



# PNG LNG Environmental and Social Report – **Annual 2023**



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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 (USD) is 0.2683 [PGK1 = USD0.2683]. This rate is as published by the Bank of Papua New Guinea as at 31 December 2023.

# TO OUR STAKEHOLDERS

Having assumed my position as Chairperson and Managing Director of ExxonMobil PNG Limited (EMPNG) back in June, I'm both proud and humbled to share our extraordinary team's accomplishments in 2023 and our excitement about the future of Liquefied Natural Gas (LNG) in Papua New Guinea.

The roadmap of Papua New Guinea's bright LNG future is still being written and like any journey, it involves many great discoveries.

To date, Papua New Guinea Liquefied Natural Gas (PNG LNG) is the largest single business investment in Papua New Guinea's history. It has helped launch a new industry and, in the process, delivered PGK24.4 billion back to the nation and its landowners since first gas in 2014.

Throughout the operations phase, and more than 125 million hours that have been worked, EMPNG has maintained its impressive safety performance with 2023 being the safest year recorded since the start of production with a Total Recordable Injury Rate of 0.03. At the same time, the company continues to optimise production operations and achieved a significant milestone during the year with the 1000<sup>th</sup> LNG cargo shipped to our customers in Asia.

In collaboration with government authorities, non-government organisations and communities, EMPNG is also making significant strides in helping to preserve Papua New Guinea's valuable biodiversity. During 2023, the largest number of conservation deeds ever signed at one time in Papua New Guinea was achieved, resulting in a commitment to protect 20,000 hectares of land in the Lower Kikori Region.

This could not have been possible without EMPNG's highly skilled workforce. We truly believe our workforce is our greatest asset, and we are immensely proud that almost 90 percent are Papua New Guinean citizens, including many Papua New Guinean women in leadership positions. This number is significantly higher than the industry standard.

Our workforce of more than 3700 EMPNG employees and contractors doesn't just deliver, they are setting an industry-leading LNG performance standard, and are relentless in their drive to get better every day both at work and through community-based volunteer activities.

EMPNG's supplier relationships also continue to flourish as we maintain engagements that help to grow the skills and capacity of Papua New Guinean businesses.

Our social investment programs are making a positive difference to many local communities, thanks to the collaborative efforts of community-based organisations, government, civil society groups and international donor agencies.

It is through robust collaboration with all levels of government, landowners, local businesses, and industry peers that we have been able to not only bring this project to fruition but establish a world-class operation.

Operating in Papua New Guinea is a privilege, so we are guided by our belief that the benefits associated with resource development should be shared with the people of this country.



“

Our success is, and always will be, a collective one that is the result of the combined efforts of EMPNG, the government and people of Papua New Guinea, which will ultimately deliver a legacy of a brighter future for many generations of Papua New Guinean citizens through sustained growth for the nation.

*Tera Shandro*

Tera Shandro, Chairperson and Managing Director,  
**ExxonMobil PNG Limited**

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### *About this Report*

This *PNG LNG Environmental and Social Report – Annual 2023* provides information about ExxonMobil PNG Limited's safety, health, environment and social management performance during production. It forms part of PNG LNG's commitment to keep the Government and citizens of Papua New Guinea, interested civil society organisations and other stakeholders informed of production activities.

Printed copies are available.

# ExxonMobil

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

**Santos**





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# EXECUTIVE SUMMARY

ExxonMobil PNG Limited has achieved more than 125 million hours of work since the start of production, with 21 million hours worked in 2023.



The Papua New Guinea Liquefied Natural Gas (PNG LNG) completed its 1000<sup>th</sup> LNG cargo shipment in 2023 and maintained a reliable energy supply for customers across Asia. At the same time, PNG LNG continued to help Papua New Guinea realise career, business, and community development opportunities for its people.

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

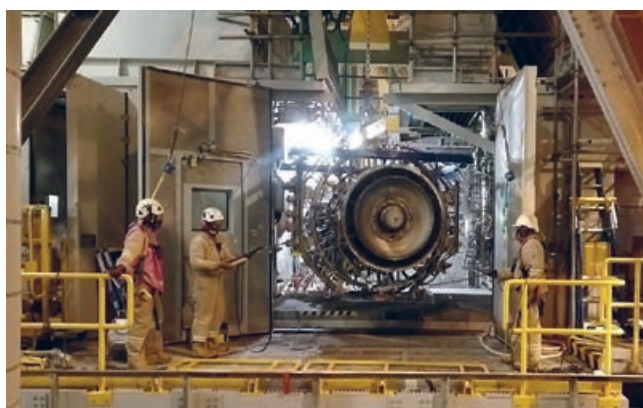
This Environmental and Social Report provides an update on EMPNG's environmental and social performance from 1 January to 31 December 2023.

## Production

In addition to the 1000<sup>th</sup> LNG cargo shipped to China on the LNG carrier *Gigira Laitebo* in September, a second major production milestone was achieved during 2023 with the completion of the Angore Gathering System pipeline installation from Wellpad C to the Hides Gas Conditioning Plant (HGCP). By the end of 2023, PNG LNG safely produced 8.5 million tonnes of LNG, with 113 LNG cargoes and a record 13 naphtha cargoes loaded. More than 77.8 million tonnes of LNG had also been produced since the start of production, resulting in 1035 LNG and 99 naphtha cargoes loaded for customers in Asia.

In March, a remotely operated vehicle survey was conducted of the PNG LNG subsea pipeline to confirm its integrity. The survey was undertaken by co-venturer Santos using Shelf Subsea's vessel *Southern Star*.

In May, the largest maintenance scope of work was completed at the HGCP since the PNG LNG construction phase. This was achieved through a planned curtailment in the production volume (rate reduction) enabling the first major maintenance to be conducted on HGCP top-tier machinery. A rate reduction for major maintenance was also completed at the LNG Plant during the year.



**Workers conducting maintenance on the LNG Plant Train 2 mixed refrigerant compressor turbine as part of the rate reduction scope**

## 2023 PERFORMANCE HIGHLIGHTS

### PRODUCTION

# 113 cargoes

of LNG loaded in 2023 bringing the total loaded since the start of production to 1035 cargoes of LNG

# 13 cargoes

of naphtha loaded in 2023 bringing the total loaded since the start of production to 99 cargoes of naphtha

# 8.5 million

tonnes per year equivalent of LNG produced in 2023 bringing the total to 77.8 million tonnes per year equivalent of LNG produced since production began

## National content

EMPNG maintains a firm commitment to national content, with Papua New Guinean citizens representing 88 percent of PNG LNG's 3714 employees. Papua New Guinean women account for 20 percent of the Papua New Guinean workforce and also represent 96 percent of all women working on PNG LNG operations.

Ongoing training and career development opportunities are provided through both face-to-face and online methods. During 2023, EMPNG and its contractors delivered training opportunities to more than 12,300 participants over the equivalent of 225,900 hours through some 2600 courses. Papua New Guinean citizens accounted for 93 percent of training participants, of whom 29 percent were women.

The highly successful Operations and Maintenance training program entered its second decade after celebrating the program's tenth year in 2022.

During 2023, 18 Papua New Guinean citizens, comprised of 13 men and five women, became the ninth intake of trainees and started their training at the Kumul Petroleum Academy. Six of the trainees are completing the instrumentation discipline, while the remaining 12 are studying the operations discipline.

Papua New Guinean university and college graduates are recruited for full time employment with EMPNG and receive on-the-job training to help them develop their careers with the company.

Recruitment is conducted through three annual programs: the Graduate Engineering Program, Graduate Management Development Program, and Intern Engineering Program.

