



PNG LNG Environmental and Social Report – Annual 2017

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PNG LNG is operated by a subsidiary of ExxonMobil in co-venture with:





*Utilities Technician, Jonathan Bebegu and Mechanical Technician, Junias Warpin
at the LNG Plant Marine Terminal*

Executive summary

"Our operations continue to perform at exceptional levels of reliability. We have had another great year because of the collective support and hard work of our workforce, co-venturers, suppliers, landowners and government."

Andrew Barry, Managing Director,
ExxonMobil PNG Limited

ExxonMobil PNG Limited (EMPNG) has safely produced more than 27 million tonnes of Liquefied Natural Gas (LNG) and delivered 374 LNG cargoes since production began.

EMPNG's facilities safely operated at 20 percent above the original design capacity in 2017, with more than 8.2 million tonnes of LNG produced, compared to the original capacity of 6.9 million tonnes per annum. A total of 110 LNG cargoes were delivered to customers in Asia during 2017.

374
LNG cargoes
delivered to
customers

A subsidiary of Exxon Mobil Corporation, EMPNG manages the operation of the Papua New Guinea (PNG) LNG production facilities on behalf of co-venture partners: Oil Search Limited, Kumul Petroleum Holdings Limited, Santos Limited, JX Nippon Oil and Gas Exploration Corporation, Mineral Resources Development Company Limited and their affiliates.

This Environmental and Social Report provides a progress update on EMPNG's social and environmental performance from 1 January – 31 December 2017.

Up Close: Papua New Guinea earthquake

On 26 February 2018, a 7.5 magnitude earthquake struck Papua New Guinea's Highlands Province.

EMPNG supported relief efforts for the many communities who lost loved ones and property in the earthquake. This included working with local communities and relief agencies to provide essential supplies and re-establish health facilities and food gardens impacted by the earthquake. The company also provided resources to help the Papua New Guinean Government address the significant task of restoring roads in the Highlands region. EMPNG's parent company, Exxon Mobil Corporation donated US\$1 million (nearly PGK3.5 million) to support the humanitarian relief effort.

EMPNG was able to quickly account for all the company's employees and contractors at Upstream facilities following the earthquake and confirmed that all workers on-site were safe.

EMPNG Managing Director, Andrew Barry, said the company withstood the earthquake extremely well because of the high quality design and construction of the facilities and the quick response by workers.



"The initial rapid response by our workforce enabled us to keep people safe, minimise damage to equipment and ensure there was no release of hydrocarbons.

We are now committed to supporting the long-term recovery of earthquake-impacted communities around the Hela, Southern Highlands and Western provinces and will continue working closely with relief agencies and the National Disaster Centre in efforts to rebuild these communities."

Andrew Barry
Managing Director,
EMPNG



For further information visit
www.pnglng.com

Production

EMPNG recorded an industry-leading production reliability with less than one percent unscheduled downtime during 2017.

Two production milestones were achieved in May, with delivery of the 300th LNG cargo and 1 trillion cubic feet of gas produced from the Hides Gas Conditioning Plant (HGCP) since production began.

EMPNG has started work on Phase 2 of PNG LNG, known as the Angore Gathering System. Located in the Upstream area within the Hela Province, the Angore Gathering System will consist of surface facilities and approximately 11 kilometres of pipelines that connect the two production wells installed at Angore Wellpad A to the HGCP. Pre-construction surveys commenced in June 2016 and construction began in early 2017. Production is expected to commence in 2019.

In November, EMPNG Managing Director, Andrew Barry, opened a new 'Building One – One Team' office at the LNG Plant site to enable greater collaboration among the Operations, Maintenance, Engineering, Warehouse, Laboratory and IT teams in a centralised work environment.

Safety and health

The LNG Plant has achieved a milestone of more than 10 million hours worked without a Lost Time Incident since the start of production. The LNG Plant also completed two significant maintenance campaigns for the refrigeration gas turbines, with more than 75,000 hours worked without a recordable injury.



Operations Technician, Janeth Gurame, at the HGCP

Upstream area teams achieved 263 consecutive days without a recordable injury in 2017.

Emergency equipment has been upgraded in worksite clinics with the purchase of six new portable multi-purpose defibrillators and monitors, and an upgraded SimMan® patient simulator mannequin specifically designed for medical training. A new Papua New Guinean doctor was appointed to the HGCP clinic during 2017.



Celebrating the 300th LNG cargo delivery at the LNG Plant

EMPNG continues to maintain the 'Partnership in Health' agreement with the Papua New Guinea Institute of Medical Research. A key component of the agreement is the integrated Health Demographic Surveillance System (iHDSS), which has been used to monitor the impact of PNG LNG on the health of communities within Hiri and Hides between 2007 and 2017. The Papua New Guinea Institute of Medical Research completed a review of the iHDSS during 2017 with support from EMPNG. The review found no significant change in underlying morbidity patterns as a result of PNG LNG.

