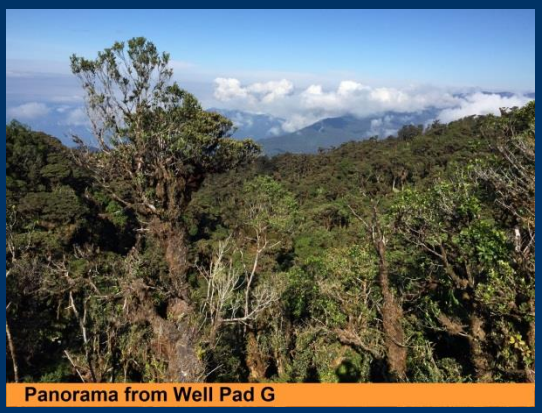
LNG tanks with LNG carrier in background

Meeting with Belopa Women's Group



Panorama from Well Pad G

REPORT OF THE:

INDEPENDENT ENVIRONMENTAL & SOCIAL CONSULTANT

ENVIRONMENTAL & SOCIAL COMPLIANCE MONITORING

PAPUA NEW GUINEA LNG PROJECT

Site Visit: October 2015

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

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APPENDIX A: IESC 15th MONITORING VISIT – TRIP SUMMARY

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FIGURES

ACRONYMS

ADR	Alternative Dispute Resolution
AGI	Above-Ground Installation
ANUE	ANUedge – social development NGO
BMP	Biodiversity Monitoring Plan
BOD	Biological Oxygen Demand
BVG	Broad Vegetation Group
CBD	Convention on Biological Diversity
CDS	Community Development Support
CEPA	Conservation and Environment Protection Authority
CHP	Community Health Program
CP	Cathodic Protection
CTA	Common Terms Agreement
CV	Check valves
DEC	Department of Environment and Conservation (now CEPA)
DPE	Department of Petroleum and Energy
ECA	Export Credit Agency
EHS	Environmental Health & Safety
EMPNG	ExxonMobil PNG Limited (formerly EHL – Esso Highlands Limited)
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environment and Social Management Plan
ESMS	Environmental and Social Management System
GIS	Geographic Information System
HCSF	Host Country Security Forces
HGCP	Hides Gas Conditioning Plant
HGSF	Hides Gas Security Force
HH	Habitat Hectare
HWMA	Hides Waste Management Area
IBR	Institute of Biological Research
ICRC	International Committee of the Red Cross
IDOM	Infectious Disease Outbreak Management
IESC	Independent Environmental and Social Consultant
IFC	International Finance Corporation
iHDSS	Integrated Health Demographic Surveillance System
ILG	Incorporated Land Groups
IMR	Papua New Guinea Institute of Medical Research
ISPM-15	International Standard for Phytosanitary Measures No. 15
IR	Industrial Relations
KP	Kilometer Point
KPI	Key Performance Indicator
LOB-ID	Landowner Benefits Identification and Distribution
L&CA	Land and Community Affairs
LEED	Leadership in Energy and Environmental Design
LGIA	Land Groups Incorporation Act
LKRUMP	Lower Kikori Resource Use Management Plan
LNG	Liquefied Natural Gas
LTI	Lost Time Incident
MLV	Main Line Valves
MOC	Management of Change
MOH	Medicine and Occupational Health
MoU	Memorandum of Understanding
NAQIA	National Agriculture Quarantine and Inspection Authority

NBSAP	National Biodiversity Strategy and Action Plan
NC	Non-Conformance or Non-Compliance
NGO	Non-Governmental Organization
NNL	No net loss
OIMS	Operations Integrity Management System
O&M	Operations and Maintenance
OSL	Oil Search Limited
Para.	Paragraph
PCS	Pre-Construction Survey
PDL	Petroleum Development License
PFC	Permanent Facilities Compound
P&GA	Public and Government Affairs
PMA	Program Monitoring Activity
PNGDF	PNG Defense Force
PNG LNG	Papua New Guinea Liquefied Natural Gas Project
PS	Performance Standard
Q	Quarter
RAP	Resettlement Action Plan
RAP	Rapid Assessment
RoW	Right-of-Way
RPNGC	Royal Papua New Guinea Constabulary
SOW	Scope of Work
TOR	Terms of Reference
TRIR	Total Recordable Incident Rate
TSS	Total Suspended Solids
U-PNG	University of PNG
VMP	Vehicle Monitoring Plan
WCS	Wildlife Conservation Society
WMA	Wildlife Management Area
WMZ	Weed Management Zone
WWTP	Wastewater Treatment Plant
YTD	Year to Date

EXECUTIVE SUMMARY AND CONCLUSIONS

This report represents the fifteenth 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 ExxonMobil PNG (EMPNG) as the Operator 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 the Production phase of this development. This visit was conducted from October 13 – 22, 2015 in PNG.

Gas is obtained from the Hides Field, processed at the Hides Gas Conditioning Plant (HGCP) and sent to the LNG Plant about twenty kilometers northwest of Port Moresby on the coast of the Gulf of Papua. There, the gas is liquefied and the resulting LNG product (approximately 6.9 million tons per annum) is loaded onto ocean going tankers and shipped to gas markets overseas. As of the time of this field visit over 9.4 million tons of LNG have been produced and more than 130 tankers of LNG shipped from the jetty at the LNG Plant.

Environmental and Social Management System (ESMS)

Production continues to be responsible for all aspects of operations. The only major activity that falls under the umbrella of Construction is the ongoing well drilling. After the well drilling has ended, additionalany additionaladditional construction will be related to subsequent development Phases (Phases II – IV) where the requirement is that the ESMP be updated at least three months prior to each subsequent Phase. The construction of the flowlines from Angore to the HGCP, yet to be scheduled, will fall under this requirement, as will the construction of a Booster Compressor Station upstream of the HGCP, also yet to be scheduled.

Since the last IESC visit, EMPNG has undertaken considerable effort to roll out to contractors the ESMS as defined in the Environmental and Social Management Plan (ESMP) and this effort has been effective. Overall, our impression is that EMPNG is now at an appropriate stage in terms of disseminating ESMP requirements to contractors. There is still more to do, but the systems are in place for contractors to fulfill their ESMP requirements. What remains to be developed is a reporting system such that contractor ESMP performance can be evaluated and tracked. A standard reporting template has been developed to facilitate this process and contractors are now required to submit ESMP compliance information, a process expected to be refined as data are gathered.

The Production ESMP is currently in a Revision 0 (R0) stage. As there are several aspects of EMPNG that have changed since the development of R0, plans are in place to develop R1. Major changes are not expected, but some obvious changes are needed, such as updates to EMPNG organizational structure; clarification of clauses or statements; new content, changes or deletions related to environmental and social management practices. The new ESMP is expected to be developed by Q2 2016.

The emergency response system is fully in place in terms of plans and procedures, equipment and personnel. The overall scope of activities relates to maintaining readiness to respond to an emergency, as reflected in a well-developed program of training and drills.

Pollution Prevention

Waste continues to be well managed. The first landfill cell at the Hides Waste Management Area (HWMA) is full and waste is being placed in the second cell. Two cells remain that have not been filled with waste. Once all of the cells are full, it is likely that another three meter lift of waste will be placed over the top of all of the cells. About 80% of the waste currently being generated by the Project is from Drilling. This waste stream will cease by Q1 2016. The industrial incinerator at the HWMA continues to operate. This incinerator may become the permanent incinerator for production waste, but a final decision will be made only after a cost-benefit analysis.

Significant effort has been placed in upgrading the systems for wastewater treatment. Full plant change-outs have been made at three out of six of the operating WWTPs and equipment and operational changes have been made at the other three sites. The permanent Tri-Star WWTP at the HGCP main camp is operational and functioning well. The new Komo Red Fox WWTP was commissioned on June16 and the Angore rotating biological contactor or RBC units were replaced with three Red Fox units between April and September 2015. Significant effort has been placed to improve the performance of the old

construction-phase WWTPs at Moro Camp B and HQ3. While some improvement in performance has been achieved, the HQ3 system is about to be decommissioned and the Moro Camp B unit will be replaced before the end of the year. The WWTP at the LNG Plant continues to function as designed.

Overall, the effort to improve WWTP performance has been effective and the Level 1 non-compliance assigned at the time of the last IESC visit is rescinded, except it is apparent that the Moro Camp B WWTP will need to be replaced and HQ3 WWTP will need to be removed. There is still work to do, but the proof of the effort is with respect to environmental releases. Environmental discharges from these plants are overwhelmingly compliant. In only one case between April and September 2015 did a discharged effluent exceed the discharge standards (BOD from the HGCP in August). This is a significant improvement.

Flaring and fuel consumption have reached steady state and will be reported only in the EMPNG bi-annual reports. The second year of stack testing at HGCP and HWMF were completed in September 2015. Preliminary results show that all units are performing within EMP criteria. Due to the drought conditions encountered at the time of this IESC visit, dust was an issue at all locations, although EMPNG does water project roads.

Noise monitoring identified an exceedance at the perimeter fence near the HGCP WWTP (although not at the nearest residents from the fence), where the nighttime noise limit of 45 dB(A) was exceeded. With noise suppression added to the blowers, the noise level is now 43 dB(A). EMPNG showed good response in resolving this noise issue.

Erosion and Sediment Control

Significant progress has been achieved in terms of completing the erosion and sediment control infrastructure at the locations where progress had been slow, in particular the Komo air field, but also at the HGCP and Well Pad G. The mitigation of erosion and sediment control systems along the pipeline ROW had already reached the stage of undertaking routine maintenance by the time of the May 2015 field visit, but it is IESC's opinion that at that time EMPNG was still trying to catch up with problems that threatened to worsen at the Upstream AGIs. A comprehensive erosion and sediment control system has been completed at Komo. The initial steps to finalize erosion and sediment control measures around the HGCP and at Well Pad G have been completed. It is expected that these systems now just require routine maintenance to be effective.

Ecological Management and Biodiversity

The Biodiversity Strategy, along with the existing Biodiversity Offset Delivery Plan, Framework for Biodiversity Offset and Biodiversity Monitoring Plan documents, are currently undergoing extensive review and update, and will be placed on the public PNG LNG website when completed.

Two Level 1 Non-Conformances (NC) related to the biodiversity offset program given during our last visit have been closed. Regarding the technical framework underpinning the offset program, EMPNG has reviewed their approach following ongoing dialogue with IESC and internal technical specialists. The concepts of offset accounting, timeframe over which the offset program should last, additionality and like-for-like equivalence are all being reviewed and are so far progressing sufficiently well that the IESC feels it appropriate to close the NCs. Regarding the implementation of the offset program, EMPNG has addressed contractual bottle-necks, and is providing additional resources to help enable NGO partners to deliver offset components.

The Lake Kutubu WMA Enhancement Program Coordinator position is restored with a contract now in place – workshops on the Enhancement Program and ecosystem services are to be held shortly. Meetings have occurred with Hela government representatives to discuss upper elevation offset site options and further stakeholder meetings are planned. For the lower elevation offset, a field trip into the Lower Kikori delta area will shortly be held to re-engage with communities and start focused discussions on conservation projects.

The first full year of PMA monitoring campaign continues, and findings from PMA-2 condition surveys and PMA-3 biodiversity surveys expected by end of 2015/early 2016. A trial of offset project efficacy (PMA-4) will focus on Lake Kutubu later this year. Key Performance Indicators (KPI) have been developed. Due to the ongoing early learnings from the PMA campaigns, the PMA Protocols are undergoing further revision. The IESC is keen to understand further how findings from monitoring surveys will inform adaptive management and tie into the overall EMS. Dialogue continues on how the challenges

of analyzing and interpreting species diversity and abundance can best deliver the required information for adaptive management..

Recommendations focus on: offset site delivery plans to include site-specific justifications for how additionality is being met, and also site-specific assessment of risks, uncertainties and constraints.

Induced Access

Vehicle data on road use continues to be collected and data are presented in Section 5.3.1. Following the NC in our last report, EMPNG has reviewed their procedures with regard to Access Monitors at manned boom-gates, enforcement of these procedures, and revision to the Induced Access Protocol. Although not necessarily preventing access, the IESC accepts that a combination of recording/analyzing road use, regular community liaison, effective RoW monitoring and remote sensing data should in theory be sufficient to detect any potentially damaging 3rd party activities; we therefore close the NC.

The Tamalia River and Waguba River bridges have been transferred to the PNG government as per requests noted in our last report. The company is undertaking risk assessments related to the future handover of the Kaiam/Kikori River Bridge and Kopi bypass; risk assessments for the Kantobo to Gobe road section will be undertaken in 2016. The IESC continues to believe that unrestricted access to project roads and infrastructure represents a potentially significant risk to the Project in relation to avoiding induced access, land-use change, the spread of weeds, pests and pathogens, and has the potential to threaten ecological integrity.

Recommendations focus on: EMPNG should ensure as part of its negotiations with government on transfer of project infrastructure that every effort is made to retain controls on vehicular access, to prevent any ecological damage through 3rd party access to EMPNG roads and infrastructure, and therefore allow the Company to uphold their commitments made to Lenders with regard to invasive species, induced access and ecological management.

Reinstatement

A strong El Niño event is causing severe drought conditions across the country. Some revegetated areas are suffering (e.g. Komo) , but others appear to be benefitting perhaps from lack of excessive surface runoff enabling root systems to take hold – time will tell. We observed improved vegetation coverage in areas such as the limestone rubble side-casting on the steep slopes of the Benaria Ridge RoW and Homa Ridge Access Road to MLV-2, and increasing plant diversity in natural regeneration on Hides Ridge side-casting areas. Results from the Reinstatement audit or Regeneration survey undertaken earlier in 2015 were not available at the time of our visit.

Invasive Species and Quarantine Management

Results and recommendations from BioTropica's recent invasive species audit were provided. Anglestem willow primrose (*Ludwigia leptocarpa*) and bitter vine continue to expand across multiple weed management zones (WMZs). Species range data analyzed for 15 Priority-1 species over seven audits indicate that 60% have extended their ranges from the earliest pre-construction audit; three species in particular have shown clear expansion trends: again anglestem willow primrose, also spiked pepper, molasses grass. To stop the distribution and abundance expansion along roads, it is important to reinstate quarantine measures, such as an effective buffer zone between Kaiam/Kikori River and Mubi River (WMZ2). The company is targeting weed eradication at Lake Kutubu via a specific site weed management plan for urgent implementation. However we have raised an Observation in the Issues Table, as additional management focus is required to ensure further increases in both range expansions and abundance are prevented.

Import shipment volumes are much reduced from construction times, and are expected to reduce significantly once drilling is completed. Nevertheless risks still exist, and NAQIA is still requiring refumigations, primarily due to documentation irregularities. EMPNG advises they are reiterating with their remaining suppliers the importance of compliance with company procedures.

Recommendations focus on: consulting on the value of a Homa-Benaria Ridge weed management plan; additional focus to reinstate the weed quarantine buffer capability of WMZ-2.

Resettlement Organizational Structure

The Public and Government Affairs group is responsible for the remaining resettlement obligations. The former Compliance Manager has transitioned to other responsibilities, but retains responsibility for resettlement completion and closeout. Support from the same resettlement field and evaluation team continues. The IESC considers this structure and staffing appropriate.

Resettlement Completion Status

Resettlement obligations are very near completion with all the required remedial actions for households experiencing declined conditions closed with the exception of two households for which the Project is working on an employment plan, and five households for which resolution must await the outcome of external events (e.g., court cases, refusal of recipient to accept assistance). The Project will follow up on these cases and will inform the IESC on completion of the remaining resettlement obligations and update the Resettlement Outcome Report.

The Project also completed the IESC recommended assessment of general water accessibility in the Komo and Hides areas. Remedial actions have been taken for all but two of the cases and a schedule has been established for these last two. Community water access will be improved by the construction of water tanks on suitable church properties.

The Project is using the lesssons learned from resettlement as the basis for upgrading its resettlement end to end process for future use. A Resettlement Guideline is being developed. During this visit, the IESC participated in a one day workshop to review and advise on these lessons (summarized in Section 6.3.1.2).

Community Impacts Management

The decrease in security incidents continues, with only eight mostly minor incidents reported. Host Government Security Forces (Royal Papua New Guinea Constabulary and PNG Defense Force) continue to provide security services in some Project areas. The Project applies and trains forces in the requirements of the Voluntary Principles for Security and Human Rights, including the use of force. The International Committee of the Red Cross is working with communities to help them understand the requirements of the Geneva Convention regarding Government obligations for control of its armed forces.

Community Support

The Project has responded positively to the June IESC recommendations. In the IESC's opinion, the CDS strategy and planning for Phase 1 is well conceived, suitable for longer term impact, and consistent with the overall goal of the CDS Program. CDS is now fully staffed and has a CDS Analyst and coordination staff and field assistants for the upstream area work. Coordination with and reporting mechanisms for other project and external partners are in place.

The Scopes of Work (SOW) with Australian National University – ANUedge (ANUE) for the plant site agricultural program was signed in June and for upstream agricultural program in July. The bases for careful contract management have been established. The program is underway with LNG plant site participants and five women's groups have been selected in the upstream areas. The drought has caused some re-alignment of the activities of the CDS agricultural program for which participants visited by IESC expressed gratitude.

