to loss of membership;
- Providing Personal Viability Training (PVT) to members, this training is applied as a strategic element of CDS programs, not in isolation;
- fortnightly pay for lost income opportunities - instead of an attendance fee for CIC meetings like in the past and rations - to compensate for lost production; and
- transport (in process of procuring a vehicle and driver with control checks to prevent abuse) and lunch when on site.

As a second pillar to the turnaround strategy EPC5B commenced a ‘community relations revival plan’ addressing issues such as:

- employment;
- training;
- local business opportunities;
- provision of water; and
- compensation.

CIC consist of 28 members, all of whom have a certain standing in the local community, but who are not necessarily community leaders. The 11 clans that hold claims over the Komo airstrip land nominate these members. CIC guides and supports EPC5B on workplace conflicts that originate from outside the fence

and on clan distribution and balance among the work force. It functions like an integrated worker-community council, which facilitates addressing complex, intertwined worker-community issues in a culturally appropriate manner. Formal CIC meetings are held at the community Round House outside the fence, sensitive meetings are held on site to avoid eavesdropping. When necessary, Project management is brought to the meeting, like the EHL Project Manager or the MCJV Construction Manager. PNG local hires now have two avenues for lodging grievances; through the formal grievance procedure and through the CIC. Women also turn to the CIC and it played a vital role when the iPi woman worker was harassed by an OCN (see IESC November 2011 report - Doc. No. 10-874-H4).

Different forms of workers collectives, as well as worker grievance mechanisms and women's grievance mechanisms are now in place across the Project, although they vary greatly in quality and effectiveness. EPC4 and EPC5B currently represent the best labor practice: strategic work place interventions after the September 2011 incident; role and position of women's confidante at EPC4; and establishment of a Community Issues Committee, Camp Facilities Management Committee, OCN council, and traffic-light demobilization system – see below under demobilization – at EPC5B).

6.2.2.7 Conditions of Work

The IESC noted in November 2011 that at EPC5A working hours and R&R for OCNs are less favorable when compared to the other contractors. In terms of overtime, OCNs at EPC5A remain at a disadvantage due to unpaid, extensive commutes between camps and work locations along the pipeline against a fixed day rate. Also, working hours for OCNs at EPC5A with a 7-day workweek and a 20/2-rotation-schedule are exceptional. Therefore, during this field visit, the IESC looked into 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 is not certain that all contractors are compliant with PNG labor law. EHL received labor law exemptions for two minor issues in place since March 2012, but EHL has not carried out an update on the exemption status of its contractors. It is expected that by the time of the next field visit EHL will have conducted a thorough review of Project compliance with PNG labor legislation on working hours, including breaks, days of rest, rotation schedules, etc. and if exemptions have been obtained for any variances along with mitigations and whether there has been stakeholder consultation.

At EPC5A IESC was only in a position to talk with the EHL CIC lead and the Contractor Community Affairs Manager, the latter only being able to provide information on PNG workers and not on OCNs. IESC would appreciate if for the next visit meetings could be arranged with EPC5A Project Manager and Construction Manager. From the point of view of EPC5A there are no issues with working hours, over time etc., as OCN contracts are 'day contracts' and do not specify working hours. Therefore, even though OCNs understand their working hours to be specified at 10 hrs/day (of which 2 hrs already count as overtime according to PNG law), in reality they can be asked to work around the clock as their contracts do not specify working hours. Again, there is no overtime and their long commutes along the pipeline (sometimes up to one-and-a-half to two hours) can extend their workday outside the 10-hours. Excessive working hours are partially compensated with all the days that the work is stopped due to weather conditions; EPC5A has a closed camp policy, so workers stay on stand-by in the camps.

Finally, EPC5A's position is that there are not any issues with working hours, overtime, R&R etc., as EPC5A has its exemptions from the PNG labor legislation in place. IESC has requested a copy of an OCN employment contract to verify the 'day contract' issue. In POM EHL is unaware of the exemption status of any of its contractors and had only recently received its own exemptions in place.

At EPC4 working hours are:

- workweek 65 hrs, 10 hrs per day for 6.5 days, the 9th and 10th hr as well as Saturday and Sunday are paid at overtime rates (Saturday x1.5 and Sunday x2);
- the two half days off have been combined to one day off every two weeks at the request of workers. EPC4 aligned this day off with the fortnightly pay roll of local hires. So every second weekend the schedule looks as follows: Friday - payday, Saturday - rations hand out, Sunday - fortnightly day off;
- working hours are stipulated to EPC4 by EHL and overtime requires approval by the EHL site manager; and
- R&R for OCNs is 12/2; for OCN in staff function 8/2; for expats in staff function 6/2.

At EPC5B working hours are:

- workweek 65 hrs, 10 hrs per day for 6.5 days, the 9th and 10th hr as well as Saturday and Sunday are paid as overtime (Saturday x 1.5 and Sunday x2);
- the two half days off have not been combined;
- R&R for national hires is 6/2. Local hires can opt to work on an R&R schedule like the national hires. Bus transports local hires and maximum commute is half-an-hour; and
- R&R for OCNs is 12/2 with 4 days travel paid outside the 2 weeks, so 19 days in all. Leave is paid and is build up on a 1-in-5 basis.

Obviously, OCNs at EPC5A, compared to those working for the other Contractors, remain at a disadvantage with extensive commutes between camps and work locations along the pipeline, a 7-day workweek with no cap on hours worked per day and a 20/2-rotation-schedule.

At EPC4 there seems to be a discrimination issue concerning the R&R schedules of expats (6/2) and OCNs (8/2) that hold equal (i.e. staff) functions.

Another issue, unrelated to working conditions is that Nasfund has brought the probation period back from three months to zero, so all workers are now paying superannuation from day one. At least this will prevent further confusion and discontent about the slight decrease in pay after three months as was previously common. Also, Nasfund finally issued Nasfund ID cards to workers at Plant site, entitling them to benefits such as reduction at certain supermarkets, lifesaving and housing allowance schemes, etc. A BSP (Bank of South Pacific) branch has been opened at plant site at the LABA office, to facilitate workers access to banking facilities.