In 2023, 14 engineers were recruited through the Graduate Engineering Program, including 13 new graduates and one experienced engineer. The recruits consisted of four civil and integrity engineers, four surveillance engineers, three machinery engineers, one instrumentation engineer, one electrical engineer, and one measurement engineer. In addition, nine third-year engineering interns joined the Intern Engineering Program in 2023.

The Graduate Management Development Program selects graduates from across multiple subject disciplines and rotates them through different departments over a three-year period to obtain a broad understanding of EMPNG's business. EMPNG currently has 15 workers who are part of the Graduate Management Development Program and four who have graduated from the Program.



**Graduate Management Development Program participants arrive at the Upstream area for a tour of facilities**

In addition to providing training programs for its workforce, EMPNG continues to invest in supporting the development of Papua New Guinean businesses.

During 2023, EMPNG engaged nine landowner companies (Lancos), each representing a geographic area within the PNG LNG area of operations, and 146 other Papua New Guinean businesses for production-related activities. In-country spend with Papua New Guinean businesses was almost PGK883 million (USD237 million) in 2023 compared to PGK633 million (USD170 million) during 2022. Thirty-eight percent of this spend was for Lanco services, which equates to PGK358 million (USD96 million) compared to PGK292 million (USD78 million) spent on Lanco services in 2022. EMPNG has spent almost PGK6.8 billion (USD1.8 billion) on Papua New Guinean services since the start of production. Of this, PGK2.25 billion (USD604 million) was spent on Lanco services.

EMPNG also participated in the Papua New Guinea Chamber of Resources and Energy Incorporated (formerly the Papua New Guinea Chamber of Mines and Petroleum Incorporated) inaugural Community Affairs and National Content Conference and Exhibition (CANCONEX). As Papua New Guinea's first ever conference and expo that included national content on its agenda, CANCONEX provided an opportunity

for the resource industry, government, Lancos, Papua New Guinean suppliers and community-based organisations to share ideas regarding community affairs and national content best practice. The event enabled participants to identify opportunities for Papua New Guinean citizens and businesses to participate in existing and emerging mining and petroleum projects in the country.



**EMPNG National Content Advisor, Zillar Miro (right), greets Papua New Guinea Prime Minister, the Honourable James Marape, at the EMPNG exhibition booth at CANCONEX**

Lanco Laba Holdings Limited started construction on eight major infrastructure projects for the four LNG Plant site villages of Papa, Lea Lea, Boera and Porebada during the year. The projects, funded by EMPNG and to be completed in 2024, include: a two-storey double classroom and staff administration building for Porebada Primary School; a double classroom with a dedicated computer laboratory for Boera Primary School; a two-storey double classroom with a dedicated computer laboratory along with a three-bedroom staff house for Papa Junior High School; and a double classroom with a dedicated computer laboratory and a three-bedroom staff house for Lea Lea Primary School. A new Village Court House has been scheduled for construction at Papa Village in 2024.

A new science laboratory for St Pauls Komo Secondary School was constructed by HGDC Energy Services Limited (HESL) in collaboration with Lanco Komo Airfield Development Company Limited in 2023 with funding support from EMPNG. As a result of the new laboratory, which cost approximately PGK1,338,000 (USD359,000) to build, Papua New Guinea's education board approved the school's application to be elevated to a secondary school, catering for Grades 11 and 12 from 2024. This means that Komo students no longer need to travel to Tari to access secondary education.

Three staff houses have been constructed by HESL at Undupi Primary School with funding support from EMPNG. Double classrooms are being constructed for Juni and Hupikini primary schools and will be handed over in 2024. In the Upstream area, EMPNG funded the construction of a new Komo Rural Local-Level Government chamber building. Built by Lancos HESL and Komo Airfield Development Company Limited, the chamber provides a meeting and conference room, along with an administrative hub for 24 ward counsellors of the Komo Rural Local-Level Government.

As well as projects delivered by Lancos, EMPNG donated three first aid units constructed from 20-foot shipping containers to Lea Lea Primary School, Papa Junior High School, and Redscar High School in 2023. These units comprised a first aid kit, bathroom, waiting area, and air conditioning. They were designed as sick bays to support the provision of first aid for students and staff at these schools. The units will be managed by teachers who received basic first aid training through St John Ambulance with support from EMPNG.

EMPNG continues to organise weekly fresh produce markets at Hides, Komo and Angore. These markets attract some 100 local vegetable farmers who sell their produce to the HGCP and Angore camp caterers and earn additional income from sales to community members. About 85 of these markets were held during the year, generating more than PGK265,000 (USD71,100) in the sale of local produce to catering contractors for use in EMPNG camps.



**EMPNG Information and Management System Data Analyst, Annie Soli, purchasing fresh produce from community members at a 3 Ways Junction market**

EMPNG also supported the Motu Koita Assembly with their redevelopment project at Baruni Primary School. The project included the construction of two buildings that each contained three classrooms. In addition, EMPNG provided desks and chairs for 120 students who will use the classrooms.

The Boera Women's Resource Centre, together with local non-government organisation the Centre for FutureNau Incorporated, has launched an entrepreneurial community gardening pilot project with funding from EMPNG and support from Papua New Guinea's Department of Agriculture. The project involves training local women and their families to grow crops for healthy lifestyles and to generate income. The first training was conducted in 2023 and covered topics such as using non-biodegradable waste for gardening.

EMPNG worked with the Rural Women's Development Foundation Incorporated during the year to provide food donations to eight *safe haus* or 'safe houses' in the Hela Province to support 64 survivors who were displaced primarily due to violence. These *safe haus* helped protect victims with safe accommodation at a discreet location, food and other essentials, and legal support.

Thirty students received scholarships funded by EMPNG as part of the 2023 Business and Professional Women's Association PNG LNG In-Country Scholarships Program for Higher Education in Papua New Guinea. The Program, which supports students with completing secondary and tertiary education, was also extended to provide 40 scholarships for vocational education students from Hela Province. Since EMPNG began working with the Business and Professional Women's Association in 2019, 190 students have been funded through these scholarships.

## 2023 PERFORMANCE HIGHLIGHTS

### NATIONAL CONTENT

# 3255 PNG citizens

comprise 88% of the PNG LNG workforce (including EMPNG employees, staff contractors, and third-party contractor personnel) as at 31 December 2023

# PGK883 million

spent in-country with Papua New Guinean businesses in 2023 bringing the total to PGK6.8 billion spent since the start of production

# 225,900 hours

of training delivered through some 2600 EMPNG and third-party contractor courses in 2023

# PGK30.6 million

of contributions, sponsorships, in-kind support and community projects in 2023

# 320+ volunteers

spent 400 hours in 2023 on volunteer projects

In 2023, a total 1404 Grade 8 and 10 students from nine schools near the LNG Plant site participated in the ExxonMobil Science Ambassador Program with support from EMPNG volunteers. The Program aims to encourage students to consider careers in science, technology, engineering, and mathematics through interactive educational experiences.





**LNG Plant Land and Community Affairs Officer and EMPNG volunteer, Shadrach Jaungere, delivers a Science Ambassador Program lesson to students at Papa Junior High School**

The Science Ambassador Program is among numerous community-based activities that received some 400 hours of volunteer support from more than 320 EMPNG workers during the year. About 180 volunteers participated in activities organised by the Employee Resource Group from ExxonMobil Haus in Port Moresby, and over 140 volunteers participated in support activities in communities near the LNG Plant, HGCP, Moro, and Angore facilities.



**EMPNG workers and their families volunteer to clean up Lea Lea beachfront**

## Environment

A key environmental milestone was achieved in October, with more than 100 clans across two local-level government areas in the Lower Kikori region signing 11 community conservation deeds, which is the largest number of conservation deeds ever signed at one time in Papua New Guinea. It is the culmination of more than 10 years of community engagement in the Kikori Delta area regarding conservation. Some 1000 community members witnessed the event.