The Project is conducting an assessment of the drought conditions that are having an acute impact on much of the country. Based on initial results, the Project has developed and is awaiting approval for a plan to supply water to the Hides/Komo area and is providing water to the schools and health centers in PNG plant area villages.

The plant site education program is currently focusing on training to improve the capacity of school boards. The IESC commends the Project for choosing capacity building at the village level where it has the potential to demonstrate to villagers that they can bring about change in education, as well as other aspects of their lives. The IESC recommends that follow up activities be done soon to sustain the initial enthusiasm that follows the training. CDS has also implemented or planned a number of one-off support measures for plant site villages as part of its Strategic Community Investment program.

Both education and health systems in the upstream areas lack Government development plans, and schools and clinics have many basic needs. The current education and health support program in the upstream areas, thus, is focusing on infrastructure assistance.

Stakeholder Engagement and Consultation

The Project continues to engage widely with communities, conducting 5,020 engagements with 215 communities across the Project affected areas during 2015 to date. The main issues for upstream communities were pipeline caretaking, livelihood training, community investment, road safety, and education. Plant site engagements have focused on the livelihood agricultural extension program, small business development, and health and education. PNG Haus engagement has covered drainage water awareness and served also as a means to form relationships with community leaders.

Grievance Management

Of the 53 grievances filed in 2015 to date, most are related to compensation for land, and have been found invalid and closed. Grievances related to more complex issues are taking longer to close. For future visits, the IESC would like to be informed of the reasons for delayed closure of any grievances still open after 45 days. Issues raised during 2015 to date total 2,520, many of which are positive comments regarding the Project's community development and community investment efforts and health and safety awareness programs.

Benefit Sharing

The Project recognizes that delay of the payment process caused by lack of Government funding and other distractions is a risk to the Project and, in the opinion of the IESC, is actively pursuing avenues to expedite the process. The Project continues to pay into the Royalty Trust Account established by DPE and Finance to ensure that royalty income is kept separate from other funds.

Disbursement of grant monies was halted by a national court case filed by a Petroleum Development License (PDL) 8 landowner. This resulted in application of the Alternative Dispute Resolution (ADR) process for identification of PDL 8 landowner beneficiary clans. Awareness sessions have been held for Pipeline License 4 (PDL 4) segments and LNG Plant site villages, followed by signing and gazetting of Ministerial Determinations. PDLs 9 and 4 are subject to a court case and an existing Alternative Dispute Resolution, respectively. The DPE has yet to do the vetting work in PDLs 1 and 7. In the near future, DPE will prepare Ministerial Determinations for PDLs 2, 5, and 6.

National Content – Direct Hires

The data on national content presented to the IESC during this visit is more comprehensive than the data received during the last visit. The Project has responded to the IESC request made during this October visit with a revised reporting format acceptable to the IESC. Contractors have been given national content reporting templates and instruction in how to complete them. Based on data received to date, national content statistics show 56% of direct hires, 60 % of staff contractors, and 86 % of 3rd Party Contractor staff are PNG citizens. In terms of training, all PNG direct hire O&M staff receive training in skills, procedures, and other work related aspects.

The Project has made a significant effort to recruit and train PNG females with the gender split of direct hires at 102 females and 203 males. O&M training is composed of 46 females and 126 males. Contractor staff totals 1,154 out of which 153 are female.

Labor and Working Conditions

The Project presented to the IESC a full report on the compliance of policies, procedures, guidelines, and reporting formats covering labor and working conditions to the obligations of IFC PS2, international labor standards, and PNG labor law. The information received adequately demonstrates acceptable compliance procedures for the Project and its main contractors.

The number of grievances has remained low in 2015 to date, about half of which were found not to have cause and most of the rest related to payroll such as housing compensation.

In terms of engagement with the workforce, the program has been expanded to include a variety of formats and venues. Some of the new approaches are a bi-monthly lunch series at the main office in POM (PNG Haus) featuring employee chosen topics, more frequent special company events (e.g., celebration of PNG Independence Day/Open Day for employees and families), and cultural diversity training for PNG citizens to better understand their expatriate colleagues.

The Workplace Assistance Program has a female counsellor who visits ExxonMobil Haus (main office in POM) weekly and occasionally the LNGP and HGCP sites. The IESC recommends that she make regular visits to HGCP.

ESMP Roll Out

Significant progress has been made since the last IESC visit with most of the preparatory actions completed and action plans in place to complete the remaining actions. Specific to the roll out of Labor obligations, reports using the Project provided templates have been submitted by the key contractors already trained in roll out procedures. Most have provided adequate labor and workplace and national content data and actions plans are in place to complete training and improve information provision.

Workforce Accommodation

The IESC reiterates the positive observations made in the last IESC report (June 2016) and notes that improvements continue to be made, most in response to requests from camp committees and residents. As a result of these improvements and the many informal mechanisms for making and responding to issues and requests, camp related grievances continue to be minimal and easily resolved.

Community Health

The Production Community Health Program (CHP) plans to continue the relationship established with the PNG Institute of Medical Research (IMR) and work collaboratively to better understand the disease burden of PNG and also how it can impact inside-the-fence health. Current plans are to develop a funding agreement for continuation of Integrated Health and Demographic Survey System (iHDSS) activities in 2016, to continue to work to identify health issues and disseminate results to stakeholders. A component within EMPNG's community development program with a community health focus is a partnership with Baylor College of Medicine and Texas Children's Hospital, which has improved education and training of students, physicians and nurses. Strategic focus has been to improve pediatric and Ob/Gyn patient clinical outcomes, and methods and delivery of maternal and child health services. To date more than $3 million has been invested in this program.

Occupational Health and Safety

EMPNG Production safety performance through Q3 2015 continues to be excellent. Production has not had a Lost Time Incident (LTI) since taking over from the construction team with over 10,000,000 man-hours worked as of the end of Q3 2015. The occupational health program is founded on monitoring ambient conditions and making sure that workers have appropriate protection, as would be expected for a project of this size, and is a best practice program. What makes PNG LNG special is the need for the monitoring and control of disease given the heavy outside-the-fence disease burden identified from the community health program. Infectious Disease Outbreak Management (IDOM) is a critical component of occupational health, recently supplemented by the addition of FilmArray equipment that can enhance disease diagnostics, and is helping to manage outbreaks of disease. Since the last IESC visit in May, outbreaks of norovirus and gastroenteritis have been identified and effectively managed.

1 INTRODUCTION

D'Appolonia S.p.A. (D'Appolonia), located in Genoa, Italy, was 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 ExxonMobil PNG (EMPNG), the designated Operator 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 evaluate compliance with commitments made by EMPNG within their Environmental and Social Management System (ESMS) including health and safety. The benchmark for the ESMS is now the Production Environmental and Social Management Plan (ESMP) and associated commitments made within the ExxonMobil Operations Integrity Management System (OIMS) and the documents associated with biodiversity management. As Drilling is still part of the Construction phase until the end of the drilling program, it is still governed by the PNG LNG Project Environmental Management Plan (which is bridged to as a reference document by the current 'PNG Drilling Environmental Management Plan') and also is based on the Environment Permit from the PNG Department of Environment and Conservation (DEC), currently reorganized as the Conservation and Environment Protection Authority (CEPA), that the Construction EMPs are based on.

The IESC 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 EMPNG, 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 EMPNG. Emphasis has been placed on evaluating conformance based on written information provided by EMPNG and observations made in the field including discussions with EMPNG 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.

An activity that does not fall under the category of "monitoring" yet is within the scope 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 provide a non-Project certification for the acceptance at the LNG plant waste management area of soil contaminated with hydrocarbons originating from the refurbishment of Mobil service stations. As this soil will be removed or re-used upon remediation, it does not inhibit the ability of EMPNG to implement the ESMP and certification was provided during this field visit. In any case, subsequent information provided after the IESC field visit is that it did not prove necessary to landfarm contaminated soil at the LNG Plant site, as on-site treatment at the Mobil retail sites proved successful.

[1] *IESC Team members in the field: William J. Johnson (Field Team Lead - Earth Scientist/EHS Management System Specialist), Kerry Connor (Social Development Specialist), Louise Johnson (Biodiversity and Natural Resource Management Specialist)). IESC Team members not in the field: Giovanni De Franchi (Project Manager and Team Lead).*

1.1 PRODUCTION OPERATIONS OVERVIEW

Production continues stable operations reflected by steady-state fuel and flare volumes and the HGCP process gas from eight online wells (B1, B2, C1, C2, D1, D2, G1 and G2). HGCP continues to provide gas within the requirements of the LNG Plant. Condensate production is steady. The supply of gas from Associated Gas Fields has proved more than expected and OSL's South East Gobe gas has recommenced. EMPNG has successfully completed intelligent pigging of the condensate pipeline.

At the time of the IESC field visit, more than 130 LNG cargos had been shipped from the LNG Plant jetty representing the export of more than 10 million tons of LNG with 1.89 million tons of LNG associated with 26 LNG shipments produced in Q3 2015 alone. The first loading of the recently built Southern Cross LNG carrier took place in August and EMPNG's second custom-built LNG vessel is on schedule for delivery in April 2016.

A new activity associated with Production took place on April 1 when EMPNG signed a non-binding memorandum with the PNG Government to supply up to 25 megawatts of electricity for local use (surplus generating capacity from two Solar Titan 130 units at the LNG Plant) with a commitment for long-term gas supply to a new state-owned gas-fired power generation unit to be built near the LNG plant. On June 27 power was supplied to the PNG grid. Construction of a new plant is yet to be scheduled.

The only drilling activity taking place is at the Angore A2 well with Rig 702, which recently completed Angore A1. Rig 703 is completely demobilized. Angore A2 drilling activities are expected to be completed during Q4 2015, after which Rig 702 will be demobilised. A schedule to construct the tie-in pipelines between the HGCP and Angore Wellpad A has not been established.

Moro Camp B is now expected to remain with Production. Komo Airfield Camp is still a Production asset, but is currently occupied and operated by PNG Defense Force caretaking personnel whilst arrangements for transfer of this asset to the PNG Government are finalized. Nevertheless, there are components of the Komo Camp that are being demolished and removed. The old C1 Camp at Hides has been demobilized.

Construction at the 28 Ha Permanent Facilities Compound (PFC) near the Port Moresby Airport is complete except for a few interior details. EMPNG completed the move to this new facility in August. The design intent of the PFC has been with the intent of receiving Leadership in Energy and Environmental Design (LEED) certification. Characteristics in favor of LEED certification include: solar panels for hot water; lighting motion sensors/timers; energy efficient windows/shades; insulated, airtight walls; hot and cold drinking water taps to encourage use of reusable cups; onsite water treatment plant treats sewage water for irrigation use; and landscaping with indigenous plants that require less water to grow.

The Project workforce is currently slightly more than about 2,100 with Papua New Guineans making up about 74 percent of the Project workforce.

1.2 SOURCES OF INFORMATION

The main sources of information used to prepare this fifteenth IESC trip report are primarily those provided by EMPNG, but D'Appolonia also obtained information by means of interviews with local stakeholders during the field visit in PNG as well as EMPNG employees. The information provided by EMPNG 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 – Biodiversity and Ecological Management;
- Section 6.0 – Social;
- Section 7.0 – Labor and Human Resources; and
- Section 8.0 – Health and Safety.

The Cultural Heritage discussion presented in previous reports has not been included. Production Operations have not had any chance finds, nor has there been any news to report, except that cultural heritage sites identified within the Project GIS are being checked in the field by the teams evaluating focal

habitat and there is nothing special to report. 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. Significant 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 applicable Project documents 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 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.

º	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
Environmental Management – Environmental and Social Management System (ESMS)							
[2]M14.1	May '15	Oct' 15	Our overall impression is that Production startup has been generally smooth, but the rollout of the ESMP has been slow. We have not identified any adverse consequences to this slow start, but the system is especially late in going to contractors.	IESC Observation	ESMP	Closed	Since the last IESC visit, EMPNG has undertaken considerable effort to roll out to contractors the ESMS as defined in the Environmental and Social Management Plan (ESMP) and this effort has been effective. Overall, our impression is that EMPNG is now at an appropriate stage in terms of disseminating ESMP requirements to contractors. There is still more to do, but the systems are in place for contractors to fulfill their ESMP requirements. What remains to be developed is a reporting system such that contractor ESMP performance can be evaluated and tracked. A standard reporting template has been developed to facilitate this process and contractors are now required to submit ESMP compliance information, a process expected to be refined as data are gathered.
Environmental Management – Erosion and Sediment Control							
M13.1	Oct' 14	Oct' 15	Erosion and sediment control along the pipeline RoW and Well Pads appears to have been well undertaken. Erosion and sediment control at the Komo Airfield and to a lesser degree at the HGCP have not been as well managed.	IESC Observation	EMP Section 13.0	Closed	Significant progress has been achieved in terms of completing the erosion and sediment control infrastructure at the locations where progress had been slow, in particular the Komo air field, but also at the HGCP and Well Pad G. It is expected that these systems now just require routine maintenance to be effective.
Environmental Management – Wastewater Treatment							
M14.2	May '15	Oct' 15	Wastewater treatment continues to be an ongoing challenge. Although the lack of performance is not associated with major environmental impact, performance is not consistent with the requirements of the EMP.	I	EMP Section 9.0	Closed	Overall, the effort to improve WWTP performance has been effective. Environmental discharges from these plants are overwhelmingly compliant, except it is apparent that the Moro Camp B WWTP will need to be replaced and HQ3 WWTP will need to be removed. There is still work to do, but the proof of the effort is with respect to environmental releases. In only one case between April and September 2015 did a discharged effluent exceed the discharge standards

[2] *In order to better track project progress and accomplishments, the issues identified during each site visit are identified by a letter (M) and number (e.g. M1) that identifies the site visit (e.g.: M1 for the first visit, M2 for the second visit, etc.) followed by a digit that identifies the specific issue found (e.g. M14.1 refers to issue 1 found in visit 14).*

º	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
							(BOD from the HGCP in August). This is significant improvement.
Environmental Issues – Biodiversity and Ecological Management							
M12.1	June '14	Oct' 15	EMPNG's commitment is to control access to project roads and infrastructure, so as to prevent potentially damaging 3rd party activities through enhanced access. EMPNG access controls for Above Ground Installations and project roads/infrastructure are discussed as part of each IESC visit. The EMP states that access will generally be allowed only to EMPNG vehicles; other vehicles will be sanctioned subject to prior approval by EMPNG. A Vehicle Monitoring Plan (VMP) has been developed for situations where EMPNG has manned boom-gates. We observed instances of insufficient access control, where current practice in not in compliance with that stated within the Upstream EMP.	I	Upstream EMP Section 17, Vehicle Monitoring Plan and IFC Performance Standard 6	Closed	Building on the earlier Observations and then a Non-Conformance in our last report, EMPNG has reviewed their procedures with regard to Access Monitors at manned boom-gates, enforcement of those procedures, and revised the Induced Access Protocol so that the vehicle approval/risk process is updated. The EMP is being updated and will reflect the amended process in due course. Although the IESC do not necessarily agree that the revised access management procedure equates to 'preventing' access, we accept that a combination of recording and analyzing road use, regular community liaison, effective RoW monitoring (PMA-2), and timely analysis of remote sensing data (PMA-1) should in theory be sufficient to detect any potentially damaging third party activities were they to occur. During data analysis, any vehicles not previously recorded on the road are subsequently assessed as to whether they are likely to pose an increase induced access risk, and follow up dialogue undertaken. We therefore believe EMPNG is doing a reasonable job in a difficult situation, and following the company's review of their internal processes, we feel it is fair to close the Non-Conformance. As negotiations with the PNG government continue on the transfer of certain company infrastructure, this will continue to be a key focus area for IESC in the future. (Report reference Section 5.3.1)
M14.3	May '15	Oct '15	The PNG LNG project is sited within Critical Habitats as defined according to IFC PS6 (2006). EMPNG has committed to 'No Net Loss' of biodiversity to address their residual impacts and have developed an offset program. Offset Framework and Delivery Plan documents have been developed, with first	I	IFC Performance Standard 6 and Biodiversity Strategy	Closed	Following extensive discussions between the PNG Biodiversity team, Exxon Mobil technical specialists and the IESC, EMPNG has reassessed the technical rationale behind their offset program against international good practice, and are modifying their approach to their offset framework. This will be presented publically in an amended Biodiversity Strategy shortly. The modified approach includes: - Clarification of the approach to offset accounting with respect to quantitative measurement of