It concluded that the iHDSS had provided comprehensive health data regarding illness and death patterns in Papua New Guinea that could be used by the National Department of Health to identify and target specific intervention programs to improve health outcomes in the country. It also found that educational attainment, particularly for women, improved in Hiri, while some positive economic consumption changes, such as the use of bank accounts and purchase of improved housing materials, were recorded in both Hiri and Hides.

EMPNG continued its partnership with the Texas Children's Hospital during 2017, with a focus on maternal and child health, improving healthcare education and strengthening the public health program in Papua New Guinea.

Environment

In partnership with ecosystem management specialist Biotropica Australia and the Papua New Guinea National Agricultural Quarantine and Inspection Authority, EMPNG launched *Exotic Plants of the Kikori River Basin* during 2017. The book aims to help identify invasive weed species in the Kikori River Basin. Along with 800 copies of the book, EMPNG has provided weed identification cards to the Authority to support invasive species awareness with their inspection teams.

In March, some 55 Papua New Guinean conservation representatives attended a Communicating Conservation Practice in Papua New Guinea workshop. The workshop covered topics such as the protection of endemic species, the trade of endemic and other endangered species and the management of crocodiles in the Sepik River.

As part of EMPNG's biodiversity offset program, the University of Papua New Guinea has finalised course programs for a Postgraduate Diploma and a Master's degree in Conservation Management in partnership with EMPNG and the Mama Graun Conservation Trust Fund. Two conservation certificate courses were delivered in 2017, with the first involving 25 participants from the Kokoda Initiative. The first four scholarships for the new Master's degree in Conservation Management were awarded in December.

EMPNG held a workshop at the LNG Plant during 2017 to examine the company's long-term Waste Management Strategy for sustained 30-year operation. The workshop included discussions on potential commercial opportunities and improvements to solid waste and wastewater disposal methods.

EMPNG also reached an agreement with Oil Search Limited for both companies to support each other with managing waste in the Upstream area. As part of the agreement, Oil Search Limited is helping process EMPNG waste from Moro B Camp.

Workforce development

By the end of 2017, 2580 employees and contractors were working in production-related roles with EMPNG. Over 2100 of these were Papua New Guinean citizens, who comprised 82 percent of the workforce. Third party contractors represent 70 percent of the production workforce, with nearly 90 percent of contract workers being Papua New Guinean.

2580
workers in
production roles

The fourth intake of 16 trainees began the Operations and Maintenance training program at the Kumul Petroleum Academy in January and completed junior technician requirements in December. They will begin work at EMPNG facilities in January 2018, with nine working in operations, three in instrumentation, three in mechanical and one as an electrical technician. This is the first intake of trainees to be sponsored by EMPNG to complete their training through the Kumul Petroleum Academy.

Previous Operations and Maintenance training program intakes were trained in Canada, Malaysia and Australia.

During 2017, the equivalent of 80,200 hours of training were delivered to some 7890 employee and contractor participants through 2154 courses.

More than 90 percent of all training hours were delivered to Papua New Guinean citizens. Contractors achieved a milestone with the equivalent of 100,000 hours of training delivered since the start of production.

80,200
training hours
delivered

Supporting Papua New Guinean businesses

Twelve landowner companies (Lancos) and some 200 non-Lanco Papua New Guinean businesses are engaged by EMPNG for production-related activities.

Lancos provide services such as labour hire, transportation, maintenance and vegetable supplies, while non-Lanco businesses provide security, freight and logistics, maintenance supplies, medical and other services.

During 2017, EMPNG's total in-country spend with Papua New Guinean businesses was more than PGK477.5 million (US\$147.8 million). Of this, almost PGK129.3 million (US\$40 million) was spent on Lanco services.

Since the start of production, EMPNG has spent almost PGK2.3 billion (US\$705 million) on Papua New Guinean services, with PGK581.6 million (almost US\$180 million) spent with Lancos.

Ninety small and medium-sized enterprises (SMEs) participated in the Enterprise Centre's third biennial SME Leadership Awards in October.

The Awards recognise Papua New Guinea's best performing SMEs in categories such as governance, business management, quality control, assets management, corporate image and safety, health and environment.

A new award category, 'Best Woman Owned SME', was introduced in 2017 to recognise women in business.

The inaugural Best Woman Owned SME Award went to Maryelzs Orchid Inbloom Limited, while Nares Engineers Limited was named the 2017 Overall Top Performing SME. Businesses participating in the SME Leadership Awards had completed business assessments through the Enterprise Centre during 2016 and 2017.