As a result of these conservation deeds, more than 20,000 hectares of land in the Lower Kikori region has been committed by Papua New Guinean landowners for conservation efforts.

In addition to community-based conservation, EMPNG consistently works to improve its environmental management processes. This includes ongoing waste management initiatives that are being implemented to improve long-term waste management solutions at all EMPNG worksites.



**Signing of community conservation deeds at Kikori Station**

ExxonMobil conducts assessments of new facilities using an experienced independent contractor before determining whether they will be utilised. Additionally, existing waste management facilities are re-assessed every four years to confirm they can continue to be used. In October, EMPNG assessed and engaged a new Papua New Guinean waste contractor, Carbon Recycling PNG, which opened the nation's first onshore waste oil recycling facility at Lae.

## 2023 PERFORMANCE HIGHLIGHTS

### ENVIRONMENT

# 11 deeds signed

for community conservation, which is the largest number of conservation deeds ever signed at one time in Papua New Guinea

# ~1000 people

representing more than 100 clans across two local-level government areas in the Lower Kikori region witnessed the signing of conservation deeds

# >20,000 hectares

of land in the Lower Kikori region has been committed by Papua New Guinean landowners for conservation efforts

Following an 18-month trial period and environment permit process, this facility achieved its Environment Permit through the Conservation and Environment Protection Authority and became compliant with ISO14001 standards. During the trial period, more than 270,000 litres of waste oil was processed. The facility has the capability to process up to 21 million litres of waste oil per year. In addition to Carbon Recycling PNG, EMPNG re-assessed two existing waste contractors that were approved for continued use for PNG LNG operations.

As part of the annual invasive weeds monitoring survey conducted in 2023, the New Guinea Binatang Research Centre surveyed an additional 52 plots for invasive weed species, bringing the total number of transects surveyed to 785. With each transect measuring 100 metres, this is equivalent to 78.5 kilometres of the pipeline Right of Way surveyed. Monitoring data indicated that, generally, Priority 1 weed species diversity had not changed compared to the 2022 survey.

## Social

Several safety milestones were achieved in 2023, including the safest year recorded since the start of production with a Total Recordable Injury Rate of 0.03. Contractor Wood achieved 10 years of work without a Lost Time Incident at both the LNG Plant site and Upstream area.

Fifty-one Upstream area workers and 21 LNG Plant site workers were recognised as Safety and Fair Play Champions in 2023. This program encourages and rewards safe behaviour to help build a safety culture across all worksites. Workers selected as Safety and Fair Play Champions exhibit safe workplace behaviours and influence others with 'Nobody Gets Hurt' objectives.

In accordance with ExxonMobil Emergency Preparedness and Response guidelines, all 22 EMPNG Tactical Response Plans were reviewed and updated in 2023 to match the corporate standard. This global standard helps provide clarity around responses to critical first hours activities and provides consistency across business units to optimise EMPNG's emergency response.



**Responders celebrate the successful completion of the annual marine weather drill at the LNG Plant Marine Terminal**

EMPNG's revised global Industrial Hygiene exposure assessment strategy was implemented in 2023.

The strategy involves the use of both local and global data in exposure ratings and assessments. It provides a more fit-for-risk approach to how exposure assessments are conducted, ensuring effective controls are in place and validated as required. More than 350 workplace health inspections were conducted during the year to confirm health requirements were met for food, water, public health, chemical and respiratory safety.

More than 8140 engagements were conducted with communities throughout the PNG LNG area of operations in 2023. These included some 2415 formal engagements and 5725 informal engagements that involved almost 32,300 stakeholders. Fewer community engagements were recorded in 2023 than 2022 due to the completion of Angore Gathering System pipeline installation. In addition to community engagements, some 560 representatives from national government agencies, provincial level governments, and co-venture partners participated in 35 EMPNG advocacy workshops held in 2023. Advocacy workshops provide participants with information about EMPNG's operations, community development work, biodiversity programs, national content initiatives, and financial benefits paid to the Papua New Guinean Government and landowners.

Through a combination of its world-class production facilities, career development and business opportunities for Papua New Guinean citizens, and investment in a broad range of community support programs in collaboration with the Papua New Guinean Government and local communities, EMPNG is well on its way to realising a positive and long-lasting impact of PNG LNG on the whole country.

### 2023 PERFORMANCE HIGHLIGHTS

#### SOCIAL

# 0.03 TRIR

or 'Total Recordable Incident Rate' recorded for 2023, making it the safest year since the start of production

# PGK24.4 billion

has been distributed from PNG LNG revenues to landowners and the Papua New Guinean Government since the start of production

# >8K engagements

conducted with communities in 2023 involving almost 32,300 stakeholders





# OVERVIEW

EMPNG is responsible for the management and operation of the PNG LNG production facilities and associated gas resources, which have been designed to reliably deliver affordable, sustainable energy to the Asia Pacific region.



ExxonMobil PNG Limited (EMPNG) operates the USD19 billion (PGK71 billion) Papua New Guinea Liquefied Natural Gas (PNG LNG) facilities that are located in Papua New Guinea's Hela, Southern Highlands, Western and Gulf provinces, as well as the Central Province and National Capital District. Through these facilities, multiphase fluids are gathered from Hides wells and transported through the Hides Spine to the Hides Gas Conditioning Plant (HGCP). At the HGCP, the fluids are stabilised and transformed into two streams – gas and condensate.

Dry gas from Hides, together with associated gas from Kutubu and Gobe fields, travels through more than 700 kilometres of pipeline to the LNG Plant located northwest of Port Moresby in the Gulf of Papua. The dry gas is then liquefied so it can be transported via ship to customers in Asia. Dry gas is also used to supply energy for Port Moresby businesses and communities through the local NiuPower Limited and Dirio Gas & Power Company Limited. Condensate, which travels through the HGCP-Kutubu Condensate Pipeline to the Kutubu Central Processing Facility, is transported to the Kumul Marine Terminal in the Gulf of Papua for export. The locations of PNG LNG facilities are shown in Figure 1.1.

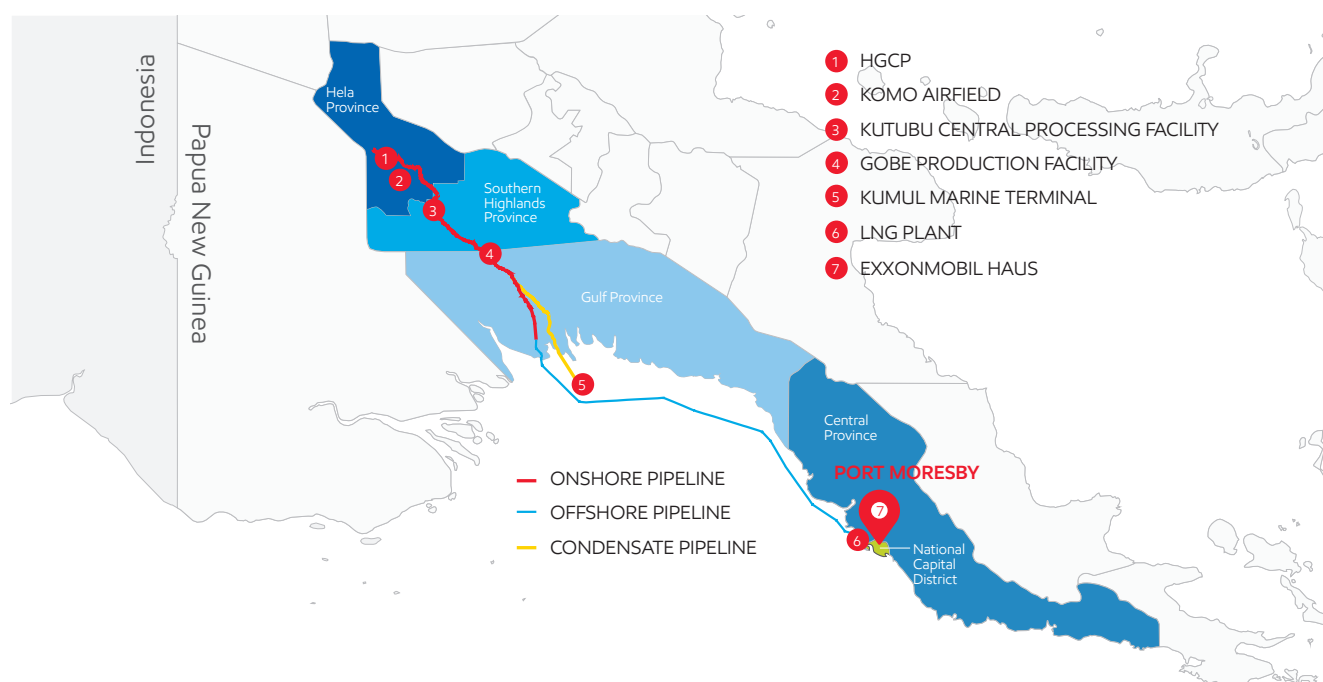
Over the life of the PNG LNG facilities, some 11 trillion cubic feet of natural gas is anticipated to be produced to deliver a long-term energy supply to customers such as: China Petroleum and Chemical Corporation (Sinopec), Osaka Gas Company Limited, JERA Company Incorporated and CPC Corporation in Taiwan.