º	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
			drafts seen by IESC in 2012, and updated revision early 2014. The IESC has continually highlighted key areas where EMPNG's approach does not meet generally acknowledged and accepted conditions for offset programs.				biodiversity losses and gains, and demonstration of progress towards achieving NNL. - Consideration of the the use of the Broad Vegetation Group classification within elevation zones as a means of demonstrating representativeness between biodiversity lost and gained. - Further consideration of how to demonstrate additionality, including at a site level. - Acceptance that the offset program (and thus maintenance of conservation gain once NNL has been achieved) for at least the duration that the residual impact exists. We therefore feel it is appropriate to close the Non-conformance as the conversation now changes to how the modified approach will guide the continued design and implementation of the offset program.
M14.5	May '15	Oct '15	As above, EMPNG is undertaking an offset program so as to ensure 'No Net Loss' of biodiversity. The company is progressing five main components as part of the program. Each component has a work-plan so as to achieve individual objectives within the desired timeframe. Each of the components of the offset program is showing ongoing delays in development and/or implementation.	I	IFC Performance Standard 6 and Biodiversity Strategy	Closed	Since our last visit, EMPNG has focused on internal contractual issues, have deployed additional on-the-ground resource staff to help with Lake Kutubu protected area enhancement implementation, have reassessed NGO partner capacity to manage offset program components, and have secured additional personnel to help with NGO delivery capacity. We therefore consider that this Non-Conformance can be closed. (Report reference Section 5.2.1.2)
M15.1	Oct '15		The accidental introduction of alien species into new areas can be a significant threat to biodiversity, since some species can become invasive, spreading rapidly and out-competing native species. This is especially important in areas of widespread disturbance where weeds can become quickly established. The containment of priority 1 weed species, especially those known to be highly invasive with the capacity to establish and persist in a variety of habitats, is paramount. In recent external weed audits, a number of	IESC Observation	IFC Performance Standard 6, Biodiversity Strategy and EMP Section 15	Open	The latest weed audit has highlighted several areas of concern in the continued spread and increase in abundance of a number of P1 weed species. The ongoing spread of certain weeds between weed management zones noted in successive audits indicates the RoW and road to be a pathway for the spread of Priority-1 species between lowland and upland areas, in addition to the other means of spread (birds, walkers, etc). The proximity of communities to the RoW and other facilities and infrastructure brings additional risks to the management of weed distribution, abundance and diversity. Recognizing the importance of preventing further spread into a vulnerable lake ecosystem, EMPNG has worked with

º	Site Visit	Closing Date	Description	Non-Conformance	Reference	Status	Comments / Report Reference
			P1 weeds have been shown to be expanding their range moving through several Weed Management Zones through the Upstream area.				BioTropica to develop a weed management plan specifically for the Lake Kutubu area, which we are told is about to be implemented. The company continues to consider weed management a high priority, but more could still be done. The role of Weed Management Zone 3 (between Kaiam/ Kikori River and the Mubi River) as a quarantine/buffer has not been as effective as hoped in preventing the spread of weeds between the lowland and upland/highland sections of the project's footprint. EMPNG advise that Gobe MLV has the highest number of P1 weeds with increased abundance. Additional weed management focus is required within this zone to re-establish it as a quarantine buffer. (Report reference Section 5.5.1.1)

3 ENVIRONMENTAL AND SOCIAL MANAGEMENT

3.1 ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM

The cornerstone to the Environmental and Social Management System (ESMS) for the PNG LNG Project is the Environmental and Social Management Plan (ESMP) for Production, which, along with the Biodiversity Strategy and associated documents, define EMPNG's environmental and social commitments. The Construction ESMP has applicability only with Drilling. As Drilling is still part of the Construction phase until the end of the drilling program, it is still governed by the PNG LNG Project Environmental Management Plan (which is bridged to as a reference document by the current 'PNG Drilling Environmental Management Plan') and also is based on the Environment Permit from the PNG Department of Environment and Conservation (DEC), currently reorganized as the Conservation and Environment Protection Authority (CEPA), that the Construction EMPs are based on. The last remaining Construction phase requirements, the Milestones Schedule and the Lender Environmental and Social Requirements (LESR), are no longer applicable. The last LESR requirement was fulfilled with the Resettlement Completion Audit, now complete. Specific Lender requirements that were specified in the LESR, such as the definition of Management of Change, are now incorporated within the Production ESMP. The Milestones Schedule was fulfilled with D'Appolonia's signing of the Completion Certificate.

The two EMPs that form part of the Production ESMP are supported by a set of implementation documents (Protocols, Registers and Templates). These supporting documents provide the detail of what needs to be done on the ground to fulfill the commitments defined in the EMPs. Rollout of these completed tools commenced early March 2014, but as of May 2015 many had still not been finalized. At the time of this field visit, nearly all are finalized or otherwise in use, with the exception of the biodiversity documents currently being revised.

While EMPNG retains responsibility for all ESMP obligations, several are executed via third-party contractors. The rollout of ESMP requirements to contractors started slowly, but since the last IESC field visit has accelerated and the "Observation" that the process is overly slow has been removed from the Issues Table. Since the last IESC visit, EMPNG has undertaken considerable effort to roll out to contractors the ESMS as defined in the Environmental and Social Management Plan (ESMP) and this effort has been effective. Overall, our impression is that EMPNG is now at an appropriate stage in terms of disseminating ESMP requirements to contractors. There is still more to do, but the systems are in place for contractors to fulfill their ESMP requirements. What remains to be developed is a reporting system such that contractor ESMP performance can be evaluated and tracked. A standard reporting template has been developed to facilitate this process and contractors are now required to submit ESMP compliance information, a process expected to be refined as data are gathered.

Organizationally, the divisions dedicated to managing environmental labor and community issues have basically stayed the same as previously reported from the IESC visit in May 2015.

3.2 MANAGEMENT OF CHANGE

Since the May 2015 IESC field visit, there have been no MOCs of significant environmental or social impact, but two are pending. At the time of the field visit in May 2015, the most significant pending MOC related to the Government requests to acquire Project infrastructure. The IESC recommendation was for EMPNG to start with certain processes associated with an MOC:

- Identification of risks and specific areas of risk; and
- Identification of possible mitigations, most of which will involve working with Government, possibly in the context of regional development planning; identification of changes to existing mitigations that may be required (e.g., weed management and induced access); possible changes/additions to current biodiversity offset plans depending on risks.

These tasks have been undertaken by EMPNG and aspects of the turnover of these assets to the PNG Government represent high risk to EMPNG's ability to fulfill its ESMP commitments. No formal discussions with the Government have taken place since the last IESC visit and the Government road construction that would tie in with the Kikori Bridge (Erave – to – Samberigi road) has stalled. The timing for engaging with the Government will likely be related to the completion of the road segment. It is expected that the MOC will be finalized after the negotiations with the Government. As previously noted, this is also an issue where direct dialogue with interested Lenders could be beneficial, as induced access was one of the biggest concerns associated with Project financing.

The Production ESMP is currently in a Revision 0 (R0) stage issued for use in September 2013. As there are several aspects of EMPNG that have changed since the development of R0, plans are in place to develop R1. Major changes are not expected, but some obvious changes are needed. The intent of developing Revision 0 of the ESMP is to reflect experience gained and lessons learned since the start of Production. Plans also need to be updated to reflect the changing needs of EMPNG operations and conditions in PNG. Examples of changes that will be considered for ESMP Revision 1 include:

- Updates to EMPNG organizational structure;
- Clarification of clauses or statements; and
- New content, changes or deletions related to environmental management practices.

The actual changes to be implemented within the ESMP revisions will involve separate MOCs, depending on their significance consistent with the degree of the change ranging from the correction of typographical errors to Lender Classification Levels 1/2/3. The revision process consists of having the different work groups submit change requests. These changes are not automatically approved, but need to be reviewed and endorsed by the appropriate ESMP Owner and relevant impacted parties. Proposed changes will be cross-checked against all relevant legal, OIMS, Regulatory and other obligations and commitments. Higher significance changes will require approval from Lenders and/or Regulators. The new ESMP is expected to be developed by Q2 2016.

3.3 INCIDENTS

Since the last IESC field visit there has been one incident where community members around Hides locked the gate at the HGCP and undertook a peaceful four-day protest, not against EMPNG, but related to Government benefits.

During the field visit, the IESC observed during a helicopter flyover an area near the pipeline ROW between the HGCP and Angore where there were about 100 houses burned to the ground. This incident apparently took place in July of this year and was related to a clan conflict where about a half a dozen people were killed.

In terms of environmental incidents, there have been no significant spills and the only Corporate Reportable incidents were minor, related to small oil and chemical spills to ground, minor atmospheric releases and water quality discharges, and a small sewage release (less than one barrel). Equipment failure and performance remain most common cause of incidents.

3.4 EMERGENCY RESPONSE

The emergency response system is fully in place in terms of plans and procedures, equipment and personnel. The overall scope of activities relate to maintaining readiness to respond to an emergency, as reflected in a well-developed program of training and drills. An aspect of emergency response where the emergency response teams have had to respond is with respect to grass fires. At the time of this IESC field visit, all of PNG was experiencing severe drought and there were numerous fires for the most part deliberately set by locals to remove underbrush. Where these fires have encroached Project facilities, it has been necessary for the fire fighters to respond. Burned areas near the HGCP could be observed to have reached the perimeter fence.

4 POLLUTION PREVENTION

4.1 WASTE AND WASTEWATER MANAGEMENT

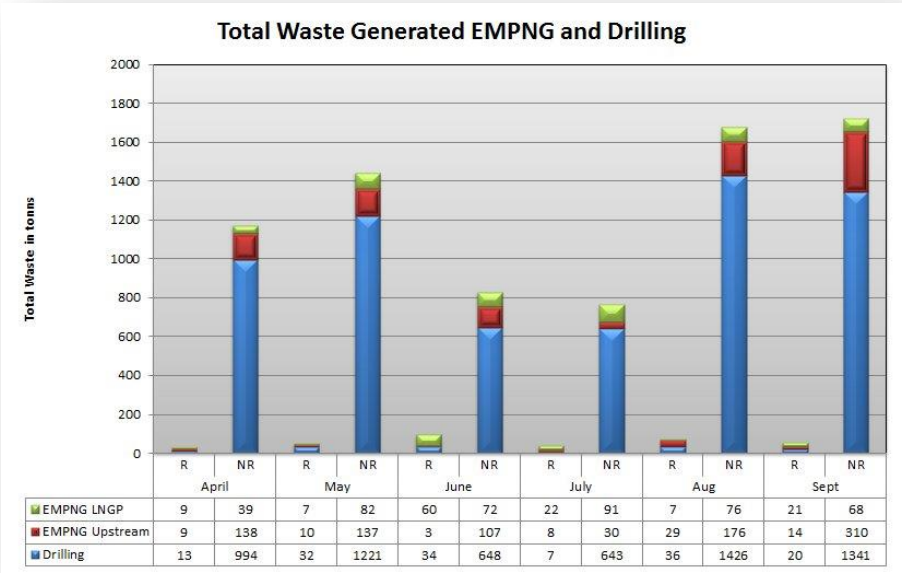
4.1.1 Project Strategy

EMPNG's objectives are to apply the waste management hierarchy (wastes will be preferentially and sequentially avoided, reduced, reused, recycled or recovered) and to dispose all wastes at EMPNG facilities and approved third party facilities only. EMPNG's objectives are also to avoid significant impacts associated with the release of pollutants to surface water and groundwater and meet applicable discharge criteria. These applicable discharge requirements are those tabulated in Chapter 9 of the Upstream and LNG Plant EMPs.

4.1.2 Observations

4.1.2.1 Waste Management

Waste continues to be well managed. The first landfill cell at the Hides Waste Management Area (HWMA) is full and waste is being placed in the second cell, primarily with the last of the construction demobilization waste, including material from C1 Camp. There is still some material pending disposal from Komo Camp, although the Main Camp is occupied by PNG Defense force personnel and is not planned for demolition. Over the period of June through September 2015 the total generation of non-hazardous waste was about 5,000 tons, about half of the waste stream generated by the demolition of camps in the first two quarters of 2015. About 80% of these wastes were from Drilling. This waste stream will cease as drilling activities end (expected by the end of 2015). EMPNG has already accepted more than 800 tons of surplus materials (cement and sodium chloride) from Drilling. The industrial incinerator at the HWMA continues to operate with no major issue. This incinerator may become the permanent incinerator for production waste, but a final decision will be made only after a cost-benefit analysis.



	April		May		June		July		Aug		Sept	
	R	NR	R	NR	R	NR	R	NR	R	NR	R	NR
EMPNG LNGP	9	39	7	82	60	72	22	91	7	76	21	68
EMPNG Upstream	9	138	10	137	3	107	8	30	29	176	14	310
Drilling	13	994	32	1221	34	648	7	643	36	1426	20	1341

Figure 4.1: Project Waste Profile (April through November 2015)

As noted in Section 1.0, EMPNG plans to undertake landfarming remediation of soil contaminated with hydrocarbons originating from the refurbishment of Mobil service stations at the LNG plant waste management area. At the time of the field visit, it was thought likely that the currently empty landfill Cell C would be used for this effort, but based on information provided after the visit, the landfarming took place at the Mobil service stations and it was not necessary to bring this material to the LNG Plant site. In any case, IESC certification was provided during this field visit under the assumption that the soil would be removed or otherwised recycled.

4.1.2.2 Wastewater Management

Significant effort has been placed in upgrading the systems for wastewater treatment. Full plant change-outs have been made at three out of six of the operating WWTPs and equipment and operational changes have been made at the other three sites. The permanent Tri-Star WWTP at the HGCP main camp is operational and functioning well. The new Komo Red Fox WWTP was commissioned on June16 and the Angore rotating biological contactor or RBC units were replaced with three Red Fox units between April and September 2015. Significant effort has been placed to improve the performance of the old construction-phase WWTPs at Moro Camp B and HQ3. While some improvement in performance has been achieved, the HQ3 system is about to be decommissioned and the Moro Camp B unit will be replaced before the end of the year. The WWTP at the LNG Plant continues to function as designed. Additional details are provided in Table 4.1

Table 4.1: Status of WWTPs

Location	Description and Status	Operational Summary
HGCP	**Full plant change-out** Tristar SBR brought into service 10 Sept. Chatoyer SBR shutdown 27 Sept. Operating.	Tristar STP in full service. Using Chatoyer plant balance tank for extra control of hydraulic loading.
Komo	**Full plant change-out** Red Fox STP commissioned 16 June. Operating.	Plant now stabilized following commissioning and Vendor visit, operator training, and system adjustments. Alum and nutrient dosing supporting improved performance.
Angore	**Full plant change-out** 2 x RBC units fully decommissioned. 3 x Red Fox RF 5000C units installed in parallel. Completed April-September. Operating.	Chlorine contact retention time improved with additional tanks. Reduced detergent use by ~50%. Increased cleanout frequency of grease traps. Alum addition recently commenced to reduce TSS. Site access disruptions continue to impact water quality monitoring.
HQ3	Red Sea Housing RSHS-STP-300. Operating.	Chlorine contact retention time improved with additional tanks. New weir skimmer fabricated and installed into clarifier tank. Reduced detergent use by ~50%.
Moro B	Red Sea Housing SAC - 500. Operating.	De-sludging program implemented. Alum addition commenced to address intermittent high TSS. Multiple internal integrity issues remain (esp. aeration system)
LNGP	MBR STP. Operating.	3rd party consultant review of process inputs in progress (plant discharges to LNG Retention Pond)

Overall, the effort to improve WWTP performance has been effective and the Level 1 non-compliance assigned at the time of the last IESC visit is rescinded, except it is apparent that the Moro Camp B WWTP will need to be replaced and HQ3 WWTP will need to be removed. There is still work to do, but the proof of the effort is with respect to environmental releases (see Figure 4.2). Environmental discharges from these plants are overwhelmingly compliant. In only one case between April and September 2015 did a discharged effluent exceed the discharge standards (BOD from the HGCP in August). This is significant improvement.

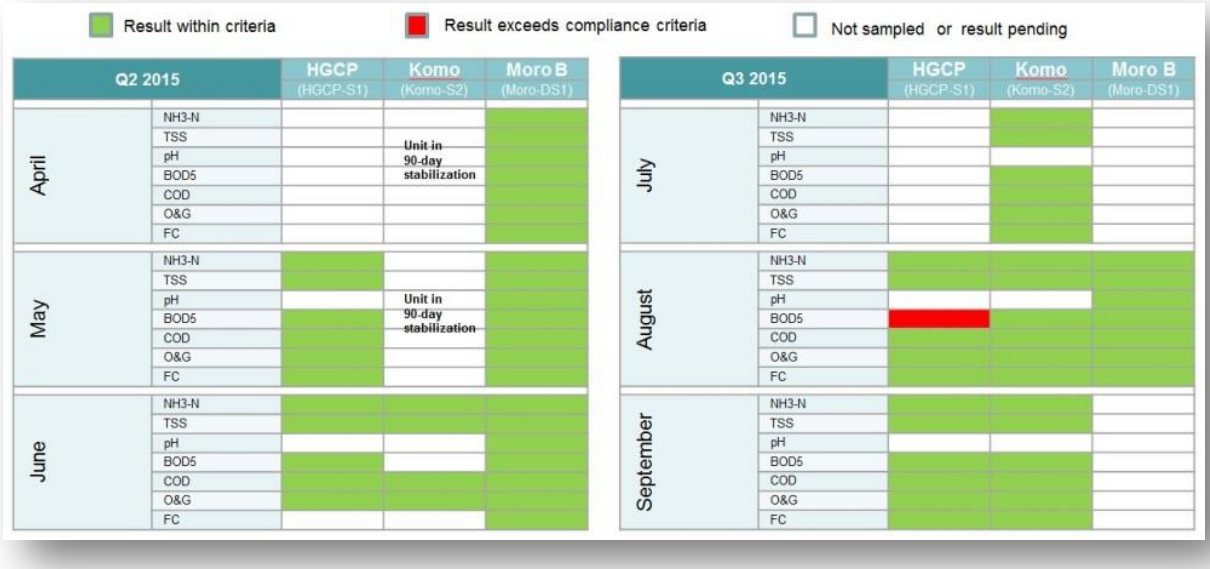


Figure 4.2: Project Environmental End-of-Pipe Discharges

4.1.3 Recommendation

1. For long-term wastewater management, evaluate what has worked best in the past. The WWTP system at the LNG Plant has worked effectively throughout the course of the Project. Other systems have not worked as well. Evaluate what has worked best and try to apply this knowledge into developing the long-term wastewater treatment solutions in the Upstream part of the Project.