6.2.2.8 Demobilization

IESC has been urging the Project to develop a Project wide demobilization strategy during past visits and welcomes EHL's efforts in preparing such a strategy, due the end of April 2012. Accordingly, contractor demobilization strategies were a focus of this field visit.

At the LNG Plant site CJJV's subcontractors, Daewoo and CCC are still mobilizing new workers, with an expected peak before September this year, from then on until April 2013 demobilization will gradually take place. Daewoo and CCC did re-employ 350 PNG workers from another subcontractor, Red Sea Housing. Workers say they were re-hired at same the same minimum rate of K3.25 even though they have one year or more of work experience, although CJJV reported workers being re-hired by Daewoo at a 5K rate for K3.25 rated job positions, because that is what they earned in their previous position.

Currently there are more than 2,600 PNG workers on site. 1,667 have been trained at POM CTF, which is now closing its doors (last graduation 30 March 2012). Henceforth, CJJV and sub-contractors will be providing on-the-job training with the last batch of several hundreds of workers. POM CTF facilities will remain available, but training cost will have to be absorbed by Contractors, as well as transport cost of getting workers out there.

CJJV is developing its own demobilization strategy that focuses on:

- Personal Viability Training - to empower people in the impacted villages and get their frame of mind out of a dependency mode and into one of assuming responsibility for the post-construction phase;
- Benefit Sharing Agreement - CJJV is emphasizing that the impact of demobilization will be cushioned by the royalty payments during production;
- Socio-economic developments – CJJV reached an agreement with RH Trading, a supermarket chain in POM area, to start procuring fresh foods from the four impacted villages and various men from these villages will be trained in offshore fishing (behind the reefs); and
- Communication on demobilization activities is carried out through the workers council and CJJV's sub-contractors; CJJV has HR meetings with all its sub-contractors every Friday.

At EPC5A, demobilization had gone very well and peaceful until recently. Spiecapag project management was physically assaulted by a group of about 25 workers that were being demobilized at Gobe camp. Analysis of the incident brought a root cause to the surface that once more underlines the need for a consistent, Project wide approach to demobilization. Workers had received their 2-week severance

payment, but C1 (CCJV), who had previously employed these workers in the area, had routinely paid a 'good behavior' bonus of 1 Kina for every day without work stoppages. This fact was unknown to Spiecapag. Coordination on such procedures cannot take place between contractors, as contractually stipulated with the Project, but lies in the hands of EHL.

An observation from the November field visit was that there was a possible pattern of *failures in workplace relations* resulting in *security incidents*. This was substantiated not only during the Security presentation at the end of the mission, but also by anecdotes and on the ground experience of security staff. A Level 2 non-conformance was raised at the time. Even though the examples given in the November report were received as incidental by EHL, this recent incident clearly illustrates the relevance of this observation.

The Highlands-based contractors C1, EPC4 and EPC5B are intensifying coordination on mutual demobilization and mobilization needs. EPC5B in particular has made substantial steps towards a sound demobilization strategy – Demob Plan for Nationals approved in March 2012, compared to IESC's November visit where it was still lagging behind. In the Hides area EPC4 and C1 Project Managers are now discussing (de-)mobilization activities between their operations. C1 has made a list of job classifications and planned dates for demobilization. EPC4 will try and maintain clan balance upon re-hiring local workers. CBIC will be listening in on the demobilization meetings of C1 and EPC5B, to know and understand what is being communicated to their potential future hires.

At the Komo Airstrip, EPC5B expects its demobilization peak to take place between August and October this year. MCJV and EHL have developed a 'traffic light' demobilization scheme with the aid of the Community Issues Committee. Greens are those workers who provided incorrect information regarding their place of origin; they will be the first ones to be demobilized, along with national hires and expatriates no longer required by the Project. Reds are those who hold key or strategic positions in Komo communities and will be the last to go and finally Oranges are the relatives of Komo people or from surrounding areas who are staying temporarily for employment. Locally hired equipment will also be the last to be demobilized. MCJV has already transferred four skilled workers to EPC4.

From the side of HGDC staff based at Komo there are some observations on the demobilization process. MCJV requested immediate demobilization of some 20 spotters along the road as repairs of part of this public road between Komo and the Hides will be taken over by Cisco and be lost on MCJV. HGDC felt that now that MCJV loses this job they want to demobilize immediately without considering consequences. HGDC managed to put the 20 demobilized spotters to work in the Timalia boulder pit, which had been closed down at the time of the IESC March visit, because of a fatality. So, these spotters remained employed, but were not working at the time.

HGDC says it needs at minimum a two-week notice period to prevent trouble around such demobilizations. HGDC needs to be able to make announcements to workers and align their demobilization with pay dates. Proper demobilization according to HGDC includes preparing reference letters. The experience to date has taught that such letters should be laminated (longevity), have photo ID (prevent fraud) and be in duplicate (in case of loss) and translated into local language, all of which takes time.

HGDC drafted its own demobilization strategy:

- L&CA to better prepare local hires for demobilization - savings, garden production, start their own business etc.;
- develop a 'Pay Point' strategy:
 - avoid paying workers in one place to prevent unrest; HGDC has several pay points (1 inside MCJV camp, 1 along the airfield, 1 along lay down and batching plant, one along the road for spotters); and
 - hand out payments to supervisors (except for spotters), who then sign off on receipt and distribute at a time and place that suits the work scope and schedule.

However, besides HGDC, there are also KUJV (perimeter road and security services) and KQCJV (Timalia boulder pit) that are recruiting PNG workers and will have to demobilize sooner or later. There is no coordination between the Lancos supplying to MCJV (HGDC, KUJV and KQCJV), but the EPC5B CIC lead did confirm that the MCJV 'traffic light' demobilization system applies to all local Lancos.

