

ExxonMobil

PNG LNG Environmental and Social Report – **Annual 2018**





ExxonMobil

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



Cover image: Operations Technician, Ramona Terence, from the third intake (2015) of the Operations and Maintenance training program at the LNG Plant

© ExxonMobil PNG Limited 2019

Corporate Separateness Notice: Nothing in this material is intended to override the corporate separateness of local entities. Working relationships discussed in this material do not necessarily represent a reporting connection, but may reflect a functional guidance, stewardship, or service relationship. Where shareholder consideration of a local entity matter is contemplated by this material, responsibility for action remains with the local entity. The terms corporation, company, affiliate, ExxonMobil, Exxon, Mobil, Esso, our, we and its, as used in this material may refer to Exxon Mobil Corporation, to one of its divisions, to the companies affiliated with Exxon Mobil Corporation, or to any one or more of the foregoing. The shorter terms are used merely for convenience and simplicity.

Data adjustments may occur after publication and as such, data may be revised in future Reports.

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 2018.



472 LNG cargoes delivered to customers

89,080 training hours delivered

34,500 engagements in 289 communities

PGK 3 billion+ spent on Papua New Guinean services

PGK 80 million invested in communities in 2018

CAUTION: HEIGHT CLEARANCE 7 M

Executive summary

Papua New Guinea is rapidly moving forward on a path of sustainable national growth. It is showing to the world what ExxonMobil has known for some time – that it is a great place to invest and do business.

A subsidiary of Exxon Mobil Corporation, ExxonMobil PNG Limited (EMPNG) manages the operation of the Papua New Guinea Liquefied Natural Gas (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 to 31 December 2018.

Production

EMPNG produced almost 7.4 million tonnes of Liquefied Natural Gas (LNG) and delivered 98 LNG cargoes in 2018. This brings EMPNG's total production to 35 million tonnes of LNG and 472 LNG cargoes.

Production activities were significantly impacted by the 7.5 magnitude earthquake that occurred near the Hides Gas Conditioning Plant (HGCP) on 26 February 2018. Immediately following the earthquake, EMPNG's Production team safely shut down HGCP processing facilities to assess and repair damages. The LNG Plant was also shut down while repairs were completed at the HGCP. Production facilities were restored and restarted within eight weeks of the earthquake. This included the second warm start in the LNG Plant's history and the first import of LNG into the LNG Plant to keep key storage and loading systems cool. The restart of the LNG Plant was conducted safely by a predominantly Papua New Guinean team of operations and maintenance technicians and engineers.

New production records were achieved in the second half of the year due to greater efficiencies achieved through maintenance activities undertaken during the shutdown period. This included a record production day of 9.2 million tonnes per year equivalent produced on 16 August and a record production month of 9.0 million tonnes per year equivalent produced in September at the LNG Plant.

| Image opposite: LNG Plant



| An LNG vessel moored for loading at the LNG Plant Marine Terminal

Safety and health

EMPNG achieved its strongest year for safety performance since production began with a Total Recordable Incident Rate of 0.11 for the year. No Lost Time Incidents occurred in 2018 despite the challenging activities required in response to the earthquake. The LNG Plant was recognised at the Papua New Guinea Chamber of Mines and Petroleum's inaugural Chamber Awards for achieving five years and more than 13 million hours worked without a Lost Time Incident.

For the fifth consecutive year, EMPNG's Supply Chain and Warehousing team was awarded ExxonMobil's Procurement Global Supply Chain Gold Star Award for outstanding safety performance.

During 2018, EMPNG's Medicine and Occupational Health team was recognised with an ExxonMobil Global Health and Safety Award for their contribution to raising mental health awareness in the workplace.

Environment

EMPNG has published the first book that provides comprehensive biodiversity information for the Hela and Southern Highlands provinces in the Upstream area. The book *Biodiversity Assessment of the PNG LNG Upstream Project Area* includes long term high biodiversity data sets for Papua New Guinea obtained through a 2015 study in the Upstream area, as well as methods used to undertake biodiversity surveys. At least 579 animal and plant species were documented during the surveys. This includes several dozen species that were previously unknown to science.



| Doria's tree kangaroo (*Dendrolagus dorianus*)

EMPNG's Biodiversity team shared results of biodiversity monitoring in Papua New Guinea with participants at the Society of Petroleum Engineers International Conference and Exhibition on Health, Safety, Security, Environment and Social Responsibility held in Abu Dhabi, United Arab Emirates in April 2018. The EMPNG presentation was selected as a 'paper of particular interest' by Conference organisers.