4.2 HAZARDOUS MATERIALS MANAGEMENT AND SPILL PREVENTION

4.2.1 Project Strategy

EMPNG's objectives are to prevent spills of hydrocarbons and chemicals and to respond effectively to spills should they occur. EMPNG also has standards for materials management where objectives are to avoid significant impacts associated with the procurement and use of raw materials and to use materials that are less hazardous or otherwise preferable from an environmental perspective, where practical.

4.2.2 Observations

Spill prevention continues to be effective. There have been no reportable spills (>1 barrel) for more than a year. Spill records continue to be properly maintained and spill response training continues to takes place across the Project. 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 AND NOISE

4.3.1 Project Strategy

EMPNG's objectives are to avoid significant impacts associated with the release of pollutants to air and meet applicable emissions and air quality criteria. Requirements for noise control are those identified in the IFC General EHS Guidelines.

4.3.2 Observations

Air emissions are now a routine aspect of environmental management for Production. At the HGCP, major emissions sources include: compressor gas turbine exhausts; main power generator exhausts; the MEG (monoethylene glycol) Vent Gas incinerator; diesel generators; as well as the two waste incinerators, one at

the HWMF and the other at the HGCP. At the LNG plant the main sources of air emissions include: compressor gas turbine exhausts; main power generator exhausts; regeneration gas furnace exhausts; and hot oil system furnace exhausts; as well as the waste incinerator. Three rounds of stack testing have been completed. The last round of testing was completed in September 2015. Preliminary results show that all units are performing within EMP criteria. In particular, HGCP generators performed well below the NOx limit at between 30-35 ppm and two sets of stack test results now show that the generators are below the NOx limit of 42 ppm, where a slight exceedance was reported in the first round of testing. Stack emissions testing is planned to take place in October 2015.

At the time of this field visit, PNG was in the middle of a major drought. Dust was a problem at all areas visited, although it is recognized that EMPNG does undertake road watering. Greenhouse gas emissions, fuel consumption and flaring emissions are reported in the bi-annual EMPNG Environmental and Social reports to the Lenders and the results are not repeated here.

Noise monitoring identified an exceedance at the perimeter fence near the HGCP WWTP (although not at the nearest residents from the fence), where the nighttime noise limit of 45 dB(A) was exceeded. With noise suppression added to the blowers, the noise level is now 43 dB(A). EMPNG showed good response in resolving this noise issue.

4.4 EROSION AND SEDIMENT CONTROL

4.4.1 Project Strategy

EMPNG's objectives are to control significant erosion and prevent sedimentation of surface waters.

4.4.2 Observations

Significant progress has been achieved in terms of completing the erosion and sediment control infrastructure at the locations where progress had been slow, in particular the Komo air field, but also at the HGCP and Well Pad G. The mitigation of erosion and sediment control systems along the pipeline ROW had already reached the stage of undertaking routine maintenance by the time of the May 2015 field visit, but it is IESC's opinion that at that time EMPNG was still trying to catch up with problems that threatened to worsen at the Upstream AGIs. A comprehensive erosion and sediment control system has been completed at Komo (see Figure 4.3). The initial steps to finalize erosion and sediment control measures around the HGCP and at Well Pad G have been completed. It is expected that these systems now just require routine maintenance to be effective.

Figure 4.3: Newly Constructed Drainage at Komo

5 BIODIVERSITY AND ECOLOGICAL MANAGEMENT

5.1 INTRODUCTION

This section provides a record of IESC Observations and Recommendations associated with EMPNG's ecological management (terrestrial, marine and freshwater) including: the ecological monitoring of areas potentially impacted by the project to ensure the Biodiversity Strategy is being adequately implemented; the planning and implementation of the biodiversity offset program (to address those residual impacts remaining after impact avoidance and mitigation); the reinstatement and regeneration of areas cleared by the Project, including the Right-of-Way (RoW), camps, quarries, etc.; the management of issues related to invasive species, pests and plant pathogens (including quarantine management of imports); and the avoidance of project-related induced access resulting from the construction/retention of roads and RoW corridor.

The whole Upstream Project area is deemed to be Critical Habitat, in accordance with IFC Performance Standard 6 (2006)[3]. EMPNG's overall strategy for biodiversity and ecological management is described in the Biodiversity Strategy and Production-phase EMPs, along with other associated documents.

Records from the EIA baseline studies and the Pre-Construction Surveys (see previous IESC reports for background) serve to establish the ecological conditions prior to ground clearance or infrastructure development. These records include information on the presence of weeds, and the locations of focal habitats and ecological sensitivities such as (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 50m 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*). These detailed records have been compiled into a Register of Focal Habitats and Ecological Sensitivities. This Register is being supplemented by information related to post-construction and current ecological conditions through monitoring studies and surveys.

5.2 ECOLOGY AND BIODIVERSITY STRATEGY

EMPNG's objective is to avoid impacts to specific features of ecological importance. The Biodiversity Strategy was developed to guide the long-term management of terrestrial and freshwater biodiversity within the Upstream area. The Strategy provides an overview of EMPNG's overall approach to mitigating impacts on biodiversity in alignment with the standard avoid, reduce, remedy, offset mitigation hierarchy The goal of the Strategy is to retain the biodiversity values of the Upstream Project Area on a regional scale for the long term. In order to achieve the overall goal, the following objectives have been defined:

- to maintain the ecological intactness of the Upstream Project Area as a whole;
- to conserve the priority ecosystems;
- to protect focal habitats; and
- to account for residual impacts.

In order to achieve these objectives, avoidance, mitigation and monitoring of biodiversity values take place at three levels:

(i) The large scale, which is the entire Upstream Project Area;

(ii) The medium scale, which is represented by particularly valuable areas referred to as 'priority ecosystems'; and

(iii) The small local-scale, which are sensitive habitats referred to as 'focal habitats'.

The Biodiversity Monitoring Program (BMP) comprises four Programmed Monitoring Activities (PMAs) to ensure effective implementation of the Strategy. The PMA's 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;

3 *IFC Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management (2006)*

- PMA-2 Condition Surveys, designed to monitor focal habitats, reinstatement and erosion control works, control of access and community encroachment, and the potential spread of invasive species and disease along the ROW and at facility/infrastructure sites (through aerial and ground-access);
- PMA-3 Specialized Biodiversity Surveys, designed to collect and analyze flora, fauna and ecosystem data so as to support findings of PMA-1 and PMA-2, both in/around areas affected by the project and in protected areas enhanced and/or established through the offset program; and
- PMA-4 Efficacy of Offset Projects, to be tailored to monitor the outcomes of each biodiversity offset project.

To address residual impacts on critical habitat, and in accordance with the Biodiversity Strategy, EMPNG has developed an Offset Delivery Framework and Plan, providing detail on offset design and implementation.

5.2.1 Observations

5.2.1.1 Biodiversity Strategy including offsets

The Biodiversity Strategy, along with the existing Biodiversity Offset Delivery Plan, Framework for Biodiversity Offset and Biodiversity Monitoring Plan documents, are currently undergoing extensive review and update. EMPNG's biodiversity offset framework and program will now be incorporated into a re-written Biodiversity Strategy document, and is to be published on the external website. The original Biodiversity Strategy document, which has been publicly available, will be archived; the intention is this will continue to be made available electronically to anyone that requests it. The original Biodiversity Monitoring Plan is being revised into the Biodiversity Implementation and Monitoring Plan (BIMP), and will also be published on the external website. The IESC commends EMPNG's intention to make publicly available an expanded suite of information on how the Biodiversity Strategy is being implemented. The IESC is currently reviewing the updated documents and will provide feedback to EMPNG.

Offset Framework & Technical Rationale

To compensate for the PNG LNG project's residual impacts, and to comply with IFC Performance Standard 6 No Net Loss requirements, EMPNG continues to develop their biodiversity offset program. In the IESC's last report, we raised a Level-1 Non-Conformance (see Issues Table) as a result of our ongoing concerns on elements of the framework that underpin the company's offset approach. Following extensive dialogue between EMPNG and IESC, and recent workshop discussions to constructively reach a better understanding of international good practice and practicality of offsets within PNG, the company has reviewed aspects of the framework technical rationale. These include:

- Accounting for No Net Loss (NNL): the company has revised its approach to offset accounting to quantitatively demonstrate biodiversity losses and gains (to complement qualitative performance indicators), and thus be in a position to demonstrate overall NNL. Predicted losses and gains have been tabulated over a timeframe reflecting the duration of residual losses and the schedule of anticipated gains. The modified approach is to be made publicly available once the revised Biodiversity Strategy document is finalised.
- Like-for-like losses and gains: the IESC has stated previously its view that only using total loss and gain within each elevation group (0-600m, 600-1200m, above 1200m) was insufficient to adequately ensure equivalence in biodiversity losses and gains. EMPNG recognises that a smaller land unit is useful for monitoring forest condition and that the concept of Broad Vegetation Groups (BVG) is one such classification system established in Papua New Guinea. EMPNG is therefore evaluating the potential to use a smaller-scale land unit, such as Broad Vegetation Groups, for refining representativeness. The IESC believes that such an approach will allow gain to be more directly comparable to losses within each zone (as per the approach detailed in the PNG LNG ESIA Appendix 1, Estimating Habitat Losses[4]). Assessing losses and gains by BVG within each elevation zone will also help to identify those offset sites which are more likely to help deliver the type of conservation gain required to ensure NNL.

4 *EIS Appendix 1 available at www.pnglng.com/commitment/environment/eis.html*

- Additionality: the revised Biodiversity Strategy will describe in more detail EMPNG's approach to additionality in general terms (i.e., how EMPNG intends that each offset project chosen will provide conservation gains that are in addition to those that would occur anyway) and how it intends to achieve this at the site level. .
- Longevity of offset program: EMPNG has committed to the offset program (and thus maintenance of conservation gain once NNL is achieved) continuing for the duration that the residual impact exists. Governance options are currently being discussed. Long-term financing options will be determined in due course. Both topics will be the subject of future IESC discussions to ensure the sustainability and transparency required for such an offset program.

The IESC commends the way that EMPNG has reviewed their approach regarding the fundamentals of their offset framework since our last visit. EMPNG has had extensive discussions with internal technical specialists and reassessed the program against international good practice. We therefore feel it is appropriate to close the Level-1 Non-Conformance issued in our previous report, and look forward to continued constructive dialogue on how the revised approach will guide the continued design and implementation of the PNG LNG offset program.

Offset Program Design and Early Implementation

EMPNG has provided an update on the ongoing design and implementation of offset program components:

- Component 1: Kikori-wide landscape scale. This component seeks to assist CEPA in meeting its international Convention on Biological Diversity (CBD) commitments via production of a 'Protected Area Plan' for a Kikori-wide river basin, that in subsequent offset planning phases can be taken forward for implementation:
    - Update: Contractual negotiations with Wildlife Conservation Society (WCS), as lead component partner, are now complete and the agreed scope of work can commence. WCS will consolidate and map a range of existing geo-spatial data (conservation/settlement/resource use/road & infrastructure) into a single database in order to identify data gaps and model conservation priorities.
- Component 2: Support to CEPA to achieve 'actions for improvement' of the National Biodiversity Strategy and Action Plan (NBSAP). EMPNG will support the re-establishment of the bi-annual Conservation Forum for PNG NGOs:
    - Update: EMPNG is providing additional resources to ensure delivery of the conservation-focused newsletter, which will be published to coincide with the first of the supported external Conservation Forum Meetings (to be held before year end). Mama Graun is now leading on delivery of the newsletter, whilst IBR will remain as lead on the Conservation Forum meetings.
- Component 3: Enhancing conservation capacity. EMPNG's support is focused on developing and institutionalizing Post-Graduate and Diploma courses at University-PNG (U-PNG), providing scholarships, and establishing a framework for placements and mentorships with field-based conservation NGOs:
    - Update: delays continue with regard to finalizing the EMPNG-supported modules with U-PNG. We are advised that scholarship terms of reference are currently being developed, that candidate interviews are imminent, and that two scholarships are expected to be awarded by year end.
- Component 4: Support for existing protected areas. Enhancement of the Lake Kutubu WMA (Wildlife Management Area) is the primary focus for achieving this component. The Project's Lake Kutubu WMA Enhancement Plan (WMA-EP) contains three work streams: conservation design and WMA Management Plan; enhancing organizational capacity; and local and provincial government land use planning.
    - Update: the WMA-EP Coordinator contract is now finalized and the contractor in place to work with the Lake Kutubu WMA Committee to implement the Enhancement Plan. In addition, IBR, the component lead partner, is arranging forthcoming community workshops with and initiating the Ecosystem Services analysis.
    - As highlighted previously, the presence of tilapia in Lake Kutubu may have significant consequences on EMPNG's ability to achieve the necessary conservation outcomes within the

WMA offset component. One of the primary reasons for a WMA being established at Lake Kutubu was the unique lacustrine ecosystem and endemic fish population. The IESC believe it is in EMPNG's interest to better understand the implications of tilapia for the ongoing health of the lake ecosystem (see recommendation in previous report).

- Component 5: Establishing new protected areas.
  1. At the Lower Elevation Zone EMPNG's intention is to engage with communities to establish a Lower Kikori Resource Use Management Plan (LKRUMP), to offset residual impacts in this zone (0-600m),. The creation of a new community-based, legally-designated protected area will build on the existing Aird Hills WMA as a nucleus for conservation. To achieve this, EMPNG plans to work with the former Barging Route Waterways Committee members and the Aird Hills WMA Committee.
     - Update: A boat has finally been sourced so that meetings and workshops can be held with various village communities in the Aird Hills WMA and the Kikori Delta. EMPNG has arranged for two conservation project specialists to accompany the visiting team, to progress discussions on establishing conservation projects in the area. Options are being explored on how a contractor resource person can be placed to work with the local communities – this would help address previous IESC concerns on the lack of on-the-ground presence to retain the momentum of engagement.
     - Conservation aspects of the offset program are being refocused for this component. Since 2013, EMPNG has supported several community investment projects in the Kikori Delta area that complement the offset objective there. These are likely to be incorporated into the offset program and include: a Kikori Dolphin project (in collaboration with James Cook University, National Museum and Art Gallery, U-PNG and CEPA); and a Pig-nosed Turtle project (with University of Canberra, U-PNG, IBR and CEPA).
  2. Representative offset locations in the Upper Elevation Zone (montane >1200m) are still being explored. EMPNG's current focus is to engage with Hela Government to identify and discuss potential candidate offset locations in the province.
     - Update: a meeting was finally held with the Hela Government representative to discuss potential candidate sites. Further consultation with stakeholders in the region is now planned and meetings are scheduled with Hela District Administrators shortly.

Overall, conservation NGO resourcing and priorities continue to be a challenge, but EMPNG is fully aware of the constraints and have taken on board IESC recommendations made previously; they are working to address contractual bottlenecks and are providing additional personnel resources to work with external partners and communities where this is feasible and appropriate. Hence we are closing the Non-Conformance made in our last report (see Issues Table, Section 2).

5.2.1.2 Monitoring of the Biodiversity Strategy

Extensive monitoring campaigns have continued through the remainder of 2015, collating monitoring data according to the four PMAs (described in Section 5.2 introductory paragraphs):

- PMA-1 Remote sensing updates:
  - Change detection results obtained from 2009, 2011 and 2013 imagery are currently being verified by field visits by EMPNG Biodiversity Team representatives. Where unplanned, non-project changes in land use cover have been detected, field verification will focus on disturbance size and type, so as to ascertain the extent of change, the reasons for the change, and its ecological significance.
  - Following learnings from previous years imagery analysis, the PMA1 Protocol (describing the required methodology for data collection and analysis) has been reviewed, revised and finalized and is now approved for use; a copy has been passed to the IESC.
  - Satellite imagery for 2015 has been acquired and is currently being pre-processed.
- PMA-2 Condition survey updates:
  - Findings from the focal habitat desktop studies performed as part of the Initial Post-Construction Biodiversity Assessment earlier in the year are now being field-tested and verified – surveys of focal habitats on Hides Ridge are complete, and those around Lake

Kutubu and downstream towards the Kikori Delta will be verified by year end. Challenges have been encountered such as many pre-construction survey (PCS) GPS coordinates have now been found to be incorrect; this has meant that a number of sensitive ecological features noted in the Focal Habitats Register have been difficult to locate and therefore verify that their condition has not changed. Community leaders are being involved in the field verification of avoided cultural sites to ensure they have been protected during construction.

- The PMA2 Protocol is being reviewed following field-testing and will be sent to the IESC when available.
- The Focal Habitats register is also being updated following the field verification exercise, not only to record the condition of habitats observed during field verification, but also to correct any inaccurate geo-location information.