6.2.3 Recommendations

1. Concerning EHL and EHL monitoring of its EPC Contractors:

- a. 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;
 - c. Review Project compliance with PNG labor legislation on working hours, including breaks, days of rest, rotation schedules, etc. More concretely, verify: (i) whether contractors comply with PNG labor legislation, (ii) if not, whether they obtained relevant exemptions, (iii) which mitigation measures have been adopted, (iv) if so, whether there has been any stakeholder consultation on these measures, (v) whether working hours, R&R etc. conform to international standards and how they compare to the sector norm, and finally (vi) whether there are health and safety impacts on workers also and including impacts on psychological health; and
 - d. Share Project best practices as identified at EPC4: (i) strategic work place interventions after the September 2011 incident and (ii) role and position of women's confidante and at EPC5B (iii) Community Issues Committee, (iv) Camp Facilities Management Committee, (v) OCN Council, and (vi) traffic-light demobilization system with the other EPC Contractors.
2. Concerning Lancos and PNG workers:
- a. Continue to encourage Lancos to attend the HRM/Industrial Relations course developed by IBBM;
 - b. Discuss possible rollout of a Community Issues Committee such as at EPC5B with the other EPC Contractors; and
 - c. Monitor and address deteriorated relations at the work floor and with the Workers Council at Plant site and more specifically for EPC3:
 - reduce the three-monthly election of the workers council to no more than twice a year, as it renders the council ineffective and unproductive,
 - formalize time and space for caucusing according to international standards, i.e. caucusing takes place during working hours and outside breaks,
 - offer worker council members personal skills training, to foster mature dialoguing, besides handing out information packages,
 - identify and instantly dismiss those workers that use cell phones (or otherwise) to intimidate fellow workers, rather than deprive all others (90%) of their means of communication;
3. Concerning Other Country Nationals:
- a. Request EPC Contractors to review recruitment practices of their suppliers of OCN workers; not so much formally on the basis of the legitimacy of these agencies - as even legitimate agencies can engage in illegitimate acts, but informally on the basis of a 'civil society reputation check' in the country of origin through for example NGOs, trade unions or worker's rights experts to verify any rumors of illegitimate activities by these agencies;
 - b. Discuss possible rollout of OCN Workers Council such as at EPC5B with the other EPC Contractors;
 - c. Have Project Contractors improve on and provide ongoing information on grievance mechanisms towards OCNs, more specifically at EPC5A; and
 - d. Review the legitimacy of a differentiated R&R schedule for staff holding equal positions based on country of origin, more specifically at EPC4.
4. While awaiting EHL's Project-wide demobilization strategy:
- a. Improve on sharing information relevant to demobilization among EPC Contractors and recognize that failure to do so may also result in security incidents;

- b. Share the 'traffic-light' demobilization system as developed at EPC5B with the other EPC Contractors; and
- c. Take on board on hands-on demobilization experience of Lancos staff.

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 March 2012 field visit the IESC was not further updated on Project initiatives or developments in the field of gender, i.e. women-in-employment and women-in-impacted communities. During its next visit the IESC will require that extra effort and time be put in an update on this issue.

6.3.2.1 Women-in-Employment

During its November visit the IESC noted that suitable women's grievance mechanisms and capable confidantes needed immediate implementation across the Project. The IESC also noted that 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 (or in the case of EPC5B directly as they have taken over catering from its subcontractor), women's grievance mechanisms are predominantly needed at the camp level. The IESC recommended and still recommends for the Project to take urgent action given the fact that these women, especially up 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".

Currently, all but two EPCs have a women's grievance mechanism in place. EPC2 has no mechanism as it does not employ any women and EPC5A has none yet, but said it is currently accelerating the development of such a mechanism. C1 has a women's confidante in place but no mechanism yet; EPC3 has a mechanism in place, but no confidante yet. In November, EPC5B's subcontractor iPi had its secretary informally taking up the role of women's confidante. Her role in a sexual harassment case that occurred at Komo in the first week of November had proven vital to diffuse possible retaliation from male family members towards the Project. Her position, role and responsibilities have now been formalized.

EPC4 will soon have the most advanced mechanism in place and could well prove an example of best practice for the Project. The new women's confidante will be directly employed by CBIC and not by any sub-contractor dealing with camp catering and housekeeping, like Alliance or iPi that normally hire the majority of local women. She has more than 20 years of experience working at POM General Hospital at the gynecological ward and has professionally counseled women for years. She is originally from the Hides area and a native Huli speaker, which will substantially enhance the effectiveness of her work. Besides holding the position of women's confidante, which is a more passive role, her job description also prescribes for her to proactively reach out to women employed under EPC4. She is expected to deliver education and build capacity among women workers through meetings and workshops. During its next visit IESC will contact the EPC4 confidante, who by then will be several months into her new job, to discuss her views and experiences.

6.3.2.1 Women-in-Impacted Communities

During the visit the IESC noted that the Community Health Program was conducting a successful 'marriage and relations counseling' program at the community level. The IESC then stressed the opportunities this program could potentially offer the Project by adding a specific focus on violence against women-in-

employment in this counseling program. At the time this view was actually shared and validated by program staff, as they were fully aware of the fact that alcohol-related violence against women and children, confiscation of wages by male family members and (violent) domestic implications for women employed by the Project are widespread. At this point, however, the IESC wishes to express some concern for the continued quality of this program, given the recent turnover in program staff and apparent gaps in the handover from previous to present staff.

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. Oxfam Australia recently commissioned the LNG Impact Listening Project to gain insight into people's experiences of the Project. The LNG Impact Listening Project focuses on the four impacted communities around Plant site and was designed to especially bring out the voices of youth and women. Initial discussions with a number of civil society and community-based organizations revealed a view that women's voices had not been sufficiently heard in the PNG LNG Project negotiations and the report describes amongst others the relationship between increased cash flows, alcohol abuse and domestic violence.

A Highlands-based non-governmental organization, Family Voice that addresses social issues including family and sexual violence, is more specific and warns that unless the Government takes immediate actions to prevent the risk of increased cash flows from the nation's largest resource extraction project, which is escalating alcohol consumption and eroding family cohesion, violence against women and girls will very likely to increase. John Ericho, executive director of the Eastern Highlands Family Voice, warned that the mass migration of male workers and increased circulation of cash from the joint venture would bring social problems. The majority of cases that Family Voice receives involve domestic violence, with 80 percent of clients being women, 10 percent men and 10 percent children. The main causes of domestic violence are rivalry associated with polygamy, adultery and management of money within families, with alcohol a major contributing factor.