This Report, and previous Environmental and Social Reports, are available on the PNG LNG website.

[www.pnglng.com](http://www.pnglng.com)

Printed copies of the full Report and translated summaries are also provided for Papua New Guinean citizens who may have limited access to the internet.

**Figure 1.1 – PNG LNG facilities**



## HIGHLIGHT

### NEW LEADER FOR EMPNG

In 2023, Tera Shandro was appointed Chairperson and Managing Director of EMPNG, replacing outgoing Chairperson and Managing Director, Peter Larden, who moved to a new role as Senior Upstream and Low Carbon Solutions Advisor to ExxonMobil.

Tera has more than 20 years of experience in the oil and gas industry, joining ExxonMobil's Canadian affiliate Imperial Oil in 2003. Throughout her career, Tera has held both global Upstream and Downstream senior roles spanning research, engineering, operations, finance, and business planning. She has extensive capital project execution experience in the United States and Canada.

"I feel grateful to support our incredibly high performing EMPNG team and to advance opportunities of significance for the country and people of Papua New Guinea," Tera said.



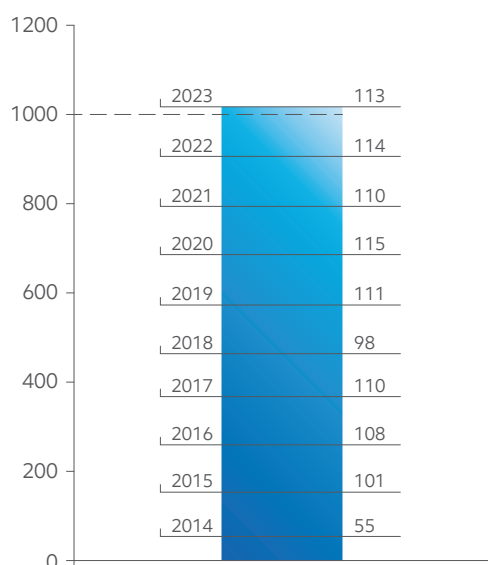
**Tera Shandro presenting at the Lead Country Manager Forum at ExxonMobil Haus in October**

## 1.1 Production

Two major production milestones were achieved in 2023 with completion of the Angore Gathering System pipeline installation from Wellpad C to the HGCP and the 1000<sup>th</sup> LNG cargo shipped on the LNG carrier *Gigira Laitebo* to China in September. Throughout the year, 8.5 million tonnes of LNG was produced, with 113 LNG cargoes and a record 13 naphtha cargoes loaded. Since the start of production, more than 77.8 million tonnes of LNG has been produced, as well as 1035 LNG (as shown in Figure 1.2 ) and 99 naphtha cargoes loaded, for customers in Asia.

**Figure 1.2 – LNG cargoes**

NUMBER OF CARGOES LOADED BY YEAR



Close collaboration between EMPNG's Electrical, Maintenance and Engineering teams meant the LNG Plant's boil off gas compressor motor was able to be re-rated to allow more compressor throughput to reduce fuel-from-feed use.

The LNG Plant Marine Terminal also improved efficiencies in ship loading preparations during 2023.

## 1.2 Wells

During 2023 the Wells team focused on the continuation of wellworks at Angore Wellpad C and implementation of the Upstream Company's new Limiter Redesign Process initiative. The initiative was tailored into a *Mobeta* meaning 'more better' workflow that aims to drive continuous improvement in the Wells Flat Time Reduction and Fast Drill Borehole Management framework across the drilling process and broader drilling operations.

An integral component of the *Mobeta* workflow is the idea card system, which aims to gather improvement ideas from field teams. Wanwoks are encouraged to submit their suggestions, and monthly awards are conducted to recognise outstanding ideas. *Mobeta* was initially implemented at Hides Wellpad D during Hides D1 well plug and abandonment operations. As a result of its initial success, *Mobeta* was subsequently introduced to the Angore Drilling team.

Ideas adopted through *Mobeta* during 2023 included the introduction and use of a cutting-edge bit design that enhances the ability to drill longer hole sections, which results in less round trips compared to the process used to drill wells during PNG LNG's construction phase.

## 1.3 Hides Gas Conditioning Plant

In May, the largest maintenance scope of work was completed at the HGCP since the PNG LNG construction phase. This was achieved through a planned curtailment in the production volume (rate reduction) enabling the first major maintenance to be conducted on HGCP top-tier machinery. It included remediation of the spring hanger that was damaged on pipeline compressor 1 in the 2018 Papua New Guinea earthquake. It also included: a gearbox inspection on pipeline compressors 2 and 3; wells integrity testing and spine line small bore connection remediation work; and the replacement of safety controllers on all pipeline compressors. This extensive work was completed 10 days ahead of schedule.



**Workers undertaking maintenance on the LNG Plant Train 2 mixed refrigerant compressor turbine as part of the rate reduction scope**

## 1.4 LNG Plant

A rate reduction for major maintenance was also completed at the LNG Plant on three compressor packages in Train 2 and an engine replacement in Train 1. The molecular sieve bed replacement, consisting of eight dehydration towers, was accelerated due to performance degradation that was identified during monitoring. This work involved confined space entry and was safely completed 13 days ahead of schedule.



## 1.5 Marine facilities and shipping

In March, a remotely operated vehicle survey was conducted of the PNG LNG subsea pipeline to confirm its integrity. The survey was undertaken by co-venturer Santos using Shelf Subsea's vessel *Southern Star*.

On 19 September, a major milestone was achieved as the 1000<sup>th</sup> LNG cargo was loaded at the LNG Plant Marine Terminal.



**EMPNG Maintenance Manager, Jose Melero, and Maintenance Integration Superintendent, Stephen Marinjembi, in front of the LNG vessel *Gigira Laitebo* while it is loaded with the 1000<sup>th</sup> LNG cargo**

Toward the end of 2023, grating that was becoming corroded by the sea was replaced on all six mooring platforms at the LNG Plant Marine Terminal. A new coating system was also introduced during the year to extend the life of the LNG Plant Marine Terminal jetty. The new coating system has less environmental and health risks than 2-pack paint.