– PMA-3 Biodiversity survey updates:
  - A complete PMA-3 campaign was conducted during June-July 2015 covering two permanent sites (enabling repeatable surveys over time), including transects on Hides Ridge and around Moro. International and national biodiversity specialists were employed to conduct transects surveys for plants, mammals, bats, frogs and birds at both sites. Field data analysis is currently underway with a preliminary report anticipated by year end. DNA analysis will be completed early next year, and the Final Report expected by mid-2016.
  - Following the PMA-3 campaign, the Protocol is currently being revised.
  - A PMA-3 survey is intended for Lake Kutubu WMA sometime next year.

– PMA-4 Offset efficacy updates:
  - The PMA-4 Protocol is being revised to align with the revised Biodiversity Strategy, as well as the revised approach to technical aspects of the offsets framework. A methodology and range indicators to assess and track the effectiveness of protected area management will be trialed at Lake Kutubu during Q4 2015 (see previous section of offset program Component 4).

EMPNG is currently reviewing its suite of environmental performance indicators to ensure they effectively inform five Key Performance Indicators. One challenge typically faced by companies using the mitigation hierarchy is how to ensure that changes detected through a biodiversity monitoring campaign actually inform adaptive management, and provide adequate answers to be sure that impacts are managed effectively. A focus of future visits will be to determine how effectively monitoring results (such as observed change in condition of focal habitats) are captured through the Key Performance Indicators, with these then informing company environmental performance through the existing overarching environmental management system. Dialogue continues between the IESC, EMPNG and their PMA-3 external specialists on the challenges associated with species diversity/abundance analysis and interpretation, including detecting change due to project-related impacts, the value of using both species richness and abundance data, and the practical constraints of obtaining representative data across such a vast area).

5.2.1.3 Freshwater Ecology

No updates provided during the October 2015 visit.

5.2.2 Recommendations

1. We recommend EMPNG develop site specific offset delivery plans, to include the case for additionality at the offset site, and include a site-specific assessment of risks and uncertainties that will need to be fully understood and managed for that offset site to achieve the desired conservation outcomes.

5.3 INDUCED ACCESS

EMPNG's objective is to control vehicle access to Project roads and infrastructure, to prevent potentially damaging third party activities through enhanced access.

EMPNG has retained a number of RoW construction access tracks/roads for permanent use during the Production-phase, so as to allow emergency access, maintenance and delivery of fuel to above ground installations (AGIs), such as main line valves (MLV), check valves (CV) and cathodic protection stations (CP). Background on the justification for access and methods of access control is provided in the EMP (an

updated Table 17-1 will be included in a future EMP revision) and in previous IESC reports, along with IESC's opinion on the status and effectiveness of each vehicle access control.

EMPNG's strategy is that access will generally be allowed only to EMPNG vehicles. Access by third party vehicles serving operational needs may be sanctioned subject to prior approval from EMPNG. Access by landowner vehicles may be sanctioned subject to approval from EMPNG. In both cases, access will be authorized only by designated EMPNG personnel. Vehicles will be inspected as deemed appropriate. A Vehicle Monitoring Plan (VMP) describes the process to be followed for vehicles seeking authorization to use EMPNG roads, and data is being gathered on type of vehicles passing through points where Access Monitors are located.

CEPA's Environmental Permit states that EMPNG is "required to establish and maintain systems to ensure project infrastructure and road systems are not used in any way to provide support of logging activity or any other uncontrolled access. Prevention of access should continue until such time as natural vegetation regrowth prevents their use."

5.3.1 Observations

Following the formal requests from the PNG government for the transfer of ownership of various ENPNG road/bridge infrastructure (see our May 2015 report), there have been no further requests. Handover of both the Tamalia River and Waguba River bridges is complete – no induced access risks have been identified from the Company's loss of control of these bridges, as they are on a public road and were existing bridges that were either upgraded or replaced. EMPNG is undertaking risk assessments related to the future handover of the Kaiam/Kikori River Bridge and the Kopi Scraper Station Access Road (otherwise known as Kopi Bypass) to the PNG Government; risk assessments for the Kantobo to Gobe road section will be undertaken next year.

As the Upstream part of the PNG LNG Project is sited in critical habitat, EMPNG must be able to demonstrate they meet the requirements of no measurable impacts on the ability of the critical habitat to support the established population of species or the functions of the habitat (as per IFC Performance Standard 6, Para. 9). With regard to Company infrastructure in the lowlands, the Kikori to Gobe area is a weed management quarantine zone within EMPNG's invasive species philosophy, reflecting the importance of the area as a buffer to prevent the spread of Priority-1 weeds from the Kikori area up beyond Gobe. The IESC continues to believe that any unrestricted access to project infrastructure would represent a potentially significant risk to the Project in relation to avoiding induced access, land-use change, the spread of weeds, pests and pathogens, and could threaten ecological integrity. EMPNG should ensure as part of its negotiations with government that every effort is made to retain controls on vehicular access to prevent any ecological damage through third party access to areas, and therefore allow the Company to uphold their commitments made to Lenders.

With regard to ongoing control of vehicular access on EMPNG roads, there are some differences between those stated in the published Upstream EMP and the current situation (the next revision to the EMP will contain a revised list). The current status of access control/monitors as provided by EMPNG is listed in Table 5.1.

Table 5.1: Status of Access Controls/Monitors

Access reason	Access location	Current Vehicle Access Control/Monitor Status
Producing wells	Hides Ridge	As per EMP. Manned station at vehicle wash at base of well pad access road. All vehicle access is logged.
AGI (Above ground installation)	CV-1	As per EMP.; Unmanned boom-gate between Angore WP-B and the RoW is installed and locked.
Producing wells (future)	Angore	Different from EMP. Boom-gate installed but open, & not permanently manned. Permanent control measures to be implemented post-drilling by Production.
AGI	MLV-1 Benaria	Different from EMP. No boom-gate is currently installed. Vehicle Access Monitor at Benaria village, not at project bridge/infrastructure. EMPNG advise that a locked boom-gate will be installed once the Government has completed the installation of a permanent bridge to link

Access reason	Access location	Current Vehicle Access Control/Monitor Status
		Benaria Station to the public road. Until that time EMPNG is allowing Benaria Village clans to use the temporary construction bridge and small section of RoW access track running past MLV-1.
AGI / Road	MLV-2 & Homa-Benaria Ridge access road	As per EMP. Boom gates (two) installed and locked, one at MLV-2 and one at the intersection of the tax-credit public road and MLV-2 Homa Ridge access road.
AGI	MLV-3	As per EMP. Boom-gate installed and locked.
AGI	MLV-4	Asper EMP. Boom-gate installed and locked.
AGI	CV-2, Moro	As per EMP. No EMPNG control. Rely on OSL road controls at Moro.
AGI	Agogo tie-in	Not in EMP. Boom-gate installed and locked.
AGI	Kutubu MLV (gas pipeline)	As per EMP. Boom gate installed and locked.
AGI / Road	CP-1 (KP153) (access via Moro-Kantobo OSL road)	Southern control different from EMP. OSL/EMPNG road sections: The EMP states a locked unmanned boom-gate to be at KP164 near Kantobo – this is not currently in place. Instead EMPNG rely on OSL road controls at Moro (KP95) and Manu (KP115), and EMPNG unlocked boom-gate with daytime Access Monitor (records vehicles using road) at Gobe to the south. See paragraphs below.
Road/ bridge	Kantobo to Gobe EMPNG road (including Heartbreak Hill & Mubi Bridge)	Different from EMP. OSL/EMPNG road sections: The EMP states a locked unmanned boom-gate to be at KP164 near Kantobo – this is not currently in place. Instead EMPNG rely on OSL road controls at Moro (KP95) and Manu (KP115), and EMPNG unlocked boom-gate with daytime Access Monitor (records vehicles using road) at Gobe to the south. See paragraphs below.
AGI	Gobe MLV	Boom gate installed and locked.
AGI	CP-2	Boom gate installed and locked.
Road/bridge	Kopi shore base to Kopi scraper station	Different from EMP. The EMP states locked boom gates at each end of the EMPNG road linking two old logging tracks – these are not currently in place. Instead, a single boom gate (unlocked) installed with a daytime Access Monitor (records vehicles using road). EMPNG state this is due to community requests. See paragraphs below.
AGI	KP232	As per EMP. Boom gate installed and locked.
Road/bridge	Kikori River Bridge	Boom gate installed and manned with Access Monitor (records vehicles using road).

Vehicle data from road users passing through the manned gates at Gobe and Kopi, plus at Benaria Station, continues to be collated and analyzed. Along the Southern Highway (Gobe gate), the number of vehicles using the road is decreasing due to non-EMPNG work being completed – see charts below. Less than a quarter of all vehicles logged at Gobe drive the whole route up beyond OSL Ridge camp, and these are mainly OSL vehicles (or their contractors). For Benaria, road use is much lower with less than 35 vehicles each quarter: 73% of vehicles are private and 7% are EMPNG. This dataset is providing a useful baseline detailing the different types of road users currently using EMPNG access roads..

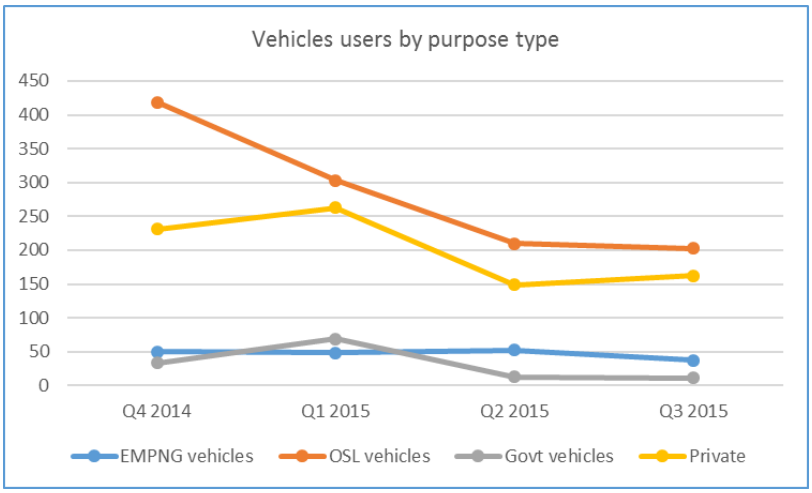


Figure 5.1: Road users by purpose-type

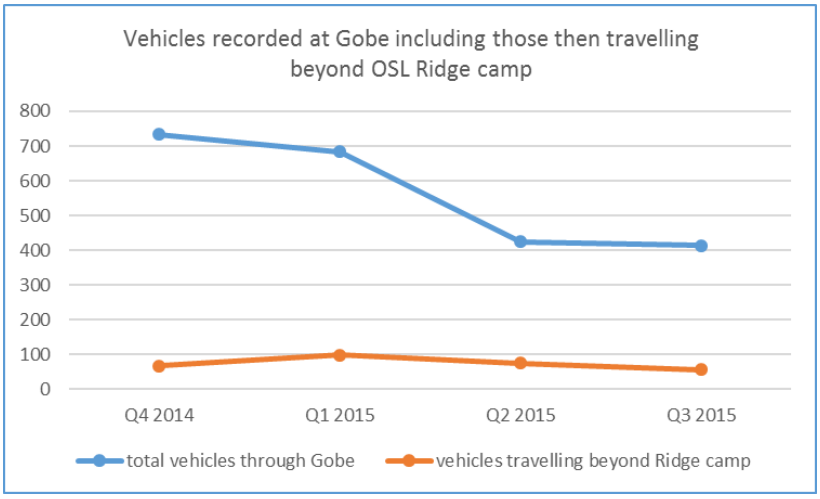


Figure 5.2: Vehicles recorded at Gobe versus OSL Ridge Camp

EMPNG has advised that recent aerial surveying and patrols have detected no signs of logging adjacent to the RoW or infrastructure, no unauthorized vehicle tracks noted on the RoW, and no evidence of vehicles avoiding/going around locked boom-gates.

Following the Non-Conformance given to EMPNG in our last report, the Company has reviewed their procedures with regard to Access Monitors at manned boom-gates, enforcement of those procedures, and revised the Induced Access Protocol so that the vehicle approval/risk process is updated. At manned boom-gates at Gobe and Kopi:

- Access monitors record vehicle details, origin, destination and purpose of their trip. These details are uploaded to the Vehicle Log Register once a week.
- For safety/security reasons, Access Monitors are present during daylight hours only, and do not prevent persons passing through – "no confrontation" messaged to Access Monitors during their training.
- Access monitors are trained to notify Community Affairs Officers if logging trucks are entering the area or using the road network. This is further supported in the ROW Management procedure whereby clans notify EMPNG if logging is occurring adjacent to EMPNG ROW.
- The Register is reviewed against a list of vehicles/clans to determine if any new vehicles/groups are accessing EMPNG roads via the manned boom gates. New vehicles/groups are assessed as to whether they are likely to pose an increase induced access risk.

- Where it is identified that a particular group/company is likely to pose an induced access risk, EMPNG will engage with relevant party/parties.

The IESC believes there is a real threat to PNG forests of unsustainable land use conversion, such as palm oil[5] and illegal logging. Although the IESC does not necessarily agree that this revised access management procedure equates to 'preventing' access (to avoid damaging activities), we accept that a combination of recording and analyzing road use, regular community liaison, effective RoW monitoring (PMA-2), and timely analysis of remote sensing data (PMA-1) should in theory be sufficient to detect any potentially damaging third party activities were they to occur. However, there is also the potential for vehicles travelling between sections of the Kaiam-Moro road to contribute towards the spread of weeds, running as they do through EMPNG's weed quarantine buffer WMZ-2 (see Weeds section below) – therefore this has to be carefully managed and hence our Recommendation in Section 5.5.2. As identified in the EIS, when taken in combination with enhanced access, forest fragmentation and edge effects from the RoW, there is the potential to negatively affect the unique biodiversity values of the forest. However, we are advised that communities have made it very clear to EMPNG Community Affairs Officers that vehicle access should be allowed through both the Gobe and Kopi access gates, and EMPNG is thus monitoring the situation.

We therefore believe EMPNG is doing a reasonable job in a difficult situation, and following the company's review of their internal processes, we feel it is fair to close the Non-Conformance (see Issues Table Section 2.2).

As discussions continue with the PNG Government on the transfer of certain EMPNG infrastructure, this will continue to be a key area for IESC focus in the future.

5.3.2 Recommendations

1. EMPNG should ensure as part of its negotiations with the PNG government regarding transfer of ownership of roads/infrastructure, that every effort is made to retain controls on vehicular access to prevent any ecological damage through third party access to areas, and therefore allow the company to uphold their commitments made to Lenders with regard to invasive species, induced access and ecological management. Potential risks need to be fully understood and effective mitigation options discussed.

5.4 REINSTATEMENT AND REGENERATION

EMPNG's objectives are to establish stable landform conditions at temporary work areas disturbed during construction, and create ground conditions conducive to natural regeneration so as to achieve vegetation succession according to established benchmarks.

5.4.1 Observations

PNG is currently suffering the effects of a strong El Niño event, causing extensive and severe drought conditions across much of the country. In some project areas this has meant revegetated areas are looking less verdant than observed previously. Conversely, in other areas the lack of rains may have allowed the establishment and spread of vegetation on side-casting areas and steeper slopes where previous heavy rain events could have caused instability. As an example, during a helicopter overflight, we observed improved vegetation cover on limestone rubble side-casting located on the very steep slopes either side of the Homa-Benaria Ridge RoW and the Homa Ridge Access Road to MLV-2. On a road trip up Hides Spineline, we observed further slow but steady regeneration of areas where side-casting rubble was placed, and an increasing diversity of plants naturally revegetating along the sides of the road.

Information regarding slope stability and erosion control management at HGCP, Komo and on Hides Ridge is provided in Section 4.4. At Komo, seeding with couch grass (*Cynodon dactylon*) is being undertaken in areas where control works have been completed, and the root systems of selectively planted vetiver grass, (*Chrysopogon zizanioidesis*) are helping to provide stability to soils along the edges of newly reconstructed drainage channels, although most of the vetiver grasses are currently suffering from the lack of rains.

5 *For example, article on Mongabay.com/J.C.Cannon/Global Forest Reporting Network, Nov 2014, "Palm oil interest surges in Papua New Guinea", accessed Oct 2015: http://news.mongabay.com/2014/11/palm-oil-interest-surges-in-papua-new-guinea/*

EMPNG plans to commence a watering program where this is deemed necessary to retain a healthy root stock.

At the LNG Plant, EMPNG has now established static photo points to allow a more systematic, regular record to be kept of mangrove regeneration around the RoW landfall. The first series of photos have been taken, and future IESC visits will review this information periodically so as to assess regeneration success.

Results from the annual Reinstatement Audit conducted earlier in the year, assessing a number of randomly selected sites across the Upstream area and LNG Plant site, were not provided during this trip.

As documented in our last report, the first of the Regeneration Monitoring campaigns was completed earlier in 2015 by New Guinea Binatang Research Centre. No update was provided on the findings of the study during this trip.

5.4.2 Recommendations

No recommendations resulting from this trip.