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 (indirectly) contributes to and aggravates the situation by its presence and how to mitigate these impacts. Nevertheless, the IESC strongly recommends for EHL to take this issue up with relevant governmental and non-governmental bodies and drive the development of a multi stakeholder strategy concerning these problems, building on core competencies of each stakeholder and using their respective spheres of influence. These problems will and cannot be solved in the short term, but it is in the interest of the Project and the people of PNG to at minimum start a credible process for managing these issues in the long term.

6.3.3 Recommendations

1. The quality and effective implementation of these women's grievance mechanisms varies greatly across the Project. IESC therefore recommends for the Project to 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, at the Project level, including concise instructions for Contractors and Lancos.
3. Take up the issue of domestic violence and related social problems that have been unintentionally aggravated by the Project, with relevant governmental and non-governmental bodies and drive the development of a multi stakeholder strategy, building on core competencies of each stakeholder and using their respective spheres of influence.
4. 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 management is an important component of the PNG LNG Project. Camp construction is progressing to schedule, 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.

C1 and EPC4 are either experiencing or expecting problems with available space/person. EHL issued a non-conformance on minimum space/person requirements for C1, as monitoring revealed that different containers had been delivered than expected (6-to-a-room). EPC4 foresees upcoming problems with living space in the camps. EPC 4 currently has some 500 OCNs and expats and some 400 residential and walk-in PNG workers on site. EPC4 had originally planned for 1,400 beds, but has already expanded to currently 1,800 through to 2,200 and 700 walk-ins during peak. The site will remain a mixed camp; that is the camp will be open to PNG nationals employed on a 'walk-in' basis and closed for PNG nationals from other areas and all foreigners. First accommodation at the EPC4 camp is ready for use, but the wastewater treatment plant and power plant are still to be commissioned. Its tent camp is to be de-commissioned by mid-April. EPC4 taking over camp accommodation from C1 has become uncertain due the drilling contractor claiming part of that capacity. C1 expects to be demobilized by August/ September 2012 and EPC4 is expected to be at its peak in October 2012. Planned occupation of rooms has changed from four to six to a room, utilizing three bunk beds instead of four single beds. Room size is 21m², resulting in 3.5m² per person. The safety lockers will need to be changed from doubles to singles, thereby reducing private storage space for workers. The main concern is with ventilation and the risk of spread of airborne diseases, such as TB as the third person bunked will be at the door and at a fair distance from the window.

EPC5B has progressed considerably in terms of organizing its workers. It has several successful platforms in place for workers to voice their concerns, one of them being the Camp Facilities Management Committee - CFMC. This committee consists of members representing EHL, MCJV iPi and Lancos, but also includes an iPi male and female worker's representative. iPi workers have their own toolbox meetings (in Huli), where no iPi staff is present so it functions a bit like a workers council.

MCJV now resides in its main camp, whereas the Pioneer Camp is still in use and accommodates some MCJV staff and MS Police, Essar and PMV. Induction training includes camp rules, local culture training and a separate training for supervisors. Only once camp residents have passed this training do they receive a resident's badge. The camp caters to all nationalities and has a tri-weekly food rotation schedule. There is a camp feedback questionnaire that is entered into spreadsheets to monitor trends about camp residents' opinion on camp life. Camp space is according to EHL specifications. There are two bunk beds per room, but only three of the four beds are used to increase space per person. Even at full occupancy this would still meet EHL camp requirements, but the camp is never really full due to R&R.

Part of the national hires (operators etc.) who reside in the camp (60 -70 of the 90-100) have been accommodated at an outside-the-fence camp run by a local Lanco (KTDC - Komo Tukuba Development Corporation). MCJV and EHL staff inspects this camp. The national hires in the MCJV main camp are higher ranked EHL and MCJV employees (engineers, MDs etc.). The IESC could not inspect the external camp due to unrest outside the fence, but hopes to be able to do an inspection next visit.

The August 2011 assault and the last fatality (spotter overrun by frontend loader truck) led to increase in stress among workers and a free counselling phone line (Brisbane) has been opened to be a service to the affected workers. Compared to the pioneer camp, the situation in the current MCJV camp has improved considerably – e.g. double fencing, security with dogs, mobile squad etc. Workers confirmed that their feeling of security has increased. OCNs reported that their fortnightly meetings with MCJV have considerably contributed to their sense of security. Meetings are facilitated with interpreters (Urdu, Hindi, Tagalog) and they feel they now have a platform to voice security concerns and can be better updated on any security issues instead of through the grapevine. The presence of the Community Issues Committee has also improved the security situation. Large gatherings of angry mobs at the fence are a thing of the past.

During the visit the IESC also interviewed medical staff at some of the camps on occupational health issues. Medical staff testified that no systemic occupational health issues of a physical nature had come to their attention, such as exposure impacts and the like. The risk of increased psychological health issues among workers in camps arising from stress due to long-term isolation and an ongoing sense of the security threat in PNG, predominantly in the Highlands, was raised. Medical staff expects this situation only to worsen as work pressure and stress will be increasing due to construction targets nearing deadlines.

EPC4 has introduced several improvements in its human resource management since the September 2011 incident. EPC4 has introduced an improved and extended cultural awareness component in its induction training. Instead of only training expats and OCNs on PNG culture, PNG workers are now also exposed to reverse cultural awareness training. According to EPC4 this has greatly enhanced team building on the work floor and co-habitation in the camp.

Camp grievance mechanisms are improving compared to our November visit. As most women employed by the Project are working in catering and housekeeping jobs in the camps, the women's grievance mechanisms is most applicable within the camp context (see section on 6.3 on Gender).

6.4.3 Recommendations

1. Rigid implementation, monitoring and evaluation of risk mitigation measures to manage reduced space/person at the LNG plant site and in the Upstream Area (repeat recommendation).
2. Carry out a rapid psychological health assessment among the Project's work force, predominantly in the Highlands. Through EHL medical officers at contractor level and medical staff at camp clinics. More specifically, focus on stress due to long-term isolation and an ongoing sense of the security threat in PNG and possible exacerbation thereof as work pressure and stress increase upon Project completion.
3. For recommendation on a women-specific grievance mechanism at camps see section 6.3 on Gender.