Some 225 conservation representatives from Papua New Guinea participated in Communicating Conservation workshops during 2018.

In August, a meeting was conducted that brought together 300 community members and community leaders of 10 villages from the lower Kikori River region. In addition to the meeting, more than 1000 people from nine villages participated in resource mapping exercises as part of the Biodiversity Offset Program.

The first recipients of the Masters in Conservation Science scholarship commenced their studies in 2018.

More than 20 EMPNG employees participated in a complex major spill response exercise that spanned both Lea Lea and Papa villages, during 2018. The exercise included the first deployment of a Rigid Inflatable Boat in a river and open sea environment, deployment of a shoreline collection boom at Kahiru Beach in Papa Village, and deployment of an Exclusion Boom along Lea Lea River in Lea Lea Village.

During 2018, EMPNG assessed four third party waste contractors in Lae and three in Port Moresby, with four of the seven companies approved to process production waste. The approved companies are being used to recycle scrap metal and restricted waste such as used batteries. In the Upstream area, operational waste volumes increased slightly during 2018 compared to 2017. The increase was due to waste resulting from earthquake damage.

Eighteen environmental non-conformances were raised for exceedances of operating criteria at the LNG Plant in 2018, with a further 13 in the Upstream area. Most of the non-conformances relate to exceedances of water quality criteria. Water management and treatment systems continue to be monitored and adjusted to meet varied operating conditions.

The New Guinea Binatang Research Centre has been engaged to revise the company's weed monitoring method and conduct field surveys in the Upstream area along the pipeline Right of Way. The revised monitoring method involves field teams walking 100-metre transects to identify weed species on the pipeline Right of Way. Data gathered using this transect approach is intended to improve data analysis and trending of the diversity and distribution of weed species within PNG LNG's footprint.

Workforce development

By the end of 2018, 3236 employees and contractors were working in production-related roles with EMPNG. More than 2770 of these are Papua New Guinean citizens, who comprise 86 percent of the workforce.

Forty-eight new Papua New Guinean employees were recruited during 2018 in the areas of operations, maintenance, engineering, technical, human resources, procurement, information technology, law and safety, health and environment.

Seven Papua New Guinean employees were promoted to supervisory or managerial roles during the year.

Since 2011, more than 160 Papua New Guinean employees have been given an overseas assignment as part of the Operations and Maintenance training program, Early Career Graduate interchange program or through international opportunities.

Eleven new university graduates were employed by EMPNG in 2018. They had completed degrees in disciplines such as civil, mining, electrical and industrial engineering.

Throughout 2018, EMPNG engineers had the opportunity to further develop their skills through overseas training. This included: witnessing a gas turbine engine teardown in Massa, Italy; materials and corrosion training in Houston, United States; regional response training in Hong Kong; and process controls training in Houston, Kuala Lumpur and Brisbane.

Since the first intake in 2010, more than 200 Papua New Guineans have been recruited through EMPNG's Operations and Maintenance training program. The fourth intake of 16 Operations and Maintenance trainees, who joined the program in August 2016, completed their training in December 2017 and started work as Junior Technicians at the HGCP and LNG Plant in January 2018. This was the first intake of EMPNG sponsored trainees to undertake their training through the Kumul Petroleum Academy in Port Moresby rather than at EMPNG-provided training facilities. Twenty-nine trainees were selected for the fifth intake of the training program, with training commencing at the Kumul Petroleum Academy in January 2019.

In June, Control Room Technician, Noah Pingin, became the first trainee from the Operations and Maintenance training program to be promoted as a supervisor, replacing an expatriate worker. By the end of December, 16 out of 22 Control Room Technician positions and all three Maintenance Scheduler positions were filled by Papua New Guinean citizens, with women occupying eight of these positions.