5.5 INVASIVE SPECIES, PESTS AND PLANT PATHOGENS

EMPNG's objectives are to prevent priority invasive species, pests and plant pathogens from entering or becoming established at (or in the vicinity of) their facilities and infrastructure, and ensure containment of existing priority invasive species, pests and plant pathogens already present. Supporting the Upstream and LNG Plant EMP's are an Invasive Species Monitoring Protocol (currently finalized at Rev.0), and a Register of Invasive Species, Pests and Pathogens. This Register is used to track any changes in invasive species type, abundance and distribution, and is updated through regular external specialist audits, internal monitoring and general reporting from staff and communities. EMPNG's approach to weed management utilizes the identification and prioritization of weeds: Priority-1 (P1) weeds are defined as species that rapidly colonize disturbed areas and displace and/or invade native vegetation; the Project aims to control and monitor all P1 weeds and exclude them from all work areas through active control. Priority-2 (P2) weeds are defined as species that may rapidly colonize disturbed areas and displace native vegetation, but rarely invade natural habitats; P2 species are monitored, but only controlled where a species shows signs of increasing invasiveness or is growing alongside P1 weeds. The project footprint is split into separate Weed Management Zones (WMZs), each delineating broad ecological units, with separate targeted objectives and monitoring priorities.

EMPNG seeks to manage the threat of spread of *Phytophthora cinnamomi* by preventing the spread or introduction of Type A2 into unaffected areas, in particular ecologically sensitive areas susceptible to senescence.

With regard to quarantine, EMPNG has developed and adopted quarantine requirements which aim to prevent the importation and spread of foreign invasive species, pests, pathogens or disease; quarantine requirements are contained within a Quarantine Procedure.

5.5.1 Observations

5.5.1.1 Invasive Species

BioTropica continues to audit and advise EMPNG on weed management across the Upstream and LNG Plant areas. EMPNG has established an 'audit recommendation implementation status tracker' to track actions against audit recommendations made, although to add value, this needs to be kept up to date.

Results and recommendations from the April/May 2015 audit were shared with IESC. Summary highlights include:

- Species distribution and abundance: This latest audit has observed continued range extensions of two P1 weeds, anglestem willow primrose (*Ludwigia leptocarpa*) and bitter vine (*Mikania micrantha*), across multiple WMZs.
    - *Ludwigia leptocarpa:* prior to construction, it was noted only in Kikori & Omati villages. By mid-2012, outbreaks were identified at Kaiam Camp-2, on both the RoW and access roads. By late-2013, it was found to have spread along the RoW & access roads to Lake Kutubu and Moro Base. In this latest audit, it was found on Homa Ridge Access road and Angore Wellpad-B.

- *Mikania micrantha*: in 2009, this species had previously been recorded at Kopi, Gobe and Moro camp (Landco portion), and is now noted at Kopeanda (Hides Waste Management Facility). Note that the weed was also noted at Nogoli during the pre-construction surveys (PCS).

Range data has been analyzed for fifteen separate P1 weeds tracked over the duration of seven audits from the PCS or first audit (or whenever the weed was first recorded). Of the fifteen species, six weed species have decreased the number of sites occupied over that timeframe but nine have increased the number of sites occupied. Of the nine P1 species noted over an increasing number of sites, three in particular have shown a clear increasing trend over time: *Ludwigia leptocarpa* has spread from zero to ten sites, *Piper aduncum* (spiked pepper) has spread from five to twelve sites, and *Melinis minutiflora* (molasses grass) has spread from one to five sites.

- Species diversity: this has stayed relatively stable since PCS, although a small increase in P1 weeds was noted in this last audit – these are weeds that already existed in PNG but were not observed during previous audits of company sites and infrastructure.
- Two new P1 weeds have now been found above the Hides Ridge vehicle wash-down station, (*Piper aduncum*) and orange/red desmodium (*Desmodium repandum*), plus a new P3 weed, sugar fruit (*Passiflora ligularis*). Wellpad B is a particular problem, primarily due to the base-material gravel being already contaminated before being brought up above the 'clean line' (the wash-down station), and the increasing number of people living around Wellpad B. Sugar fruit, although being P3, has the potential to become problematic in the future, as at higher altitudes this plant germinates readily and grows quickly. The recent find of flowers on a well-established vine on the Homa Ridge access road, and numbers of seedlings on Hides Ridge, suggests this species is well-suited to Project related disturbance and may become problematic in the future.
- The audit highlighted that use of the mobile washdown unit at the base of the Homa Ridge Access Road up to MLV-2 was inefficient due to the lack of water availability at Homa. EMPNG have responded by ensuring vehicles are cleaned at camp prior to visiting the Ridge, and have ensured a larger volume washwater container is available at the temporary washdown area.
- It also stressed the need to re-establish the quarantine buffer zone between Kaiam/Kikori Bridge and the Mubi River (WMZ-2), so to establish a weed no-go zone preventing the spread between lowland and upland/highland areas.

Since our last visit, EMPNG has been undertaking active control measures at: Hides Spineline (above the vehicle wash clean-line), the HGCP, Angore Wellpad B, the Homa Access Road, the perimeter around MLV-2, at both MLV-3 and MLV-4 (along with access roads to each), at two areas on the RoW (KP62 and KP85-88), and at the LNG Plant. The Company has revised how weed infestation locations and extent are mapped within each WMZ, and how this information is communicated to Mosquito Zone (EMPNG's external invasive species control contractor). We were advised that the area between the Omati landfall and Kaiam/Kikori River (previously known as WMZ-1) will no longer be included in future external specialist weed audits, and that weed management in the zone will solely focus on reducing movement of seeds on vehicles between Kopi Scraper Station and the Kopi Shore base (where a new EMPNG road was constructed utilizing an old logging track, and is still retained).

EMPNG continues awareness-raising and training of staff and contractors on the company's commitments to managing invasive species and reporting, and now are also targeting communities to raise general awareness on weeds and weed management. There has also been additional focused training for Mosquito Zone and there are now two Mosquito Zone personnel managing the control of weeds permanently based at the LNG Plant (to include fire risk management) and one at Moro Camp B.

A key point to highlight is that weed management remains a high priority for the company. The IESC agrees that a high priority approach is vital if EMPNG is to continue to meet and maintain their objectives (stated in Introduction above). The ongoing spread of certain weeds between weed management zones noted in successive audits indicates the RoW and road to be pathways for the spread of Priority-1 species between lowland and upland areas. The proximity of communities to the RoW and other facilities and infrastructure brings additional risks to the management of weed distribution, abundance and diversity. The role of WMZ-2 (between Kaiam/Kikori River and the Mubi River) as a quarantine/buffer has not been as effective as hoped in preventing the spread of weeds between the lowland and upland/highland sections of the project's footprint. EMPNG advises that Gobe MLV within that zone has the highest number of P1 weeds with an increased abundance. Retention of this zone as a quarantine buffer is made more difficult by

public use of the road, albeit with recording of vehicles using the road (see Induced Access section presented previously). However this only increases the need to be more assiduous in managing the threats from a less-effective buffer-zone. Therefore additional weed management focus is required to re-establish the zone as a quarantine buffer.

Of particular concern due to its highly invasive nature and its ability to establish and persist in many habitats, the spread of anglestem willow primrose (*Ludwigia leptocarpa*) is now deemed the single most serious weed risk across the footprint of the project. The expansion in distribution observed during the last two years is of concern, notably due to:

- *Ludwigia leptocarpa* has a preference for semi-aquatic habitats; the prevalence of swamps and areas of disturbance around the edges of Lake Kutubu means that were it to become established in the lake, it has the potential to significantly impact its natural integrity and conservation value. Unfortunately, its abundance has increased in the weed management zone between the buffer zone and Lake Kutubu, and an increasing presence around Lake Kutubu itself. As a result of the potential threat to Lake Kutubu, EMPNG has (in conjunction with BioTropica) developed a specific Lake Kutubu Weed Management Plan, to target both immediate and follow-up control actions to eradicate P1 weeds and prevent their further spread. In addition to *L. leptocarpa*, other P1 weeds to be targeted in the area include: *Cenchrus purpureus*, *Centrosema molle*, *Desmodium uncinatum*, *Piper aduncum*, *Pueraria phaseoloides*, *Senna alata*, and *Sphagneticola trilobata*.
- The Biodiversity Strategy notes the Homa-Benaria Ridge was deemed to be largely weed-free, with excellent forest condition, high diversity of flora and fauna and is listed as one of EMPNG's Priority Ecosystems. Although only a single individual was observed, the presence of *L.leptocarpa* on the Homa Ridge Access road up to MLV-2 (plus the large flowering specimen in a drainage channel at Angore Wellpad B) is of concern as it indicates the continued spread of the weed along roads and access tracks. The potential for spread onto and along the Homa-Benaria Ridge is particularly worrying, especially considering the extensive use of the RoW area as a walking track by local communities and thus disturbed areas still exist. Continual P1 weed removal on the Ridge should be a priority.

As a result of the ongoing spread of P1 species across several weed management zones, and the increases in abundance within these new zones, we have noted an Observation in the Issues Table in Section 2.2. We recognize that EMPNG is trying to address these challenges, but that additional management focus is required to ensure that further increases in both distribution and abundance are prevented.

5.5.1.2 Quarantine

EMPNG and Contractor quarantine management performance data for 2015 YTD are included in the following two IESC graphs, presenting information on:

- top graph (see **Error! Reference source not found.**3): the proportion of consignments requiring a AQIA inspection on arrival into PNG (showing numbers of consignments within the graph bars), and
- bottom graph (see Figure 5.4: Inspection Outcomes, indicating the Need for Fumigation following Inspection
- 4): the proportion of those inspections that result in the need for fumigation of that consignment i.e. the inspection outcome.

Note: inspections are typically triggered by inadequate/incomplete documentation accompanying the consignment, or the source of the consignment coming is a country that NAQIA deems to be higher risk. Thus the likelihood of inspection is not always within the control of EMPNG or their Contractors. However, fumigations are typically triggered by a suspicious item (e.g. insect) found during the NAQIA inspection, and hence are usually preventable by good housekeeping and management at the packing source of the consignment.

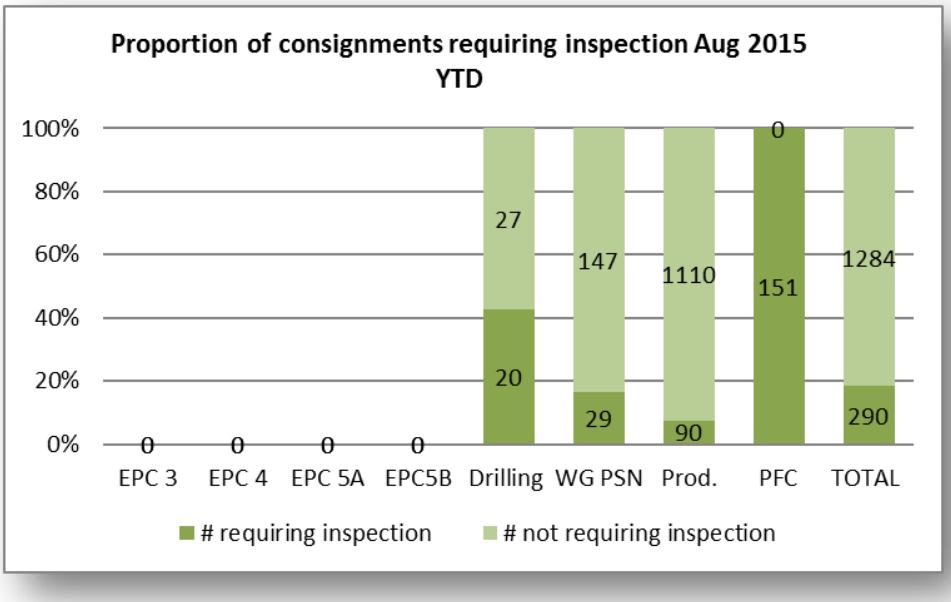


Figure 5.3: Proportion of Consignments Requiring Inspection by Contractor

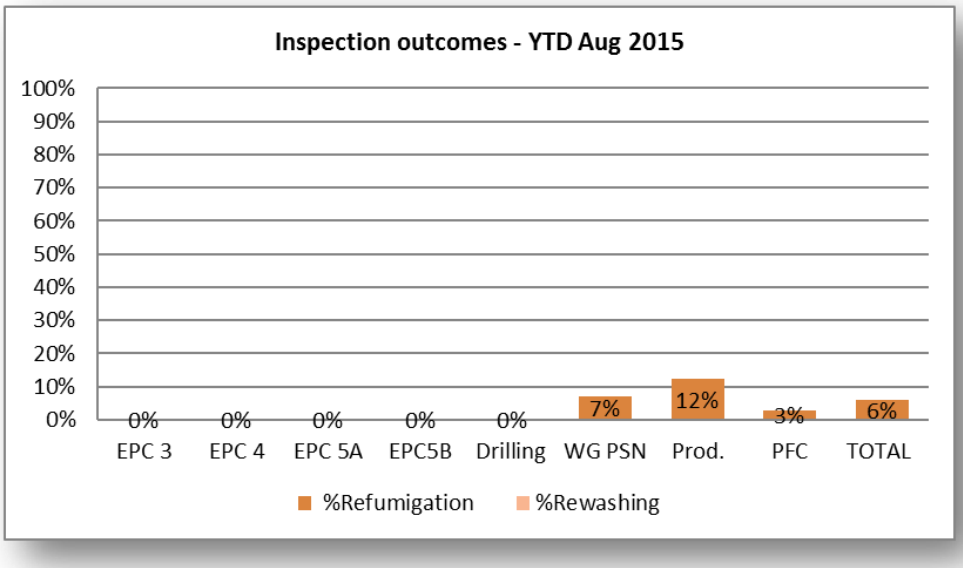


Figure 5.4: Inspection Outcomes, indicating the Need for Fumigation following Inspection

Key points on performance in relation to inspections and fumigation include:

- Drilling shipment import volumes are now considerably reduced, and demobilization has commenced;
- Wood Group is currently recording a low number of shipments, with the majority of shipments being airfrieght (83%). They have incurred only two fumigations following inspection YTD;
- Production shipment volumes remain constant, with nearly 90% of shipments being airfreight (representing only 10% of total tonnage). Shipping volumes will be reducing in the future. A total of 11 shipments have required refumigation during 2015 – of these 11, a single container was found to have not been cleaned effectively at source, but the other 10 fumigations were due to documentation irregularities;

– PFC completed imports during 2Q 2015.

Following our recommendation from last trip, EMPNG reiterated to their PFC Contractors the importance of their adherence to EMPNG's Quarantine Procedure, especially the requirement for only using ISPM-15 treated and stamped timber packaging.

5.5.2 Recommendations

1. We suggest EMPNG consult with their external invasive species specialists as to the value in developing a Homa-Benaria Ridge Weed Management Plan to understand the potential threats and target control actions necessary to counter the increased weed diversity, distribution and abundance in the area
2. Additional weed management focus should be targeted to retain the quarantine buffer capability of the Kaiam/Kikori River and Mubi River weed management zone. Use of a vehicle washdown facility could be considered to reduce any contribution to weed spread from vehicle transmission. Input on the value and feasibility of a vehicle washdown facility to minimize vehicle transmission through the zone should be sought from the company's external invasive species specialists.

6 SOCIAL

6.1 INTRODUCTION

6.1.1 Scope of Social Review for this Site Visit

The IESC consulted with a variety of people and groups during its October 2015 visit. This visit focused primarily on close out of the Project's resettlement requirements and the Community Development Support (CDS) program. Other aspects of social performance are also covered in this section. Section 7 presents the results of the labor review.

Social activities during this visit included the following:

- presentations by relevant project departments;
- a workshop on lessons learned from resettlement;
- Visit to a women's group at Belopa (Hides);
- Visit to households in Boera participating in the CDS agricultural program; and
- Visit to a school in Lea Lea and discussion with the headmistress (also a School Board member) regarding the CDS School Board Management Program.

6.1.2 Waiver

The IESC social review is substantially based on documents and data provided by the Project and interviews conducted with project staff, project affected people, and other stakeholders. It is 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. Accordingly, the IESC makes no representation as to the substance of any reported 'perceptions' or 'beliefs' of interviewees and notes that hearsay evidence should not be treated as proof of any specific statement or concern expressed.

6.2 LAND ACCESS, RESETTLEMENT, AND LIVELIHOOD RESTORATION - STRUCTURE

6.2.1 Project Strategy

The Land Access, Resettlement and Livelihood Restoration Management Plan – Production applies to any new land access required during the Production phase and for managing the commitments for land that was obtained in the construction phase. This Plan supersedes the Resettlement Policy Framework developed for construction phase land acquisition. Livelihood restoration obligations for displacement that occurred during the construction phase, as well as evaluation of resettlement and livelihood restoration outcomes and the independent external audit of the resettlement and livelihood program, are also covered by this Plan and will be concluded in the Production phase.

The Plan defines the principles and approach to be used for management of the inter-linked activities related to accessing land, resettlement, and livelihood restoration. The content of the Plan is consistent with IFC Performance Standard 5 (Land Acquisition and Involuntary Displacement).

6.2.2 Observations

The functions of the construction phase Land and Community Affairs (L&CA) group are now the responsibility of the Production phase Public and Government Affairs (P&GA) group. Under the new structure, the Compliance Manager who was responsible for completion of resettlement tasks has become the Transition Manager and retains responsibility for closing out resettlement. She continues to be supported by members of the resettlement field and evaluation team.

6.2.3 Recommendations

None arising from this review.

6.3 MANAGEMENT OF DISPLACEMENT IMPACTS –STATUS AND CLOSURE

6.3.1 Observations

The resettlement topics addressed during this IESC visit are the status of close out of resettlement obligations and formalization of the lessons learned from the resettlement experience. These are discussed separately below.