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 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

The IESC has commented in a number of previous reviews that the Community Health Program undertaken by EHL is one of the most comprehensive ever undertaken for a private sector development project and was likely to leave behind a positive legacy. During the present visit, the IESC was concerned to learn about the departure of the former Community Health Manager and Newfields, the community health consultants, who together were instrumental in designing and setting up the program. It was very clear that the remaining staff were not sufficiently conversant with the objectives of the Community Health program and detailed arrangements for its implementation. The program is a major EHL investment that has surrounding it a web of outside dependencies and expectations that cannot be abruptly discontinued. The IESC strongly recommends that the former Community Health Manager and key Newfields specialists be recalled, if not to continue the program in its totality, at least to undertake a comprehensive handover. The handover should allow sufficient time for new EHL staff to be able to develop good working relationships with the wide network of field partners who are critical for quality program delivery.

The IESC is also concerned at the protracted delays 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 results were to have been available for each of the last two IESC visits. The Community Health team could not provide any satisfactory answer as to why the results were delayed nor make any firm commitment as to when they would be ready. The iHDSS surveys were designed to provide a platform for both community health and broader social monitoring. A Level 2 non-conformance is raised for the continued delay in issuing what is a critical Project monitoring commitment.

Worker Health

Occupational health continues to be a major focus, especially in consideration of the fact that the number of workers is approaching its maximum and now exceeds more than 16,200 workers. With this growth in the workforce, EHL has focused on identifying camp services risks, in particular food and potable water safety; vector control; camp hygiene and sanitation; and camp industrial hygiene across the Project. The Project

continues to focus on malaria control measures after an increase in serious malaria cases in the first quarter of 2011. By the end of March 2012, the malaria case incident rate was less than 10% of what had been recorded the previous year. Another communicable disease affecting project personnel is Tuberculosis (TB). EHL has placed greater emphasis on tuberculosis diagnosis and testing, in particular with the addition of new TB diagnostic equipment for utilization at selected worksites to ensure accurate and expedient analysis for suspected cases. The Tuberculosis Case Incident Rate also continues to be lower than at the beginning of 2011, although there were three confirmed cases of community-acquired tuberculosis during Q1 2012. Tuberculosis cases have undergone re-classification as either Index cases (community acquired from outside camp or worksite) or Serious Illness Event cases (a confirmed tuberculosis case acquired from someone within a camp or worksite).

During the March visit the IESC also looked into other occupational health issues. Most medical staff interviewed testified that no systemic occupational health issues of a physical nature had come to their attention, such as exposure impacts and the like. Nevertheless, most did notice an increase in 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. Medics expect this situation to only worsen as work pressure and stress will be increasing due to construction targets nearing deadlines.

During previous visits the IESC had suggested to further investigate 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. During this visit the IESC noted that in various camp canteens practical measures had been taken to reduce caloric intake and enhance intake of nutritious food. Measures varied from moving dessert tables to the back of the canteen to not allowing more than one menu choice on a plate per serving, while allowing for repeat servings. The IESC sees these as welcome and more dynamic measures, complementing the more passive poster campaigns in canteens.

7.1.3 Recommendations

1. The former Community Health Manager and Newfields team should be recalled to conduct a robust and careful handover of the Community Health program to their replacements.
2. Build on practical measures taken in certain camp canteens to reduce calorie intake and promote intake of nutritious food and share lessons learned to show the results of the practices put in place across the Project.

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 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), down to 0.46 for the for the entire Project to date, but the Project also recorded its forth fatality on February 10, 2012, this time

involving the death of a person working for KQCJV, a Lanco subcontracted to MCJV at the Timalia Boulder Pit (TB1) as part of the PNG LNG Project. The victim was a spotter who was struck by a front end loader operating in the vicinity of a stock pile and the accident related to both the front end loader operator and the victim not being aware of each other's movements.

A preliminary event analysis revealed the following sequence of events – February 10, 2012

- Injured person begins to direct tipper trucks to gravel loading area following lunch.
- Front-end loader operator is conducting a recently assigned task that was not discussed at Pre-Start or Tool Box Talk.
- Front-end loader has significant blind spots impeding the operator's field of view.
- Injured person departs a designated spotter area and enters traffic flow lanes to better direct traffic and locates a different Front-end loader to load the tipper trucks.
- Front-end loader travels around a gravel stock pile, the operator is unaware of the IP is in his path of travel; strikes and fatally injures the IP.

A question asked to the IESC by Lender representatives was whether or not this number of deaths is abnormal or typical for a Project of this size. Although the position of EHL is that all accidents are preventable, the first three accidents were extraordinary and of the four deaths, this latest might have been preventable had supervision of ground activities been better and if there had been better awareness of blind spots associated with large construction equipment. Our experience is, unfortunately, that deaths do take place in association with large development projects and in spite of the fatal accidents, this one is better than most and they happened in spite of a comprehensive H&S program. All of the EPC Contractors have undertaken impressive awareness campaigns to make sure safety is everyone's top priority.

EHL also continues its extensive National Safety Champions program that started in September 2011. Training programs are rolled out on Field Safety in Uncontrolled Environments. To date over 300 Safety Champions have completed the initial training, including 80 during Q1 2012.

Also since the last IESC field visit, CCJV recorded an impressive 10,000,000 hours without a Lost Time Incident (LTI). For this achievement, CCJV was awarded the Annual Project Executive SSHE Award, intended to provide opportunities for EPC Contractors to showcase their achievements and share learnings and best practices.

7.2.3 Recommendation

1. Extend the umbrella of worker safety to the third-party facilities and activities identified as requiring stewardship. Safety should be one of the most important aspects of this stewardship (continued repeat recommendation).

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 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 – Spicapag). With respect to C1, a sacred site consisting of a spirit sacrificial site and one ceremonial site consisting of a dance performance site has been recently discovered, along with 51 chance finds at the HGCP site. Spicapag has recently discovered an ancestral village, reportedly inhabited c.1950's but now abandoned in favor of Kantobo. MCJV has not conducted any new pre-construction surveys, but two new chance finds have been recently made at the Komo airfield.

A positive aspect to the cultural heritage program is the involvement of PNG nationals. EHL now has a full-time PNG archaeologist based in POM who is supported by Coffey consultants as required. This individual is also responsible for recording, tracking and managing the Project's cultural heritage items and is the point of contact with the National Museum. C1 – CCJV has a full-time national field archaeologist. EPC3 has a national archaeologist on an on-call basis. EPC5A – Spicapag has two full-time field-based national archaeologists. EPC5B – MCJV has one full-time field-based national archaeologist.