## 1.6 Angore Gathering System

A key milestone was achieved in August with the completion of the Angore Gathering System pipeline installation. The pipeline is composed of a gas feed line and a mono ethylene glycol injection pipeline from Angore Wellpad C to the HGCP. The pipeline was constructed in challenging terrain, including steep slopes in excess of 45 degrees, through the use of sky cranes and horizontal direction drilling trenchless techniques.

### 2023 PERFORMANCE HIGHLIGHTS

#### OVERVIEW

# 113

 cargoes

of LNG loaded in 2023

# 1035

 cargoes

of LNG loaded since production commenced

# 13

 cargoes

of naphtha loaded in 2023

# 99

 cargoes

of naphtha loaded since production commenced

# 8.5

 million

tonnes per year equivalent of LNG produced in 2023

# 77.8

 million

tonnes per year equivalent of LNG produced since production commenced

# 2



# GOVERNANCE

EMPNG operates in accordance with the PNG LNG Production Environmental and Social Management Plan to maintain the wellbeing of workers, communities and the environment surrounding production facilities.

In addition to the Production Environmental and Social Management Plan (ESMP), EMPNG operates in accordance with Papua New Guinea's laws and regulations, which involves compliance with 1355 regulatory obligations and 2710 licences, permits, certificates, and associated conditions, while also meeting PNG LNG Lender Group requirements.

## 2.1 ExxonMobil Standards

EMPNG's day-to-day operations align with ExxonMobil's Standards of Business Conduct. These Standards require business to be conducted in a way that is compatible with the environmental, social, and economic needs of communities where the company operates.

The Standards help protect the safety and health of employees, other workers involved in operational activities, and members of the public.

Alongside the Standards of Business Conduct, EMPNG complies with the structured and disciplined Operations Integrity Management System (OIMS) risk management framework.

OIMS identifies, evaluates, and manages risks across all ExxonMobil exploration, construction and production activities.

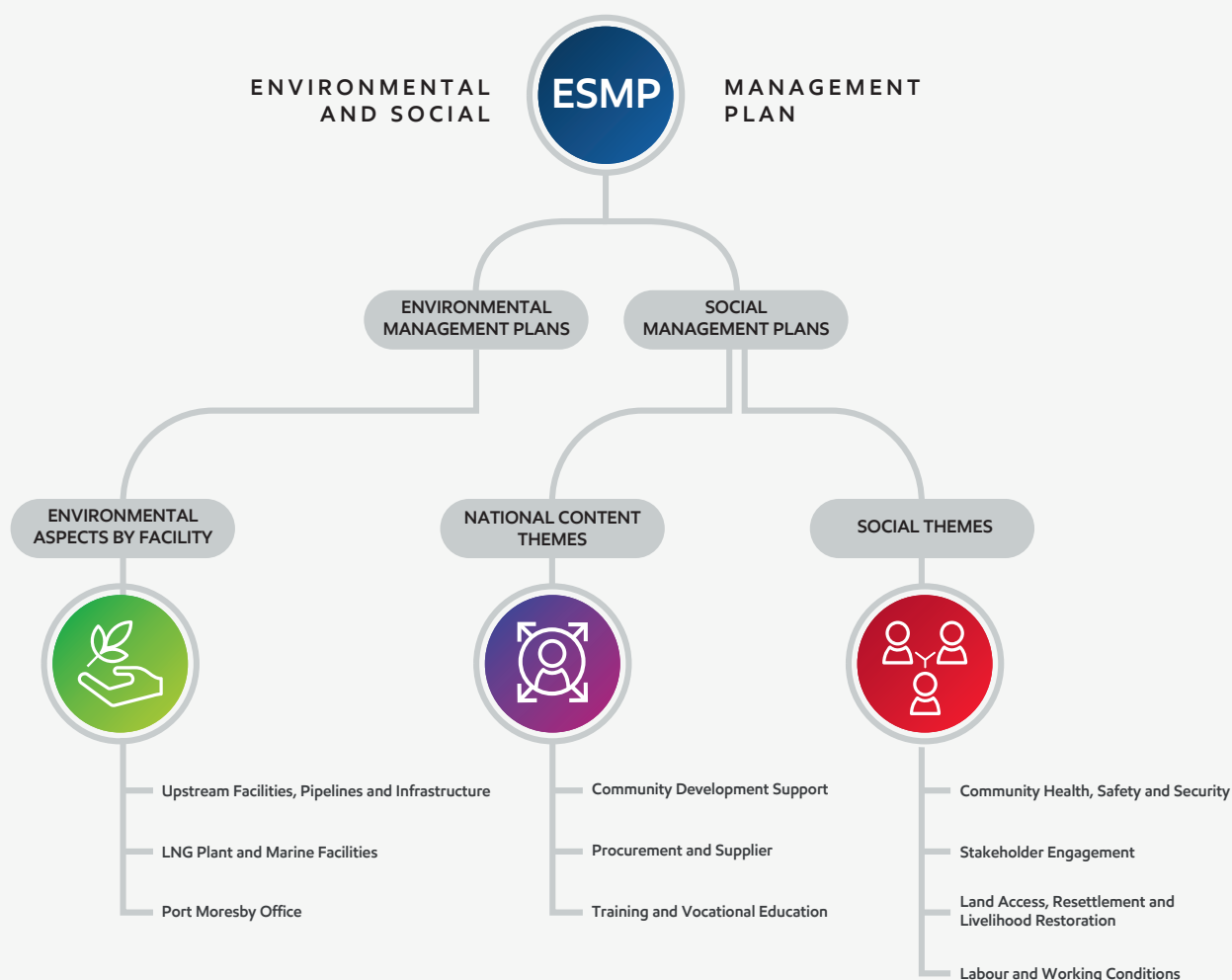
## 2.2 Environmental and Social Management Plan

The Production ESMP requires EMPNG to operate in a way that mitigates and manages the environmental, social, community health, safety and security impacts that can be associated with production activities. This includes maintaining PNG LNG's obligations under Papua New Guinean legal and regulatory requirements.

The Production ESMP is based on a combination of extensive stakeholder engagement and lessons learned from the PNG LNG construction phase. It covers environmental and social monitoring, mitigation and management measures determined in the PNG LNG Environmental Impact Statement, OIMS requirements, International Finance Corporation Performance Standards, and other relevant international standards such as the Equator Principles.

Seven Social Management Plans based on key social themes, and three Environmental Management Plans that cover all environmental aspects for the PNG LNG facilities, make up the Production ESMP as shown in Figure 2.1. EMPNG is required to meet all commitments outlined in the ESMP.

**Figure 2.1 – Production ESMP structure**





Requirements of the Production ESMP apply during normal operating conditions, as well as in reasonably foreseeable abnormal operating conditions or emergency situations.

In consultation with stakeholders, EMPNG periodically reviews the Production ESMP so that it remains current in meeting Papua New Guinea's environmental, social, and operational conditions. The latest version of the Production ESMP is published on the PNG LNG website.

[www.pnglng.com](http://www.pnglng.com)

## 2.3 Assessment and external monitoring

Monitoring and evaluation are regularly conducted by EMPNG to confirm the effectiveness of the Production ESMP regarding:

- the implementation of mitigation measures that are designed to manage risks and impacts
- mitigation measures achieving their intended outcomes, or being on track to achieve their intended outcomes
- the identification of actual impacts and their comparison to predicted impacts, as described in the PNG LNG Environmental Impact Statement
- compliance with applicable laws and regulations.

As well as EMPNG's own monitoring and evaluation, the Lender Group engages an Independent Environmental and Social Consultant and Independent Technical Consultant to monitor PNG LNG's performance against ESMP requirements.