6.3.1.1 Closing Out Resettlement Obligations

Resettlement obligations are very near completion. All the remedial actions for households identified by the IESC and/or Resettlement Completion Audit as experiencing declined conditions and where the decline can be attributed to a shortfall in delivery of restoration measures, are closed with the exception of the following (see Summary of Resettlement Outcome Report for more detailed information):

- Households with insufficient land: the Project is working with the Environmental Team to hire members of the two households with insufficient garden land to work in a nursery that will provide plants for roadside soil repair.
- One property for which compensation may have been paid to the incorrect person: determination of any Project obligation cannot be made at this time as the concerned parties are engaged in a legal action pertaining to this issue.
- Inability to contact households: two households located in areas too insecure for the Project to visit and which have filed a court case.
- Inability to deliver additional agricultural support measures: the agricultural livelihood team attempted to deliver additional tools, but was forced to withdraw as a result of physical threats made to to the team by the intended recipients. No further assistance to this household will be provided.

The Project will follow up on the first three unclosed actions and close them when possible.

The Project also completed the IESC recommended assessment of general water accessibility in the Komo and Hides areas. Ten of the 12 cases of inadequate accessibility have been closed or remedial actions completed. Of the two remaining cases, materials to repair or to construct water tanks are scheduled to be delivered. Additionally, suitable church grounds have been identified for the provision of upgrades or new community water tanks replace the original tanks appropriated over by land owners. The Company is also conducting a Drought Condition Assessment in Project areas and working with national and local Governments and other organizations to assess priority community needs. The data from the Komo/Hides assessment have been incorporated in the Drought Condition assessment. See Section 6.5.2.3 for a discussion of drought assessment and response measures.

6.3.1.2 Lessons Learned Workshop

The Project is formalizing the lessons learned from resettlement as the basis for a Handbook that will be used to guide any future resettlement in PNG. During this visit, the IESC participated in a one day workshop to review and advise on the lessons learned. Some of the lessons are unique to the Huli areas of the highlands, but may be relevant to other highland areas, and some to the highlands in general. Some lessons, such as those related to resettlement management and documentation are applicable to resettlement in general. The main lessons are summarized below and additional information is provided in the Project's *Resettlement Outcome Report*.

Management lessons

- Appoint a resettlement manager who has demonstrated skill in execution planning, efficient implementation, organizing and managing staff and contractors, and understanding new concepts quickly. The manager does not have to be a resettlement specialist, but must be a good manager.
- Use existing expertise as part of a core resettlement team to plan, implement, and evaluate resettlement. Consultants can be used to implement aspects of the restoration process, for example, to deliver livelihood restoration programs, but should not be responsible to plan, manage, or monitor resettlement.
- Manage consultant contracts carefully and consistently with specific instructions provided to contractors and monitoring and outcome evaluation overseen by Project staff.

Resettlement Documentation and Planning

- Apply a simplified resettlement action plan approach. This would include preparation of an overarching "framework" document that sets out all the principles, Project commitments, entitlements for each type of displacement impact, and procedures for all resettlement activities (surveys, censuses, socio-economic characteristics of the area related to displacement impacts, engagement, compensation, strategy for re-establishment of physically displaced and livelihood

restoration of economically displaced, vulnerable households, monitoring and evaluation, etc.). A simplified resettlement plan would be prepared for each individual affected area. Plans would reference the Framework and include, but not necessarily be limited to, the details for each area, such as the number and nature of affected households; results of surveys indicating any unique characteristics of affected persons related to displacement impact; census results of losses; cut-off date(s) to minimize "speculators"; consultation schedule; standard of living and livelihood restoration programs for area (these may differ somewhat between areas); identification of vulnerable households and proposed assistance measures; implementation schedule; and budget.

- Consider the constraints revealed by the original resettlement experience to achieving some of the objectives of resettlement recommended in PS5 and select outcome indicators consistent with the realities of affected areas. These constraints include, for example, inability to ensure security of tenure and improved accessibility to services under the existing clan land use and ownership system, as well as extremely fluid nature of land "ownership". See the Resettlement Outcome Report for details on these constraints.

Entitlement Considerations

- Provide reasonable cash compensation for any speculative planting of crops or trees prior to the cutoff date, rather than the in kind replacement that was used in many of the original resettlement areas. Ensure that the census of assets is done prior to declaration of the cutoff date, after which no compensation will be paid and conduct thorough consultation and publication of this entitlement and its restrictions.
- Ensure that replacement value compensation includes all transaction costs (e.g., fees, transport, etc.).
- For physically displaced households, first offer provision of materials and any necessary assistance (as applicable to, for example, vulnerable households) for replacement dwellings. Pay cash only as a last resort.
- Provide water tanks (no cash payment) to all physically displaced households.

Identify vulnerable households early and preferably at the time of the census. Base the identification on a household's vulnerability to the impact of displacement, that is, households that are more vulnerable to the impact of displacement and/or unable on their own to fully participate in the resettlement processes and entitlements.

6.3.2 Recommendations

1. Provide the IESC with information on completion of the remaining resettlement obligations and update the Resettlement Outcome Report.

6.4 COMMUNITY IMPACTS MANAGEMENT AND SECURITY

6.4.1 Project Strategy

Project commitments to community impacts management during Production are contained in the Community Health, Safety and Security Management Plan – Production that addresses health, safety and security from a community perspective. See Section 8.2 in this report for IESC comments on Community Health.

The objectives of this Plan are to:

- avoid or limit risks to and impacts on the health, safety and security of the community during the production phase from both routine and non-routine circumstances through implementing targeted prevention programs to reduce risks, along with the implementation of an effective monitoring and evaluation program;
- ensure that safeguarding of personnel and property is conducted in an appropriate manner that avoids or limits risks to the community's safety and security; and
- maintain a monitoring and evaluation program that is community-based, participatory, and transparent and covers all phases of production and decommissioning.

Elements of the Production Community Development Support Management Plan also apply as it relates to community development support activities undertaken to mitigate the impacts or potential risks generated

by Company activities with the objective to avoid or reduce the risk of adverse social impacts on Papua New Guinean communities during production.

6.4.2 Observations

The decrease in security incidents continues, with only eight mostly minor incidents reported. The Project works closely with the Village Liaison Officers to deal with community issues as quickly as possible. Some clashes between communities have occurred, but these are unrelated to and do not directly affect the Project.

The Royal Papua New Guinea Constabulary (RPNGC) and the PNG Defense Force (PNGDF) comprise the Host Country Security Forces (HCSF) which provides security services in some Project areas, under a MoU signed in 2010 between the Project and the RPNGC

The Project applies and trains forces in the requirements of the Voluntary Principles for Security and Human Rights and the Project has been selected for a Corporate Review of the application of the Principles. A guideline for Host Country Security Forces (HCSF) forces on the use of force states the following rules:

- Where the use of force is required to affect an arrest or in self defense, it is the expectation of EMPNG Management that such ***force must be the minimum required*** to achieve the objective.
- The ***excessive use of force will not be tolerated*** and in accordance with the MOU will be documented to the PNG Government.

Additionally, the International Committee of the Red Cross (ICRC) is working with communities to help them understand the requirements of the Geneva Convention regarding the obligations of the Government toward control of its armed forces.

In terms of safety, the Project engages frequently with communities on key safety issues. The safety emphasis at this stage is on pipeline and roadway safety, particularly in the upstream Project areas.

6.4.3 Recommendations

None arising from this review.

6.5 COMMUNITY DEVELOPMENT SUPPORT PROGRAM

6.5.1 Project Strategy

Project commitments related to community development support are described in the Community Development Support Management Plan – Production. This Plan covers all community development support activities undertaken by the Project. This includes activities undertaken by the Land and Community Affairs team (L&CA) during construction, currently under Public and Government Affairs (P&GA) and the Medicine and Occupational Health team (MOH), as well as to other functions undertaking relevant community support initiatives.

The objectives of EMPNG community development support activities are to:

- promote development of conditions that strengthen communities' ability to benefit from the Project's presence;
- avoid or reduce the risk of adverse social impacts on PNG communities;
- provide opportunities for sustainable development benefits in a culturally appropriate manner; and
- ensure that the development process fosters full respect for the dignity, human rights, aspirations, cultures and natural resource-based livelihoods of Indigenous Peoples, thus meeting both local regulatory and IFC *Performance Standard 7: Indigenous Peoples (2006)* requirements.

6.5.2 Observations

6.5.2.1 IESC Previous Recommendations

The Project has responded positively to the June IESC recommendations. Development of program level outcome indicators is in progress and outcome evaluations will be conducted every three years with the initial livelihood support program (agriculture) to undergo its first evaluation at the end of 2016 and reviewed annually to determine if the scope is appropriate or changes are needed. External evaluation of

the CDS program as a whole will be reviewed at the end of four years (end of 2018). The ExxonMobil process audit indicated in the original plan will be replaced by an internal process review.

6.5.2.2 Strategy and Planning

The strategy and planning for Phase 1 is, in the opinion of the IESC, well-conceived, suitable for longer term impact, and consistent with the overall goal of the CDS Program. CDS is now fully staffed and has a CDS Analyst and coordination staff and field assistants for the upstream area work. Coordination with and reporting mechanisms for other project and external partners are in place. CDS works closely with Community Affairs to conduct frequent community engagements on CDS plans.

6.5.2.3 Program Status

Agriculture

The Scopes of Work (SOW) with Australian National University – ANUedge (ANUE) for the plant site Agriculture Livelihood Project (ALP) was signed in June and for upstream the Community Livelihood Improvement Project (CLIP) was signed in July. The bases for careful contract management have been established, including a database for tracking key indicators to be reported on a frequent basis and reporting templates provided.

Participant farmers at the plant site have been selected (187 including 107 new to the program). Suppliers of planting materials have been identified and are undergoing capacity assessments. The CLIP project in the upstream areas involves five women's groups initially and will be extended to an additional five groups by the end 2016.

The drought conditions are having an acute impact in much of the country, including the Project impact area. In response, the Project is conducting a drought assessment to identify the most suitable assistance it can provide. The Project is monitoring conditions in various sites and is working with stakeholders to develop awareness materials. Based on current monitoring results, the Project has developed and is awaiting approval for a plan to supply water to the Hides/Komo areas. Conditions in the LNG Plant site are also monitored, with emphasis on providing water to schools and health centers. Water for personal use by Plant site villages is being carted from Port Moresby.

The drought has caused some re-alignment of the activities of the CDS agricultural/ Livelihood program. Distribution of food crops and training has been put on hold and replaced with emphasis on food health literacy, maintaining seed stock, accepting cassava (drought resistant plant) as human food source, and initiating the poultry component. The IESC visited three ALP Project participants near the plant site and one upstream women's group from the CLIP Project near the HGDP. The women's group only recently started and is engaged in awareness and preparation for poultry. The plant site households all mentioned that drought conditions are seriously inhibiting progress, but expressed great appreciation for the way the Project is responding with useful replacement activities and for the encouragement the Program consistently provides. As one women stated, "*The program is keeping us going. Without it, we would just sit around and complain*."

Education & Health

The plant site education program is currently focusing on training to improve the capacity of school boards. The IESC commends the Project for choosing capacity building at the village level where it has the potential to demonstrate to villagers that they can bring about change in education, as well as other aspects of their lives.

The Board of Management Training for the four villages near the LNG Plant was conducted in May 2015 followed by development of a School Board Manual based on input from participants. The Project expects the Central Provincial Government to endorse the Manual in November. Individual school boards were trained between July and November. The Project will sponsor an outcome evaluation in 2016 using the "whole school quality assessment approach."

The IESC met with the headmistress of Lea Lea middle school who is also a School Board member. She emphasized the value of helping people (both board and community members) to understand the importance of school boards and the nature of the roles and responsibilities of school board members. She also indicated that the enthusiasm of board and community members has waned somewhat after an initial

period of activity. This is a typical response, but one that underscores the need for the Project to follow up with additional activities.

Education in the upstream areas lacks Government development plans and schools have many very basic needs. The current education support program in the upstream areas, thus, is focusing on infrastructure assistance for eight primary schools in upstream north. The infrastructure contributions are also assisting in developing education profiles as the basis for a longer term capacity building strategy. Developing a health assistance strategy is taking a similar approach by focusing on provision of infrastructure (water tanks, plumbing and maintenance, vaccine refrigeration) as a means to gain communities' trust, support for the development of health profiles, and identification of implementation partners.

CDS has also implemented or planned a number of one-off support measures for plant site villages in education, health, and livelihoods as part of its Strategic Community Investment program.

6.5.3 Recommendations

1. The IESC recommends that the CDS program provide follow up activities to support plant are school board development.

6.6 STAKEHOLDER ENGAGEMENT AND CONSULTATION

6.6.1 Project Strategy

The Project commitments with respect to stakeholder engagement are contained in the Stakeholder Engagement Management Plan – Production. This Plan describes the processes and actions applicable during production. The overall objective for stakeholder engagement during Production remains to keep all stakeholders informed with respect to their specific interests, engage people in decisions that directly affect them, and maintain stakeholder confidence and trust in the Project and its activities through open, informative, inclusive and timely communications. A *Village Liaison Officer Strategy* for the Production Phase supports implementation of the Management Plan and the Land and Community Affairs Plan.

6.6.2 Observations

The Project continues to engage widely with communities. During 2015 to date, the Project conducted a total of 5,020 engagements with 215 communities across the Project affected areas reaching out to a total of 26,207 attendees, including 2,193 engagements with 190 communities in the upstream areas, 2,817 engagements with 22 communities in the Plant site area, and 10 engagements with three communities near the PNG main office (PNG Haus).

The main issues covered during engagements with the upstream communities have included caretaking of the pipeline ROW, livelihood training (particularly with women's groups), Project community investment, road safety, and education. Plant site engagements have focused largely on the livelihood agricultural extension program, small business development, and health and education. Engagement with the communities around the new PNG Haus have covered drainage water awareness and have been also a means to form relationships with community leaders.

6.6.3 Recommendations

None arising from this review.

6.7 COMMUNITY GRIEVANCE MANAGEMENT

6.7.1 Project Strategy

The Project's grievance mechanism for management of project related individual and community grievances is described in Section 6 of the Stakeholder Engagement Plan.

6.7.2 Observations

Issues raised during 2015 to date total 2,520. Many of the items classified as "issues" are positive comments, particularly regarding community development and community investment efforts and health and safety awareness programs. Other issues relate to the Government's clan vetting process for royalty payments, as well as a few issues from upstream people regarding opportunities for participation in paid pipeline clean-up work.

Only 53 grievances have been filed in 2015 to date. Given that there are only a few months left in the year, the number of grievances for the year is likely to be significantly lower than in any previous year. The bulk

of grievances continue to be land related, for example claims regarding inadequate compensation. The project has investigated these complaints and found them not to be legitimate. A few grievances were filed by people in plant site area villages claiming they had not yet received the agricultural tools promised as part of the agricultural livelihood program. These were also resolved. Grievances not yet closed involve more complex issues the Project is investigating (e.g., alleged drainage work damage).

The annual grievance closure rate was 87% as of September, well above the required 75%. Additionally, the monthly closure rate achieved 100% for several months earlier in the year. Since July, the Project has seen a significant downturn in greivances registerd. The annual closure rate remains well above 75%, however the monthly closure rate is occasionally challenged with more complex grievances and a smaller number of grievances recently registered.

6.7.3 Recommendations

1. For future visits, the IESC would like to be informed of the reasons for delayed closure of any grievances the Project identifies as problematic in its ability to close and material to impacting the Project's reputation and relationship with the community.

6.8 STATE CLAN BENEFITS INTERFACE -UPDATE

6.8.1 Project Strategy

The PNG Government is responsible and accountable for determination and payment of landowner beneficiary royalty and equity dividends. EMPNG's goal is to influence and support the Government to help it pay landowner State Cash benefits in accordance to the laws of PNG. Its main challenge in this effort is to help ensure safe, accurate, timely and effective delivery of cash benefits without having any actual control over the process.

6.8.2 Observations on Status

The Project recognizes that the delays in finalization of the payment process caused by lack of Government funding and other distractions is a risk to the Project and, in the opinion of the IESC, is actively pursuing avenues to expedite the process. The Project continues to pay into the Royalty Trust Account established by DPE and the PNG Department of Finance to ensure that royalty income is kept separate from other funds.

Progress of development grant monies disbursement to Petroleum Development License landowner companies was halted by a national court case filed by a Petroleum Development License (PDL 8) landowner. The court decision on this case was to apply the Alternative Dispute Resolution (ADR) process (a mediation process) to PDL 8 for the purpose of identification of landowner beneficiary clans. The ADR process in PDL 8 also allows the application of the incorporated land groups (ILGs) under new amendments to the Land Groups Incorporation Act (LGIA) making it mandatory for those clan boundaries to be delineated and mapped and for clan members to submit birth certificates. A State Technical Team (led by the Deputy Secretary of the DPE) is tasked with a Landowner Benefits Identification and Distribution (LOB-ID) exercise as the basis for determining landowners and their benefit apportionments in percentages.