An issue yet to be resolved is that artifacts from salvage work in the HGCP area transported to Port Moresby in late April 2011 and inspected by PNG National Museum, still have not received an Archaeological Loan Permit such that they can be analyzed by Monash University. Obtaining this permit is a focal point of EHL's relationship with the National Museum, but it has yet to be procured.

8.3 RECOMMENDATION

1. An important activity still pending within the cultural heritage program is artifact analysis for material obtained in the Upstream Area of the Project, but obtaining an export permit for this material has been problematic. If resolution of this situation is not obtained by EHL's cultural heritage manager in the near future, consider approaching the National Museum at a higher level.

APPENDIX A

IESC 6TH MONITORING VISIT – TRIP SUMMARY AND DOCUMENTS PROVIDED

TRIP SUMMARY

March 12:

IESC team member Mark Pedersen arrives in POM.

March 13:

IESC Environmental:

- Visit to LNG Plant site with Mark Pedersen (IESC);
- Review of water management systems, the jetty and local fishing activities
- Remaining IESC Team members arrive in POM

March 14:

IESC Environmental, Social and LWC Team (excepting Mark Pedersen who stays at LNG Plant):

- Opening sessions and presentations in POM for entire team (Construction progress, E&S resource organizations; MOCs).
- Meeting in afternoon to hear presentation on the Tumbi Landslide

IESC Social:

- Social Presentations and meetings related to in-migration and resettlement.

IESC Labor & Working Conditions (LWC):

- Afternoon meetings with EHL

IESC Environmental:

- Afternoon presentations on waste management.
- Discussions related to Caution Bay marine studies and marine mammal monitoring by EPC2

March 15:

IESC Environmental and Social Team - Port Moresby

- Presentation related to Highlands Seismic Survey;
- Cultural heritage;
- Omati ecology and community issues;
- Weed management and reinstatement;
- Associated facilities;
- Health and Safety;
- Government Interface.

IESC Labor & Working Conditions (LWC):

- Travel to LNG Plant and various meetings

March 16:

IESC Environmental, Social and LWC Team:

- Various briefings in POM, conducted independently;
- Travel to Moro (all spend night at Moro).

March 17:

IESC Environmental, Social and LWC Team: helicopter from Moro to Kopi

- Flyover Lower Omati reinstated area along ROW;

IESC Environmental:

- Drive from Kopi to Gobe and inspect reinstatement.
- Spend night in Gobe

IESC Social and Environmental Team:

- Boat to Goare: discussions with local communities;
- Boat back to Kopi and spend night in Kopi.

IESC Labor & Working Conditions (LWC):

- Drive from Kopi to Gobe via Camp 1 and Kaiaam

March 18:

IESC Environmental, Travel from Camp 3 (Gobe) to Moro via Tamadigi Transit Camp:

- Conduct ROW inspections driving from Camp 3 (Gobe) to Moro via Kantobo and Tamadigi;
- Ridge Camp By-pass Road and CPF By-pass Road reinstatement.

IESC Social - Travel by chopper from Kopi to Tamadigi:

- Join environmental team members in drive from Tamadigi to Moro;
- Documents review and discussions.

IESC Labor & Working Conditions (LWC)

- Drive from Gobe Tamadigi
- Join environmental team members in drive from Tamadigi to Moro
- Entire team spends night at Moro

March 19:

IESC marine biologist Mark Pedersen departs

IESC Environmental & Social Team – Travel by car from Moro to Homa.

- Review terrain where pipeline will eventually go;
- Conduct meeting with Homa community members.
- Afternoon meetings

IESC LWC

- Meetings with EPC5A and return to Moro;
- Entire team spends night at Moro

March 20:

IESC Environmental, Social and LWC Team: fly to HGDP from Moro (necessary to fly within the fence to avoid civil unrest at HGDP entrance)

IESC Environmental:

- Flyover of Eastern Miller Range as potential conservation area;
- HGCP site visit to CCJV and EPC4 facilities (desk based discussions around HGCP construction environmental aspects, provision of C1/CCJV/EPC4 environmental documents);
- Afternoon meetings on Access Road Progress; Heavy Haul Road

IESC Social:

- Restricted outside access due to community blockage of HGCP site
- Afternoon meetings on Access Road Progress; Heavy Haul Road and Water Task Force;

IESC LWC:

- Various meetings with EPC4 people responsible for HR and camp management

Entire team flies back to Moro and spends night there. The original schedule was for the team to spend the night in the Hides area, but that was not practical due to consequences of the civil unrest.

March 21:

IESC Environmental, Social and LWC Team - fly to HGDP from Moro:

- Flyover of Wellpad Access Road and wellpads along Hides Ridge (visit on the ground cancelled)
- Entire team receives briefing on work stoppages and general civil unrest;

IESC Environmental and Social Team:

- Water Task Force presentation ;
- Drilling presentation;
- Meeting with Hides chiefs (social only)
- Flyover of Tumbi Landslide and ground visit

IESC LWC:

- Document review and meetings with CCJV people responsible for HR and camp management

Entire team flies back to Moro and spends night there. The original schedule was for the team to spend the night in the Hides area, but that was not practical due to consequences of the civil unrest.

March 22:

IESC Environmental, Social and LWC Team – Fly to Komo

Plans were changed, as there was no access to the Timalia Quarry as it had not re-opened after the February fatality.

IESC Environmental Team:

- EPC5B Komo - Inspection of airfield erosion and sediment controls and reinstatement
- Visit to North and South Diversions;
- Transit to Moro Camp (Chopper).

IESC Social Team:

- Meetings with Komo and HHR resettlers;
- Transit to Moro Camp (Chopper).

IESC LWC:

- Interviews with MCJV people responsible for HR and camp management
- Transit to Moro Camp (Chopper).

March 23:

IESC Environmental, Social and LWC Team – Moro to Komo to Moro to Port Moresby:

- Pioneer and Main Camp reviews;
- Briefings and meetings;
- Transit to Moro Cam and unexpectedly connected with a flight to POM.