The Enterprise Centre delivered the equivalent of 6718 training days during 2017 to Lancos, women-owned business and other Papua New Guinean businesses, with funding support from EMPNG. They also conducted 56 business assessments during 2017, including 30 Lanco assessments and seven for women-owned businesses.

More than 860 Papua New Guinean entrepreneurs sought assistance through the Enterprise Centre in 2017, with almost 19,000 entrepreneurs supported since the Centre opened in 2010. The equivalent of 32,000 training days and 489 business assessments have been conducted at the Centre to date.

2.3
billion Kina
spent on Papua
New Guinean
services



Radio Operator, Doko Auda from Lanco Laba Security Services Limited, at the LNG Plant operations centre



Members of the Papua New Guinean national parliament and Chamber of Mines and Petroleum representatives at the LNG Plant

Social development

During 2017, EMPNG spent PGK44.8 million (US\$13.9 million) on community investment programs that encompassed education, health, community infrastructure and environmental projects.

44.8
million Kina
invested in
communities

During the year, infrastructure was provided to three LNG Plant site villages, with the handover of the Lea Lea Community Centre, a new double classroom for Papa Preschool and a new Women's Resource Centre in Boera Village.

In the Upstream area, a fully refurbished health centre was provided in Baguale Village, five classrooms were refurbished at Juni Primary School and a new double classroom was handed over to Kikori Primary School.

Furniture, consisting of school desks, chairs and teacher's tables, were donated to nine schools in the LNG Plant site villages during the year. The furniture donations will improve the learning environment for students.

EMPNG has also signed a funding agreement with the Central Provincial Government to implement the School Board of Management training program in Central Province schools.



EMPNG Managing Director, Andrew Barry and Central Provincial Administrator, Gei Guni Raga signing the School Board of Management funding agreement

The training program is based on the *School Board of Management Training Manual*, which was funded by EMPNG in partnership with the Central Provincial Government in 2016. It aims to improve board governance and leadership capabilities in schools.

The current EMPNG donation will enable the training to be delivered to school boards of management over the next two years and will include a train-the-trainer component, along with monitoring and evaluation of lessons learned from the Manual.

Additionally, the company is supporting the expansion of the School Board of Management training program to Hela Province schools.

EMPNG continues to support projects that help the livelihoods of local communities. For example, approximately 250 households involved in EMPNG's community livelihood improvement project produced almost 30 tonnes of fresh fruit and vegetables, which earned them more than PGK55,000 (US\$17,022) at market days during 2017.

In October, more than 2000 people attended International Youth Day celebrations in Pimaga in the Southern Highlands Province. The 2017 International Youth Day theme was 'Youths for Peace'.

During the celebrations, the Kuige Youth Training and Development Centre was officially opened. The Centre provides technical training for youths in carpentry, electrical and mechanical skills. It also aims to provide access to distance education for Grades 7 to 10 under the Papua New Guinean Government's Flexible Open and Distance Education Program.

Stakeholder and community engagement

Following Papua New Guinea's national election, 34 members of the new parliament received a guided tour of the LNG Plant site in August as part of the Members of Parliament orientation week.

In September, the first royalty payments of over PGK15 million (US\$4.6 million) were paid to 90 landowner clan accounts in the LNG Plant site area as part of the Umbrella Sharing Agreement between the State and landowners, which provides for the sharing of benefits from LNG production.

EMPNG continues to engage with communities to keep them informed about production activities and to collaborate on community support programs.

Since the start of production, EMPNG has conducted almost 30,000 engagements with stakeholders in some 230 communities, including more than 23,000 informal engagements and almost 7000 formal engagements.

30,000
engagements in
230 communities



Papa Primary School students with their road safety awareness brochures presented during a community engagement

During 2017, the company conducted 2229 formal engagements and 4836 informal engagements in 205 communities. These engagements involved more than 53,450 attendees. Topics covered included community development support programs, the Angore Gathering System and road and marine safety.

EMPNG remains focused on building a strong foundation that will help increase jobs for Papua New Guineans, improve local business opportunities, expand community development and contribute to increased government revenues for the long term.



"We have a big job ahead of us to capture the next round of opportunities. With the support of all our partners and stakeholders we are confident we can achieve our shared vision for the future."

Andrew Barry
Managing Director,
EMPNG

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For the purposes of this Report, the currency conversion rate used, between Papua New Guinea Kina (PGK) and United States Dollars (US\$) is 0.3095 [PGK1 = US\$0.3095]. This rate is as published by the Bank of Papua New Guinea at 31 December 2017.



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