During 2018, the equivalent of more than 89,000 hours of training were delivered to more than 9600 participants through some 2400 courses. Ninety-two percent of all training hours were delivered to Papua New Guinean citizens.

Supporting Papua New Guinean businesses

Four Papua New Guinean businesses were recognised for their contribution to digital innovation at the Enterprise Centre's inaugural Micro, Small and Medium Enterprise Digital Innovation Awards held in September.

The Enterprise Centre assessed some 100 companies from Port Moresby, Lae and Madang for their use of innovative digital technologies. The four winning businesses were chosen because they had either developed applications or used digital technology platforms for their business operations.

In 2018, EMPNG engaged 16 landowner companies (Lancos) and some 250 non-Lanco Papua New Guinean businesses for production-related activities. This is an increase compared to 12 Lancos and 200 non-Lanco businesses in 2017 due to goods and services needed for the Asia Pacific Economic Cooperation (APEC) and earthquake recovery efforts.

EMPNG's total in-country spend with Papua New Guinean businesses in 2018 was more than PGK567.3 million (US\$175.6 million) compared to PGK477.5 million (US\$138.5 million) in 2017. Of this, almost PGK184.3 million (US\$57 million) was spent on Lanco services compared to PGK129.3 million (US\$40 million) spent on Lanco services in 2017.

Since the start of production, EMPNG has spent more than PGK3 billion (US\$928.5 million) on Papua New Guinean services, with PGK866.5 million (US\$268.2 million) spent with Lancos.



| Operations Integrity Management System Technician, Wesley Spinder (left) and Field Operations Technician, Petrus Paul, at the HGCP

Social development

EMPNG spent PGK80 million (US\$24.8 million) on community investment programs in 2018 involving education, health, community infrastructure and environmental projects. This included PGK324,730 (US\$100,500) donated to the Port Moresby Nature Park for projects such as the pig-nosed turtle (*Carettochelys insculpta*) 'Head Start' conservation program, a new 'Plumes of Paradise' precinct, which opened in October and the school excursion program that involved some 20,000 students during the year.



EMPNG Senior Field Superintendent, Jazz Peters, reads to students from Porebada Elementary School as part of National Literacy Week activities

In collaboration with the Australian National University Enterprise, EMPNG is providing the community livelihood improvement project for another three years. The community livelihood improvement project provides education about seeds and planting techniques, crop management, poultry production and food and health hygiene. It helps community members improve their livelihoods and standards of living through generating household and group income from small enterprise development. Some 500,000 vegetable cuttings, 490 kilograms of quick growing corn seeds and 5000 garden tools were distributed through the project to help long term recovery efforts following the earthquake. This reached more than 3500 households in communities along the pipeline Right of Way at Benaria and in Hides. As this Report was being published, Para Primary School was reopened in the Upstream area following earthquake repairs conducted with support from EMPNG.

A partnership between EMPNG and Lanco Laba Holdings Limited has resulted in three new classrooms for more than 180 Boera Elementary School students.

The classrooms are located in a new building that also includes office space for teachers. The classroom project was agreed in collaboration with Gas Resources PNG LNG Limited, a subsidiary trust company of Mineral Resources Development Company that distributes royalty and equity payments for landowner communities in the LNG Plant site villages.

Together with Pacific Sports Media Marketing, EMPNG supported National Literacy Week activities at schools from Papa and Lea Lea, Boera and Porebada villages leading up to International Literacy Day on 8 September.

The Advancing PNG: Women Leaders Network hosted its first women's empowerment workshop in September with 19 women who are recognised as strong leaders within their communities. The theme of the workshop was 'personal and professional leadership'. Workshop participants were provided with information about leadership and gained skills in promoting strong institutional systems, management practices and programs. The workshop, supported by EMPNG, coincided with the APEC Women and the Economy Forum.

EMPNG has donated PGK161,550 (US\$50,000) to the Pacifica Women Network Trade Centre initiative, which provides a platform to bring entrepreneurial women together from across the Pacific and give them access to trade. The Network officially opened a trade centre in Port Moresby in July and attracted a large number of enquiries from women in micro and small businesses. The trade centre currently has 45 stalls. EMPNG's funding will enable the addition of another 110 stalls, including an outdoor market place. This will help generate greater networking opportunities for women in business and improve regional trade.