March 24:

IESC Environmental, Social and LWC Team – in POM

- Open day except for review of previous non-conformances at Crowne Hotel

March 25:

IESC Environmental, Social and LWC Team – in POM

- Prepare for Close out meeting.

March 26:

IESC Environmental, Social and LWC Team – in POM

- Briefings on community health, security and incidents, Lancos, National content, drilling and foam management
- Meeting with Operations to review access to remote sites and ROW management

March 27:

IESC Environmental (biologist) to Lae; remaining Environmental, Social and LWC Team – to LNG Plant area

- Visit Lae port import location and 11 Mile site – return to POM
- Visit school ceremony for receipt of library partially funded by Project in Boera
- Attend meeting with women's group in Porebada
- Meet with community members from Papa attending class at POM Tech
- Several meetings on topics including the POM CTF and various gender initiatives

March 28:

IESC Environmental, Social and LWC Team – in POM

- Prepare for Close out meeting.

March 29:

IESC Environmental, Social and LWC Team – in POM

- Close out meeting.
- IESC team (except Robert Barclay) departs POM to return home

March 30:

Departure of Robert Barclay

DOCUMENTATION RECEIVED

On-site documents:

ASSOCIATED FACILITIES

- *Associated Facilities Tier II Risk Screenings* – xls sheet;
- *IESC Monitoring Review Action Tracking List as of 23 March 2012* – xls sheet;
- *Register of Worksites, Facilities & Services_13 March 2012 Master* – xls sheet;
- *HGDC Para Camp Review Final Draft* – doc;
- *201110005 - Pipeline Reroutes* – ppt presentation;
- *Kokomo Seismic Presentation* – ppt presentation;
- *L&CA Organisation Overview 2012-03 – Lenders* – ppt presentation;
- *IESC Visit # 6 - EPC5A Quarry Mgt Presentation* – pdf;
- *IESC Visit 6 E-R Org Chart_Mar 2012* – pdf.

BIODIVERSITY

- *Whaleshark Videos*;
- *2012-Mar 14 IESC Fisheries Presentation_ Caution Bay* – ppt presentation;
- *2012-Mar 14 IESC Fisheries Presentation_ Caution Bay* – ppt presentation;
- *Biodiversity Strategy Multistakeholder Meeting Oct 2011_Record of Meeting* – doc;
- *Biodiversity Strategy Working Group Protocol Rev 1* – pdf;
- *CBIC Quarantine Report - February 2012* – xls sheet;
- *Flyover Map_20_03_2012* – pdf;
- *Freshwater Ecological Monitoring 2011 PGHU-EN-SRZZZ-000051_Rev0* – pdf;
- *IESC March Visit - EPC5A Reinstatement* – ppt presentation;
- *IESC Visit 6 - Presentation-CB water -Ecology_High_res.* – ppt presentation;
- *IESC Visit 6 - Biodiversity Monitoring Plan_Crome* – ppt presentation;
- *IESC Visit 6 - EPC5A Dieback Presentation* – ppt presentation;
- *IESC Visit 6 - Biodiversity Offset Delivery Plan_19 March* – ppt presentation;
- *IESC Visit 6 - Piku Conservation Project_19 March* – ppt presentation;
- *IESC Visit 6 - FW Ecology Program* – ppt presentation;
- *IESC Visit 6 - FW Ecology Program* – ppt presentation;
- *IESC Visit 6 - Mgt Invasive species* – ppt presentation;
- *IESC Visit 6 - Offshore Marine Fauna* – ppt presentation;
- *IESC Visit 6 - Omati Dredging* – ppt presentation;
- *IESC Visit 6 - Reinstatement_15 March* – ppt presentation;
- *Lake Kutubu Catchment Management Plan* – pdf;
- *Lake Kutubu Conservation Program_March 2011* – ppt presentation;
- *Lenders Presentation Omati March 13 - 2011skiniedits* – ppt presentation;
- *Omati Fisheries Presentation* – ppt presentation;
- *Quarantine Lenders Presentation _March 2012* – ppt presentation;
- *The Piku Project 2012: Community led conservation* – ppt presentation;
- *Weeds Audit 2011_Phase 1_Final Compressed* - pdf.

C1-HIDES

- *C1 Monthly Report February 2012* – pdf;
- *C1 Monthly Report Jan 2012* – pdf;

- *C1 Monthly Report December 2011 – pdf.*

CONSTRUCTION

- *December Project Status Update – 20120315 –ppt presentation;*
- *EPC5A Mar-12 Update_IESC Visit –ppt presentation;*
- *Hides Well Pad Access Road Jan 2012 –ppt presentation;*
- *Lender Project Status Update – 20120315 –ppt presentation;*
- *Pipeline RoW Presentation IESC March 2012 –ppt presentation;*
- *Remote Site Access Presentation IESC March 2012 –ppt presentation;*
- *WPAR Env Highlights –ppt presentation.*

CORRECTIVE ACTIONS REGISTER

- *Corrective Actions Register – xls sheet.*

CULTURAL HERITAGE

- *IESC Visit 6_Cultural Heritage_15 March – ppt presentation.*

EPC1

- *EPC1 Environmental Statistics - Dec 2011 – doc;*
- *EPC1 Environmental Statistics – Jan 2012 – doc;*
- *EPC1 Environmental Statistics – Feb 2012 – doc.*

EPC2

- *Monthly Environmental Report - Feb 2012 – pdf;*
- *PGHU-SA-BRZZZ-000024 - Monthly Progress Report No. 24_Rev 0 – pdf;*
- *PGHU-SA-BRZZZ-000025 - Monthly Progress Report No. 25_Rev 0 – pdf;*
- *PGHU-SA-BRZZZ-000026 Rev 0 – pdf.*