### 2.3.1 Assessments

Both internal and external OIMS assessments are periodically conducted to confirm the effectiveness of OIMS implementation and the health of OIMS Systems. This includes verifying the effectiveness of ESMP implementation. In December, an internal regulatory compliance assessment was undertaken at the HGCP site. The assessment aimed to determine operational compliance with licenses and permits, the ESMP, the Biodiversity Implementation and Monitoring Program and the Environmental Impact Statement, as well as adherence to OIMS. The assessment covered the HGCP's production facility, maintenance workshop, camp, logistics warehouse, clinic, and the occupational health of its workers. It also included worksites along the pipeline Right of Way (ROW) and the Hides Wellpads. The assessment team comprised personnel from the LNG Plant and other EMPNG functions that provided an unbiased review of the HGCP's regulatory compliance status. Findings from the assessment provided insights on areas for improvement and positive efficiencies that can be shared and implemented across other worksites.

### 2.3.2 External monitoring

Monitoring of EMPNG's operations is regularly conducted by external parties such as Papua New Guinean Government agencies and regulatory authorities.

The Independent Environmental and Social Consultant and Independent Technical Consultant conducted a monitoring visit during February. The visit included meetings with EMPNG management in Port Moresby and site visits to the LNG Plant, Hides facilities and Angore worksites, as well as several earthquake repair locations. Findings from the monitoring visit are available on the PNG LNG website.

[www.pnglng.com](http://www.pnglng.com)

In June, Papua New Guinea's Civil Aviation Safety Authority conducted an audit on ExxonMobil's Aviation Supply Organisations Certificate. The audit was successfully completed and the certificate was renewed. The Authority also completed an audit for the renewal of the Aerodrome Operating Certificate for Komo Airfield in September. The certificate was renewed for four months, with further renewals pending the successful closure of identified corrective actions.

In July, the Department of Petroleum and Energy and the Conservation and Environment Protection Authority (CEPA) conducted site inspections of drilling operations at Angore.



**Aerial view of Angore Wellpad C**

## 2.4 Management of Change

Any temporary or permanent changes or modifications to facilities, or to critical documents that may impact the operation of facilities, require implementation of EMPNG's Management of Change (MOC) procedure.

This procedure is intended to:

- manage all temporary, permanent, and urgent or emergency changes to integrity critical procedures, process equipment, operating conditions or critical parameters

- manage changes or modifications to existing facilities
- control the introduction of new chemicals to be used and stored at EMPNG sites
- conduct a thorough evaluation of proposed changes to identify potential risks and exposure to operations
- determine changes to safeguards or mitigations to address potential operations and integrity risks associated with proposed changes.

Safety, security, health, environmental, social management, operability, maintenance, regulatory, cost, and scheduling requirements are considered before any change is made.

Communication with workers whose job tasks may be impacted and who may require training is also conducted before a change is implemented.

Changes are classified and managed in accordance with their impacts, probability, and consequences. The MOC classifications, based on impact significance, are agreed with the Lender Group and outlined in the Production ESMP. These classifications are used as the basis for determining Lender Group approval, review or notification requirements associated with changes. Class I changes require the Lender Group to review and approve the change in writing before a proposed change is implemented. Class II changes require the Lender Group to be notified through presentations during annual monitoring visits and reporting in the annual PNG LNG Environmental and Social Report. Class III changes can be implemented without notifying the Lender Group.

One Class II MOC, which was under evaluation in 2022, was reclassified as a Class III MOC prior to presentation to the Independent Environmental and Social Consultant in early 2023.



**Remedial works underway at the Kilometre Point 61.8 river crossing**

This reclassification reflects a reduction in the scope of the MOC for reprofiling and remedial works at river crossings along Kilometre Points 61.8 and 65.9.

## 2023 PERFORMANCE HIGHLIGHTS

### GOVERNANCE

# 3 environmental

management plans govern PNG LNG operations

# 7 social

management plans govern PNG LNG operations

# 1355

regulatory compliance obligations in 2023

# 2710

licences, permits, certificates, and associated conditions met during 2023





# PART A



## NATIONAL CONTENT

# Through its national content initiatives, EMPNG aims to create shared long-term value for the company's many stakeholders.

The National Content Strategy is based on a long-term, strategic, and coordinated approach to building Papua New Guinea's human, social and economic capacity. The Strategy consists of three pillars that are specifically designed to deliver tangible, positive results for people, communities, and businesses:



Workforce Development – Providing Papua New Guinean citizens with technical and professional skills for existing and future projects, operations, and the benefit of the broader economy



Supplier Development – Evaluating, developing, and utilising Papua New Guinean suppliers who can meet minimum requirements and are globally competitive in terms of price, quality, reliability, availability, and delivery, and form a competitive industrial base



Strategic Community Investments – Identifying and assessing opportunities to help build and sustain economic growth while improving social conditions.

These pillars are intended to provide a strong foundation for EMPNG and its stakeholders to support sustainable social and economic development for Papua New Guinea.



# 3



Consistent, structured training and development opportunities are provided to EMPNG's workers to support the ongoing career development of Papua New Guinean citizens.



### 3.1 Composition

EMPNG continues to focus on national content building and enabling the full contribution of the Papua New Guinean workforce.

By the end of the year, the PNG LNG workforce consisted of 3714 workers, as shown in Figure 3.1. This includes 3255 Papua New Guinean citizens who represent 88 percent of the PNG LNG workforce. It encompasses EMPNG employees, staff contractors and personnel from 26 third-party contractor organisations working on production-related activities. Papua New Guinean women account for 20 percent of the Papua New Guinean workforce, which is an increase compared to 19 percent in 2022. Papua New Guinean women also represent 96 percent of all women working on PNG LNG operations.

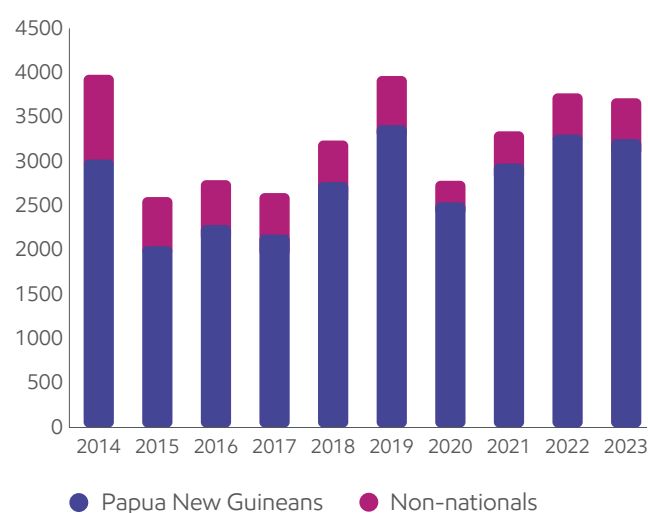
Thirty-four Papua New Guineans, including 11 women, held roles within EMPNG of a supervisor level or higher at the end of the year. This includes 13 Papua New Guineans who moved into the role in 2023.

Fifty-two percent of the total PNG LNG workforce is based in the Upstream area while 28 percent is based at the LNG Plant site. The rest of the workforce is based in other locations, such as ExxonMobil Haus (the ExxonMobil Papua New Guinea headquarters) in Port Moresby.

Workers are recruited from areas near production facilities wherever possible, with 35 percent of Papua New Guinean workers of local origin proximate to PNG LNG operations, 28 percent of regional origin from provinces where PNG LNG operates, and 37 percent from other areas of Papua New Guinea.

**Figure 3.1 – Production workforce**

NUMBER OF WORKERS BY YEAR



As shown in Figure 3.2, Papua New Guinean employees and staff contractors include: 115 professionals in discipline-specific roles such as engineers, administrative professionals or accountants; 161 senior professionals such as supervisors and team leaders; 107 in senior skilled roles such as Level 3 operations and maintenance technicians; and 160 skilled workers, such as electricians and Level 1 and 2 operations and maintenance technicians. Another 168 workers hold basic/semi-skilled positions in roles such as drivers, security officers, radio operations, and apprentices, while two are senior leaders in general management roles.