Awareness sessions have been held for the Pipeline License 4 (PDL 4) segments, as well as for the LNG Plant site villages (Petroleum Processing Facility License 2 – PPFL 2). The Ministerial Determinations were then signed by the Petroleum Minister and gazette. PDLs 9 and 4 are subject to a court case and an existing Alternative Dispute Resolution, respectively. The DPE has yet to pursue the LOB-ID vetting work in PDLs 1 and 7. In the near future, DPE will prepare Ministerial Determinations for PDLs 2, 5, and 6, which are existing oil fields with an existing beneficiary arrangement for the PNG LNG LOB-ID process.

The Project is also providing support to the following activities:

- Supporting DPE on Landowner Beneficiary Identification for PL4 Segments and confirm all Brownfield beneficiary lists;
- Supporting DPE with review of Ministerial Determinations Draft showing benefit splits;
- Monitoring the Alternative Dispute Resolution process in PDL 8;
- Agree logistical support requirements for DPE field team in the event EMPNG will be part of the State Technical Team for ILGs after the ADR has been completed.

7 LABOR AND HUMAN RESOURCES

7.1 INTRODUCTION

The IESC consulted with a variety of people and groups during its October 2015 visit. Activities included the following:

- presentations from labor related Project staff;
- Tour of the LNG plant accommodation and discussion with camp management;
- Visit to the HGCP accommodation and discussion with camp management;
- Discussion with the counselors for the Workplace Assistance Program.

7.2 LABOR AND WORKING CONDITIONS

7.2.1 Project Strategy

Project labor commitments are defined in the Labor and Working Conditions Management Plan – Production (the "Plan"). The Plan describes the requirements and expectations in terms of compliance, reporting, roles, supervision and training with respect to labor and working conditions, including camp accommodation. It covers all production activities for Upstream Facilities, the Pipelines and the LNG Plant. This Plan is expected to be adopted and applicable to EMPNG contractors, recognizing that EMPNG's effectiveness in managing third parties will vary in accordance with the leverage EMPNG is able to exercise. To the extent that EMPNG can exert influence over its supply chain, the principles in this Plan will also apply.

The objectives of the Plan are to:

- promote fair and equitable labor practices for the fair treatment, non-discrimination and equal opportunity of workers;
- establish, manage and promote a healthy management-worker relationship;
- protect workers' rights including migrant and third party workers; and
- promote healthy, safe, secure and comfortable accommodation that does not impact negatively on the communities in the surrounding area.

7.2.2 Observations

The Project presented to the IESC a full report on the compliance of policies, procedures, guidelines, and reporting formats covering labor and working conditions to the obligations of IFC PS2, international labor standards, and PNG labor law. The information received adequately demonstrates acceptable compliance procedures for the Project and its main contractors (see Section 7.3 on roll out to contractors). Additional labor and working condition features are discussed below.

Labor Grievance Management

The labor grievance management process is part of the Project's Procedures & Open Door Communication Policy. Nearly all grievances and issues are initially addressed by immediate supervisors. In the event that an employee is dissatisfied by a response from an immediate supervisor, the employee is entitled to further review by the applicable level of management.

The number of grievances has remained low in 2015 to date. About half of the grievances and issues were found not to have cause. Of those with cause, most were issues rather than grievances, such as payroll queries (high in January 2015 related to housing compensation) and only a few harassment cases required disciplinary action. All queries were resolved within the target period of five days.

Gender Issues

The Project has made a significant effort to recruit and train PNG females. Gender composition of the Project's direct hires includes 102 females and 203 males. Operations & Maintenance (O&M) training is composed of 46 females and 126 males. Contractor staff totaled 1,154 at the time of the IESC visit, out of which 153 are female. The lower proportion of females results primarily from the types of work performed by the contractors with the largest number of employees, much of which is not suitable or attractive to PNG females. The contractors with more suitable jobs, such as accommodation management, have a higher representation of female employees.

Female representation in the business trainings provided by the Enterprise Centre is also significant. Of the 115 currently enrolled, 50 are females. The largest proportion of females is found in the fields of bookkeeping/accounting, customer service, and human resource management, though all training categories have some females enrolled.

Counseling Service

A Workplace Assistance Program has two counsellors (onemale and one female) who provide counselor services to Project staff at the main office in POM (PNG Haus), the LNG plant, and HGCP. The counseling service has been announced in various ways and the counselors use a "roaming with purpose" approach to make staff aware of the service and the availability of counseling on a one-to-one or telephone basis.

The male counselor visits PNG monthly, which includes visits to Port Moresby, the LNG plant and Hides. The female counselor makes weekly visits to Port Moresby and occasionally visits the LNG Plant and Hides. Evidence from the construction phase indicates that women's issues are more domestic, typically involving violence against women, health conditions, and children's welfare. Given the gravity of these issues, the lack of regular female counselling services could impact on families, as well as women's ability to work effectively.

Workforce Engagement

The expanded worker engagement program includes *Haus Bungs*, employee forums, a bi-monthly lunch series at the main office in POM (PNG Haus) featuring employee chosen topics and a Q&A session, one-to-one supervisor-employee discussions, a PNG intranet site, an email "blast" (with day to day information and announcements), and more frequent company events (e.g., celebration of PNG Independence Day/Open Day for employees and families). The topics of the lunch series are chosen by the employees and include a wide range of topics including personal topics, such as mental health and violence in the workplace and at home.

The Project also conducted a Performance Assessment and Development Process for for all PNG employees. Additionally, the Cultural Diversity Training which had focused on expatriate staff is being extended to PNG staff to help them better understand their expatriate colleagues.

7.2.3 Recommendations

1. The IESC requests that information be provided at the IESC 2016 visit on the actual number of workforce grievances and issues by category for each work location.
2. The IESC recommends that the female counselor make more frequent and regular visits to the LNG plant and HGCP sites and that these visits be scheduled and announced to employees.

7.3 PROCUREMENT AND SUPPLIER MANAGEMENT AND ESMP ROLLOUT

7.3.1 Project Strategy

Project commitments for procurement and supplier management are contained in the Procurement and Supplier Management Plan. The objectives of this Plan are the same as they were for construction:

- maximize procurement from local suppliers and economic benefit 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 EMPNG environmental and social standards and commitments are adequately communicated by the contractor to its subcontractors and suppliers and included in their contractual arrangements (as outlined in Table 4.1 of the Plan – *Risks and Impact Mitigation*).

The Procurement Manager is responsible for implementation of this Plan and owns this Plan from an OIMS functional perspective. Contract Owners and Administrators and Site Managers are responsible for contractor management in relation to this Plan on a day-to-day basis. Contract administrators monitor the actual compliance to the conditions of each contract.

7.3.2 Observations

The Project continues to purchase as much as is possible from local suppliers and to use the Enterprise Center to improve the capacity and skills of local businesses. In the IESC's opinion, the main issue for supplier management at this stage of Production is the roll out of the ESMP requirements to contractors.

During this visit, the IESC received a full reporting on the status of the roll out, as requested in the IESC's May report. Significant progress has been made since the last IESC visit with most of the preparatory actions completed and action plans in place to complete the remaining actions, as is shown in Table 7.1.

Table 7.1: Status Preparatory Actions

Step	Action	Person(s) Responsible	Status
1	Conduct ESMP basic awareness sessions for EMPNG CO/CAs.	ESMP Owners	**Complete**
2	Identify ESMP obligations applicable to contractors.	ESMP Owners	**Complete**
3	Complete risk-based categorization / prioritization of impacted suppliers based on scope of work and applicability of EMP/SMPs.	ESMP Owners Procurement	**Complete**
4	Provide Initial overview of rollout strategy	Procurement	**Complete**
5	EMPNG contract owners and administrators	CO/CAs	**Complete**
6	Develop reporting templates for suppliers	Lender Advisor	**Complete**
7	Conduct one-on-one meetings with CO/CAs to: – agree on specific rollout plans, contract amendments required, etc. for each supplier – inform and train on applicable ESMP obligations	Procurement Lender Advisor	**Complete**
8	Complete detailed obligation training with applicable contractors	ESMP Owners Lender Advisor Procurement	**Complete**
9	Gain suppliers' formal acceptance of ESMP obligations. e.g. exchange of letters, initiation of contract amendments (as required).	Procurement	**In progress**
10	Contractors begin reporting on ESMP obligation compliance.	Via Lender Advisor / CO/CAs	**In progress – 3Q data due in Oct**
11	Collect and compile contractor reporting data	Lender Advisor	**In progress – 3Q data due in Oct**
12	Identify suppliers' compliance gaps and develop gap closure plans	CO/CAs Suppliers	**In progress**
13	Steward suppliers' gap closure plans, KPI reporting.	CO/CAs	Planned
14	Process optimization.	Lender Advisor	Ongoing

Specific to the roll out of Labor obligations, reports using the Project provided templates have been submitted by the key contractors (those with the most employees) already trained in roll out procedures.

Most have provided adequate labor and workplace and national content data and actions plans are in place to complete training and improve information provision.

7.3.3 Recommendations

None arising from this review.

7.4 NATIONAL CONTENT - EMPLOYMENT

7.4.1 Project Strategy

The main objective of the Project's National Content strategy is to replace expatriate staff with PNG citizens through both targeted recruitment and training and development. In addition, national content requirements set out in a National Content Exhibit are contained in agreements with key contractors. The exhibit states that contractors shall "develop and implement a Local and National Content Plan in accordance with the requirements in this Exhibit." The Exhibit requires maximization of employment of PNG citizens in all job categories and sourcing of all PNG works will be in accordance with the requirements of this Exhibit and relevant law. First priority is to be given to local persons (proximate to Company locations), second priority to regional citizens, and third priority to persons elsewhere in PNG. It also specifies that contractors should give preference to local Lancos for provision of employees

7.4.2 Observations

Reporting

The data on national content presented to the IESC during this visit is more comprehensive than the data received during the last visit. The main data sets are included, with the exception of data on work location and additional data on gender split for staff contractors (to be provided). The IESC recommended during the visit that some format changes be made to provide a more easily comprehensible and cohesive picture of achievements, as well as for use by the Project in annual and other reports concerning economic benefits to local people. The Project promptly responded with revised formats consistent with the IESC recommendations and the IESC has accepted these changes.

Contractors have been given national content reporting templates and instruction in how to complete them, though follow up will be done as some contractors did not meet 14 October deadline. At the time of the IESC visit, two of the key contractors (Hides Alliance Group and Hides Gas Development Co) had submitted reports.

Table 7.2: Current Statistics on National Content

Employer	% PNG Citizens	% Origins	% Gender
PNG Direct Hires	56	57 national 33 regional 10 local	33 female 67 male
Staff Contractors	60	51 national 37 regional 12 local	TBD
3rd Party Contractors	86	18 national 30 regional 52 local	12 female 88 male

Highlights of National Content

In terms of training, all PNG direct hire O&M staff receive training in skills, procedures, and other work related aspects. Of the O&M training received or in progress, the gender split is 27% are female and 73 % male.

7.4.3 Recommendations

1. Collect additional data and use revised formats for national content reporting.

7.5 WORKFORCE ACCOMMODATION

7.5.1 Observations

Based on presentations and visits to the LNG plant camp and the HGCP camp, the IESC reiterates the positive observations made in the last IESC report (June 2016) and notes that improvements continue to be made, most in response to requests from camp committees and residents. Improvement highlights include:

- Beautification (landscaping) of camp areas
- Access to clinics and vaccination program extended to local workforce that do not reside in the camps;
- Potable water easily available resulting in phasing out of bottled water having a positive environmental impact;
- Project support of camp Social Committees contributing to increased participation and expanded activities;
- Improvements to dining facilities and food item variety;
- Expansion of TV channels available;
- Wi-Fi Internet available in each building; and
- Accommodation rooms fitted with new furniture.

As a result of these improvements and the many informal mechanisms for making and responding to issues and requests, camp related grievances continue to be minimal and easily resolved.

7.5.2 Recommendations

None arising from this review.

8 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 success of both programs has been based on the understanding that community and occupational health and safety are linked and interdependent on one another.

8.1 OCCUPATIONAL HEALTH AND SAFETY

8.1.1 Project Strategy

Occupational health and safety is managed independently of the Production ESMP within the ExxonMobil Operations Integrity Management System (OIMS), which is summarized within the ESMP such that the linkages between OIMS and environmental and social management are well defined. The ultimate goal of managing personnel safety is to achieve an incident-free workplace where "Nobody Gets Hurt". Specific, measurable objectives that contribute to this goal are:

- reduce at-risk behavior (both on and off-the-job) and manage hazards associated with the work environment to significantly reduce Occupational Integrity (OI) risks; and
- hazard identification and correction programs are comprehensive and widely used across the Unit.

OIMS also provides the structure for identifying and managing health exposures with the following goals:

- protect the health of personnel on company premises and the public in proximity to our operations from adverse health effects that may result from our operations; and
- protect the personnel on company premises from environmental and health hazards prevailing in the environment.

The concept of protecting company personnel from health hazards prevailing in the environment is recognition that there needs to be a linkage between occupational and community health programs.

8.1.2 Observations

8.1.2.1 Worker Safety

EMPNG Production safety performance through Q3 2015 continues to be excellent. Production has not had a Lost Time Incident (LTI) since taking over from the construction team with over 10,000,000 man-hours worked as of the end of Q3 2015. EMPNG Production safety performance through Q1 2015 continues to be excellent. At the end of Q3 2015, the average monthly Total Recordable Incident Rate (TRIR) since the start of Production through Q1 2015 is 0.25, well below industry norms. Two Recordable Incidents occurred since last IESC visit:

- Security guards personal dispute leading to physical altercation; and
- Worker slipped on wet rock causing fracture to middle finger.

These incidents are minor for operations of the size of EMPNG. The number of Observations and Interventions (O&Is) continues to be about 10,000 per Quarter and Near Miss incidents reported have also remained at a more or less constant level over the past year, reflecting the stability of EMPNG's program. Both the leading and lagging indicators demonstrate that the EMPNG worker safety program is functional and effective.

8.1.2.2 Worker Health

The occupational health program is founded on monitoring ambient conditions and making sure that workers have appropriate protection, as would be expected for a project of this size, and is a best practice program. What makes PNG LNG special is the need for the monitoring and control of disease given the heavy outside-the-fence disease burden identified from the community health program. Infectious Disease Outbreak Management (IDOM) is a critical component of occupational health, recently supplemented by the addition of FilmArray equipment that can enhance disease diagnostics, and is helping to manage outbreaks of disease. Since the last IESC visit in May, outbreaks of norovirus and gastroenteritis have been identified and effectively managed.

8.1.3 Recommendations

The H&S program continues to be implemented is a "best practice" system. We do not offer any recommendations arising from the present review.

8.2 COMMUNITY HEALTH

8.2.1 Observations

The Production Community Health Program (CHP) plans to continue the relationship established with the PNG Institute of Medical Research (IMR) and work collaboratively to better understand the disease burden of PNG and also how it can impact inside-the-fence health. The last IMR report was issued in March 2015 and since that time efforts have been made to disseminate the results of the ongoing Integrated Health and Demographic Survey System (iHDSS) program. EMPNG supported IMR in the 2015 Medical Symposium in Port Moresby (EM sponsorship 50k PGK – Advancing Women's Health Through Innovation). The next IMR report will be issued in 2016. Go-forward plans are to develop a funding agreement for continuation of iHDSS activities in 2016, to continue to work to identify health issues, and disseminate results to stakeholders.

A component within EMPNG's community development program with a community health focus is a partnership with Baylor College of Medicine and Texas Children's Hospital, which has improved education and training of students, physicians and nurses. Strategic focus has been to improve pediatric and Ob/Gyn patient clinical outcomes, and methods and delivery of maternal and child health services. To date more than $3 million has been invested in this program.

8.2.2 Recommendations

None arising from this review.

APPENDIX A

IESC 15TH MONITORING VISIT – TRIP SUMMARY

TRIP SUMMARY

October 13:

IESC environmental and social team members W. Johnson, L. Johnson and K. Connor arrive in Port Moresby.

October 14:

IESC Environmental and Social Team - Port Moresby – updates on current activities presented by EMPNG. Overnight in POM.

October 15:

IESC Environmental and Social Team - Port Moresby – updates on current activities presented by EMPNG. Overnight in POM.

October 16:

IESC Environmental and Social Team - Port Moresby – Environmental team reviews updates on biodiversity and ecological topics and receives a presentation of a successful conservation project at the YUS Conservation Area, a protected area on the Huon Peninsula, Morobe Province of PNG; social activities involved undertaking a lessons learned workshop for future PNG LNG activities. Overnight in POM.

October 17:

IESC Environmental and Social Team - Port Moresby – visit to LNG Plant. Overnight in POM.

October 18:

IESC Environmental and Social Team - Port Moresby – visit to areas where aspects of PNG culture and biodiversity could be reviewed in the field. Overnight in POM..

October 19:

IESC Environmental – flies to Komo, inspects Komo remedial works, drives to HGCP Camp with pipeline flyover in afternoon; overnight at HGCP camp; IESC Social – reviews Plant site community development project; overnight at POM.

October 20:

IESC Environmental – tours of Spineline, HGCP perimeter, Hides Waste Management Facility; drive to Komo; IESC Social – travel to Komo, meeting with HGCP Camp Manager, review Upsteam community development projects, drive to Komo; entire team returns to POM; overnight in POM.

October 21:

Miscellaneous communication with EMPNG staff by entire team and preparation for Closeout meeting at hotel in POM.

October 22:

Closeout meeting in morning;

IESC team departure.