EMPNG Science Ambassador, Nathaniel Tuba, describing rock types to students at Port Moresby International School during a rocks and geology session

More than 600 students from nine schools participated in the ExxonMobil Science Ambassador Program during 2018.

A new energy topic was introduced in collaboration with the Kokoda Track Foundation to teach students about oil, gas, wind, hydro and solar energy. During these sessions students had the chance to build solar lights in the classroom.

Through its partnership with the Texas Children's Hospital and Baylor College of Medicine, EMPNG continues to support the improvement of maternal and child health outcomes in Papua New Guinea. Since the partnership began in 2014, more than 1200 mentoring hours have been given to Papua New Guinean healthcare professionals by Texas Children's Hospital doctors, and more than 870 undergraduate and 105 postgraduate students have received specialist paediatric education.



| APEC Voices of the Future participants at the LNG Plant

The Texas Children's Hospital doctors have also treated some 3000 children for malnutrition in Papua New Guinea.

Some 470 EMPNG employees volunteered 1870 hours for 18 Papua New Guinean organisations during 2018.

A group of EMPNG volunteers was among nearly 2000 people who joined the inaugural Bel isi PNG Elimination of Violence Against Women Walk in November. The walk aimed to raise funds to help keep safe houses open so they could continue to provide essential services for women and their families who have experienced violence.

Stakeholder and community engagement

A public private partnership has been announced to develop a large-scale commercial agricultural venture in the Hela Province. EMPNG is providing support to the project, which will be led by Innovative Agro Industry in partnership with the Mineral Resource Development Company; the Hela Provincial Government; and Tari-Pori, Koroba-Kopiago and Komo Margarima local level governments.

The proposed venture aims to train and equip small-holder farmers to produce stock feed and vegetables. The venture has the potential to positively impact as many as 5000 small-holder farmers in Hela Province over the next five years and beyond, as well as diversifying the economic base and encouraging the development of additional small enterprises in Hela Province. A detailed feasibility study is being developed and includes an analysis of soil and growing conditions, a detailed design of the farmer training program, the establishment of a training centre and finalisation of the commercial venture structure.

EMPNG has conducted more than 34,500 engagements with stakeholders in some 289 communities, including almost 9300 formal engagements and more than 25,000 informal engagements, since production began.

During 2018, 4885 engagements were conducted in 213 communities, comprising 2309 formal and 2576 informal engagements. These engagements involved almost 46,900 attendees.

In the Upstream area, engagements focused on disaster relief efforts following the earthquake. This included supplying clean drinking water and tarpaulins to local communities as well as providing agricultural support.

At the LNG Plant site villages, engagements covered community development support programs, marine safety and infrastructure projects with schools.

For the first time, the LNG Plant hosted consecutive days of advocacy tours to accommodate more than 1100 students from the Australia-Pacific Training Coalition in Port Moresby. The tours were held in early September and consisted of eight groups of 145 students and their teachers. The students, who were studying courses at the college in carpentry, cookery, hospitality, diesel fitting, electrical, fitting and machinery, light vehicle mechanics and metal fabrication, were able to learn how these roles applied at the LNG Plant.

EMPNG also hosted 70 APEC youth representatives from 21 countries and was involved in numerous APEC-related events including the Women and the Economy Forum and CEO Summit.

EMPNG is moving into 2019 with a continued focus on safety and ongoing collaboration with the Government, businesses and communities of Papua New Guinea.

Project headquarters

ExxonMobil PNG Limited
Jacksons Parade
Port Moresby
National Capital District
Papua New Guinea

GPO Box 118
Port Moresby
National Capital District
Papua New Guinea

Email pnglngproject@exxonmobil.com | Web www.pnglng.com



Printed on 55% recycled FSC® Mix Certified paper.



Prepared by IDP Consulting (Singapore) Pte. Ltd.



*Energy for the World. Opportunity for Papua New Guinea.
Eneji Bilong Wol. Luksave Bilong Papua Niugini.*