Technicians from the eighth intake of the Operations and Maintenance training program at the LNG Plant site

**Figure 3.2 – Position types**

NUMBER OF PAPUA NEW GUINEAN EMPNG EMPLOYEES AND STAFF CONTRACTORS BY POSITION TYPE



## 3.2 Training and development

To build the skills and experience of workers, EMPNG's workforce development approach encompasses both professional and personal development.

Training and development programs are delivered through in-house and external training courses, mentoring, employee networks and development forums, and short-term broadening assignments.

Third-party contractors also provide workforce training and development programs that are relevant to their scopes of work. In 2023, EMPNG and its contractors provided training to more than 12,300 participants over the equivalent of 225,900 hours through some 2600 courses. Training was provided through both face-to-face and online methods. Papua New Guinean citizens accounted for 93 percent of training participants, of whom 29 percent were women.

### 3.2.1 EMPNG workforce training and development

EMPNG employees and staff contractors received the equivalent of 55,100 hours of training during 2023. Of this, 41 percent was spent on technical and professional courses followed by 27 percent in trade and craft training with the remainder spent on: safety, security health and environments; administrative; basic; induction; and leadership training. More than 3400 participants completed 2070 different courses, which was an average of 59 hours per person during the year. Most training programs focused on safety processes.

Thirty-one percent of training participants were from the Upstream area, and 36 percent from the LNG Plant site, with the remainder from ExxonMobil Haus and other areas in Papua New Guinea. Papua New Guinean citizens comprised 76 percent of course participants. Of these, women accounted for 31 percent. More than 484,500 hours of training has been provided to EMPNG employees and staff contractors since production began.

A master class that focused on pre-planning to mitigate dropped objects was among many technical training courses delivered during the year. Several sessions of the master class were conducted to help raise worker awareness about how to prevent dropped objects. EMPNG also provided an Analytical Troubleshooting workshop for 23 HGCP workers in June. The workshop's aim was to help train workers in a systematic troubleshooting approach to identify the root cause of problems and implement long-term fixes, increasing operational efficiency in the production environment.



**Participants of the Analytical Troubleshooting workshop held at the HGCP in June**

Engineers remain integral to EMPNG's operations and maintenance programs. In 2023, they were involved in activities that included optimising production operations and progressing Facility Integrity Management System programs to maintain facility integrity and reliability.

In July, 20 EMPNG engineers across multiple disciplines completed five days of intensive training on functional safety analysis, design and operation to achieve International Electrotechnical Commission certification.



**Participants of the five-day training course on Functional Safety Analysis, Design and Operation**

Both in-person events and virtual courses continued on topics such as fluid properties prediction, Upstream facilities surveillance, materials and corrosion, offshore structural engineering, process safety, and root cause failure analysis.

Fundamentals of Electrical Engineering training was conducted for the first time in Papua New Guinea, involving nearly 20 EMPNG and contractor training participants who learned about engineering design, operation, and troubleshooting.



Noah Pingin, from Enga Province, achieved a new career height with EMPNG following his appointment to an expatriate assignment as Operations Advisor of the Golden Pass LNG Project in Texas, United States. Noah was among nine Papua New Guineans who enhanced their career experience with overseas expatriate assignments during 2023. Others to commence expatriate assignments during the year were: Appollonia Nabo, Operations Advisor, United States and Nonnie Eri, LNG Marine Coordinator, Singapore. Five Papua New Guinean citizens who remained on expatriate assignments from 2022 included: Process Engineer, Christine Sahuburua in Japan; Project Engineer, Lazaro Hemetsberger in Australia; and Rodney Camilus, who is a Papua LNG Operations Advisor in the United States. Elmira Puy is currently a Customer Experience Advisor, Information Technology and Alma Gaso a Negotiator, Marketing both in Singapore. Development Planner, Gerard Schulze, who commenced his expatriate assignment with the ExxonMobil Global Projects office in Houston, United States in 2021 remained on assignment throughout 2022 and 2023.

#### HIGHLIGHT

### FIRST MECHANICAL APPRENTICES GRADUATE

In 2023, the first three students of a new National Apprentice and Trade Testing Board Mechanical Apprenticeship program graduated from their course.

The program, which commenced in 2019, is offered to high school graduates who complete their apprenticeship training with EMPNG's HGCP Maintenance Department. Once they complete their apprenticeship, the graduates may qualify for employment with HESL.

The apprenticeship involves on-site training at the HGCP workshop and HESL workshop, as well as eight two-week technical training courses in Port Moresby, Lae and Mt Hagen.

Through the apprenticeship, Manu Moses qualified as a Heavy Equipment Fitter; Albert Arawi as an Automotive Electrician; and Goi Gurugu as a Motor Vehicle Mechanic.

All three apprentices were offered full time roles with HESL.



Apprenticeship graduates Manu Moses, Albert Arawi and Goi Gurugu

### Graduate programs

EMPNG recruits Papua New Guinean university and college graduates for full time employment and provides on-the-job training to help them develop their careers with the company. Recruitment is conducted through three annual programs: the Graduate Engineering Program, Graduate Management Development Program, and Intern Engineering Program.

The Graduate Engineering Program selects graduate engineers for career opportunities in technical disciplines such as process surveillance, electrical power systems, instrumentation and controls, computer networks and systems, civil, geotechnical, machinery, mechanical integrity, and pipelines.

Engineers chosen for this Program also participate in EMPNG's Engineers in Operations program, where engineering graduates shadow operations and maintenance technicians at the LNG Plant site for four to six weeks to learn about operations and maintenance processes. The graduates then complete a 90-day onboarding program to help them transition to their permanent assignments.

In 2023, 14 engineers were recruited through the Graduate Engineering Program, including 13 new graduates and one experienced engineer. The recruits consisted of four civil and integrity engineers, four surveillance engineers, three machinery engineers, one instrumentation engineer, one electrical engineer, and one measurement engineer.

Third-year engineering interns are recruited through EMPNG's Intern Engineering Program. These university students receive on-the-job training at PNG LNG facilities during their internship. Once they complete their internship and graduate from university, they can join EMPNG through the Graduate Engineering Program. Nine engineering interns joined the Intern Engineering Program in 2023.

The Graduate Management Development Program selects graduates with degrees in human resources, accounting, business, law and public policy, IT, journalism, and science. These employees rotate through several different support services departments during the three-year program to obtain a broad understanding of EMPNG's business.



Graduate Management Development Program employees discuss careers in the oil and gas industry with EMPNG Chairperson and Managing Director, Tera Shandro, and EMPNG Senior Vice President – Production, Scott Sandlin



**Members of the ninth intake of the Operations and Maintenance training program with trainers and EMPNG representatives at the Kumul Petroleum Academy**

Workplace assignments and mentor opportunities help these workers develop leadership capabilities and technical skills, as well as enable them to build their own global network of colleagues. They are introduced to key aspects of EMPNG's operations through worksite visits and lectures from various departments such as gas marketing, geoscience, and construction. Refer to *Case Study: Graduates take an Upstream tour*.

EMPNG currently has 15 workers who are part of the Graduate Management Development Program and four who have graduated from the Program.

#### *Operations and maintenance*

EMPNG's highly successful Operations and Maintenance training program entered its second decade after celebrating the program's tenth year in 2022. During 2023, 18 Papua New Guinean citizens, comprised of 13 men and five women, became the ninth intake of trainees and started their training at the Kumul Petroleum Academy. Six of the trainees are completing the instrumentation discipline, while the remaining 12 are studying the operations discipline.

Twenty-six trainees from the eighth intake began working as Junior Technicians at EMPNG worksites in November.