EPC3

- *Construction Monthly Environmental Report -2011-12-31 – doc;*
- *Appendix-1 Environment Patrol Report.Rev1 – pdf;*
- *Appendix-2 Marine Mammal Observation Report – pdf;*
- *Appendix-3 Sandalwood Monitoring December 2011 – pdf;*
- *Appendix-4 Consolidated Waste Control Activity Monthly Report (December 2011) – xls sheet;*
- *Appendix-5 WWT Discharge Monitoring Report – pdf;*
- *Appendix-6 Water Usage Summary – xls sheet;*
- *Appendix-7 Storm Water Quality Monitoring Report – pdf;*
- *Appendix-8 Sea Water Quality Monitoring Report – pdf;*
- *Appendix-9 Action Plan to Retify Site Drainage and Erosion Control – pdf;*
- *Appendix-10 Disturbed Area Map – pdf;*
- *Appendix-11 Disturbed and Revegetation areas – pdf;*
- *Construction Monthly Environmental Report -2012-01-31 – doc;*
- *Appendix-1 Environment Patrol Report – pdf;*
- *Appendix-2 Marine Mammal Observation Report – pdf;*
- *Appendix-3 Sandalwood Monitoring January 2012 – pdf;*

- *Waste Control Activity Monthly Report (January 2012) – xls sheet;*
- *Appendix-5 WWT Discharge Monitoring Report – pdf;*
- *Appendix-6 Water Usage Summary – xls sheet;*
- *Appendix-7 Storm Water Quality Monitoring Report – pdf;*
- *Appendix-8 Baruni Quarry Service Risk Screening Report – pdf;*
- *Appendix-9 Disturbed Area Map – pdf;*
- *Construction Monthly Environmental Report -2012-02-29 – doc;*
- *Appendix-1 Environment Patrol Report – pdf;*
- *Appendix-2 Marine Mammal Observation Report – pdf;*
- *Appendix-3 Sandalwood Monitoring February 2012 – pdf;*
- *Appendix-4 Consolidated Waste Control Activity Monthly Report – xls sheet;*
- *Appendix-5 WWT Discharge Monitoring Report – pdf;*
- *Appendix-6 Water Usage Summary – xls sheet;*
- *Appendix-7 Storm Water Quality Monitoring Report – pdf;*
- *Appendix-8 Disturbed Area Map – pdf;*
- *Appendix-9 Disturbed, Re-vegetation Area – pdf.*

EPC4

- *EPC4 Incident Register – xls sheet;*
- *Oct 2011_153517-PGHU-CV-SRZZZ-00041 – pdf;*
- *Nov 2011_153517-PGHU-CV-SRZZZ-00041 – pdf;*
- *Dec 2011_153517-PGHU-CV-SRZZZ-00041 – pdf;*
- *Environmental Report Monthly Dec 2012 – pdf;*
- *Jan 2012_153517-PGHU-CV-SRZZZ-00043 – pdf;*
- *Feb 2012_153517-PGHU-CV-SRZZZ-00044 – pdf;*
- *Feb_153517-PGHU-CV-SRZZZ-00044 – pdf.*

EPC5A

- *PGHU-SC-BRZZZ-000024 - monthly report n°24 (november 2011-december 2011) – pdf;*
- *PGHU-SC-BRZZZ-000025_Rev0_Dec to Jan 12 – pdf;*
- *PGHU-SC-BRZZZ-000026 - monthly report n°26 (21 jan - 17 feb 2012) – pdf.*

EPC5B

- *Env Monthly Report Dec 12 – doc;*
- *Monthly Contractor Environmental Construction Report – xls sheet;*
- *Env Monthly Report Jan 12 – doc;*
- *Env Monthly Report Feb 12 – doc.*

HEALTH & SAFETY

- *SSHE Review March 2012 (Safety JH Rev 6 Basic Pack Only) –ppt presentation.*

MONITORING AND MEASUREMENT

- *Environmental Monitoring – pdf;*
- *E4-EHL-000_Revised draft – xls sheet;*
- *E4-EPC5B-000_Revised draft – xls sheet;*
- *E4-Waste Accept List draft – xls sheet;*

- *EPC4 Fly Camp WWTP Monitoring* – xls sheet;
- *EPC4 Waste Water Monitoring Database 09Mar12* – xls sheet.

SOCIAL PRESENTATIONS AND DOCS

- *Industrial Relations Course final draft* – pdf;
- *2012_March 16 IESC_Stakeholder Engagement_Draft_20_02_2012* – ppt presentation;
- *IESC PIIMS PRESENTATION2012-03-14* – ppt presentation;
- *Lenders_Grievance Management_2010 version (2) 2012-03-16* – ppt presentation;
- *Lenders_Grievance Management_2010 version2012-03-16* – ppt presentation;
- *BD - Lender Mar 2012* – ppt presentation;
- *Grievance Log_PTD_Open&Closed* – xls sheet;
- *IESC March 2012 - Resettlement Overview 12 March 2012* – ppt presentation;
- *IESC National Content Review Mar 2012* – ppt presentation;
- *IESC Presentation Project Labor and Working Conditions_14_Mar_2012* – ppt presentation;
- *IESC Water Task Force - 20 March 2012* – ppt presentation;
- *Security March Lenders report – 2012* – ppt presentation.

SPILL PREPAREDNESS

- *RA Closure Plan_Example 2-NLR RA Action Plans x 2_signed* – pdf;
- *RA Closure Plan_Example 1-FRRSK-410004-04to13-17to20-23_Const SRA Closeout Sheets* – pdf.

WASTE MANAGEMENT

- *Final Waste Tracking Register_2009 - 2012 (Autosaved)* – xls sheet;
- *IESC Visit 6_Waste_14 March 2012* – ppt presentation.

WASTE WATER MANAGEMENT

- *Potable water and WWTP2 EB1206918_0_COA (2) 12.03.07* - pdf;
- *IESC Visit 6 - EPC5A WWTP Presentation* – ppt presentation;
- *IESC Visit 6 - EPC4 WWTP Overview* – ppt presentation;
- *IESC Visit 6 C1 WWTP Overview* – ppt presentation;
- *IESC Visit 6 EPC3 WWTP Overview* – ppt presentation;
- *IESC Visit 6 EPC4 WWTP Overview* – ppt presentation.

Post-Mission documents

- *Community Health March 2012* - pdf;
- *Flyover the wellpad access road (A Fowkes comments added 120328)* – ppt presentation;
- *Gobe Access_20120211* – ppt presentation;
- *PGHU-EH-CDMAP-000054_RevB Logistics route overview map* – pdf;
- *PNG LNG Govt Affairs March 2012* – pdf.