**Operations and Maintenance technicians learn the mechanical components and operation of a gas turbine engine**

A total 322 Papua New Guinean citizens have joined the Operations and Maintenance training program to date.

Of the 238 Operations and Maintenance training program graduates currently employed by EMPNG, 63 percent are based at the LNG Plant, and 31 percent at the HGCP. The other six percent are working at either ExxonMobil Haus or in roles outside of their operations and maintenance disciplines.

There are 124 Operations Technicians and three multi-skilled technicians in the operations discipline. Under the maintenance discipline, 28 are Mechanical, 27 are Instrumentation, 25 are Electrical Technicians, 12 are Maintenance Planners and Schedulers, and one is involved in integrity execution. The remaining 18 are working on broadening assignments or in other roles, including seven who have transitioned to either management, professional or technical roles within EMPNG.



**Junior Instrumentation Technicians from the seventh intake at the LNG Plant preparing gas detectors for use in daily surveillance**



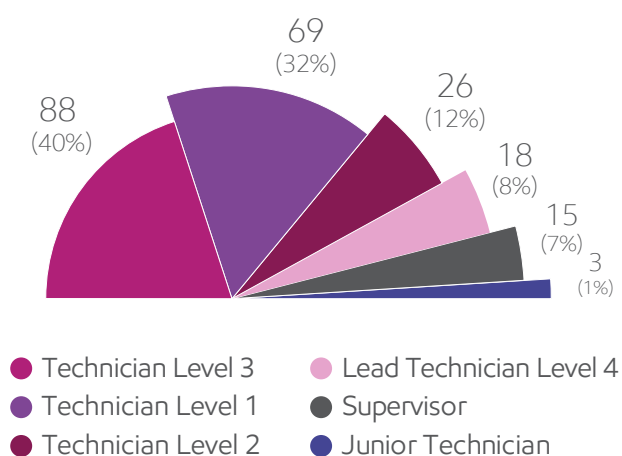
During 2023, in addition to Appolonia Nabo and Noah Pingin who are completing expatriate assignments in the United States, eight operations and maintenance technicians started broadening assignments with EMPNG. Three of these broadening assignments were based at the LNG Plant and included Gabriel Kila and Lamech Alu as Operations Planners, and Barbara Kipak as LNG Plant Field Environment Specialist. Other broadening assignments included Edna Maniot as International Production Enterprise System Coordinator based at ExxonMobil Haus, Priscillah Pora and Leon Omoa as OIMS Technicians based at the HGCP and Kwalimu Hiri as Angore Start-up and Projects Operations Sponsor.

The Operations and Maintenance training program has enabled many workers to transition to management, professional and/or technical roles with other departments within EMPNG. Of the seven graduates who have transitioned outside of operations and maintenance disciplines, one made the transition in 2023. Samantha Amos transitioned from Operations Technician Level 2 to become Operations Support Supervisor with the Training team.

EMPNG provides a structured progression plan for operations and maintenance technicians, which starts at Junior Technician level and progresses through to Technician Levels 1, 2 and 3. Technicians can progress further to Lead Technician Level 4 and/or supervisory level and beyond. To progress from a Junior Technician to Lead Technician takes approximately 11 years to complete. In 2023, 12 percent of operations and maintenance technicians progressed to the next technician level. Figure 3.3 shows the current levels of operations and maintenance technicians.

**Figure 3.3 – Operations and maintenance technicians**

NUMBER AND PERCENTAGE BY TECHNICIAN LEVEL



Two operations and maintenance technicians were promoted to Operations Supervisor during the year. Sulaiman Salmang took on the role for the LNG Plant, while Gaius Kave performs the role at the HGCP.

Operations and Maintenance training program graduates comprise 67 percent of all EMPNG field operations leadership roles, with 15 in supervisory roles and 18 in lead roles with EMPNG. Six of these positions are occupied by women, including Eunice Isaac who is the first Operations and

Maintenance training program graduate to qualify as a Control Room Technician for both the LNG Plant and HGCP.

Operations and maintenance technicians, at a minimum of Technician Level 3 and progressing to Lead Technician Level 4, can be selected by their supervisors to become qualified as Competency Assurance Standard assessors. During 2023, a re-evaluation of the Competency Assurance Standard assessor competency requirements was undertaken. At the end of 2023, 40 of the 66 qualified Competency Assurance Standard assessors were Papua New Guinean citizens, of whom nine were women.

### 3.2.2 Contractor training and development

EMPNG's third-party contractors provide ongoing training and development opportunities to build the technical skills of Papua New Guinean workers.

In 2023, Amanda Habitein, who works with EMPNG contractor Oceaneering International Services Limited, became the first Papua New Guinean woman to complete specialised Industrial Rope Access Trade Association training. Another eight Papua New Guinean Non-Destructive Testing Inspectors/Technicians from third-party contractors Oceaneering International Services Limited, Camco International Proprietary Limited and Nares Engineers Limited, including one woman, also completed the training and are now qualified Level 1 Rope Access Technicians.



**Oceaneering International Services Limited Non-Destructive Testing Inspectors, Amanda Habitein (foreground) and Gita Korimbo (background) became the first Papua New Guinean women to achieve Level 1 Rope Access Technician qualifications from the Industrial Rope Access Trade Association**



The equivalent of 170,700 hours of training was delivered by all EMPNG contractors during 2023, which compares to 104,200 hours in 2022. Some 8800 participants were involved in approximately 550 training sessions in 2023, which equates to an average of 62 hours of training per person across the contractor workforce.

Since the start of production, contractors have provided almost 99,600 PNG LNG worker participants with the equivalent of 590,800 hours of training.

Of the number of training participants in 2023, 65 percent were in the Upstream area, 23 percent were at the LNG Plant, and the remaining 12 percent at contractor offices and other off-site locations. Fifty-seven percent of contractor training participants were employed from local communities, 17 percent were from a province in which EMPNG operates, and 26 percent were from elsewhere in Papua New Guinea.

Eighty-seven percent of contractor training hours during 2023 focused on safety, security, health and environmental topics and six percent on trade training, while administrative, basic and induction training comprised three percent of training hours. Other training topics included technical and professional training, and leadership and management training.

In February, EMPNG held its annual third-party contractors Drug and Alcohol Collectors training, which helps contractors comply with EMPNG's contractual drug and alcohol program.



#### **Third-party contractor representatives following completion of the Drug and Alcohol Collectors training**

During the year, 24 transport workers from Hides Gas Development Company Limited (HGDC) subsidiary HGDC Energy Services Limited (HESL), who were engaged by EMPNG for Upstream area transport, participated in a three-week semi-trailer training course at the Mapex Training Institutes Limited in Port Moresby. Prior to the training, all workers were light vehicle drivers.

## **2023 PERFORMANCE HIGHLIGHTS**

### **WORKFORCE**

# 3255 PNG citizens

comprise 88% of the PNG LNG workforce\*

# 34 PNG citizens

including 11 women, held roles with EMPNG of a supervisor level or higher\*

# 225,900 hours

of training delivered through some 2600 EMPNG and third-party contractor courses in 2023

# 238 graduates

of the Operations and Maintenance training program employed by EMPNG\*

# 18 trainees

joined the ninth intake of the Operations and Maintenance training program

# 35 percent

of Papua New Guineans in the PNG LNG workforce were recruited from areas of local origin proximate to PNG LNG operations\*

\* As at 31 December 2023.

'PNG LNG workforce' includes: EMPNG employees for PNG LNG; staff contractors employed through recruitment agencies; and 'contractors', meaning other third-party contractor personnel.

## CASE STUDY

## GRADUATES TAKE AN UPSTREAM TOUR

Worksite visits are a key part of EMPNG's Graduate Management Development Program, which rotates graduates from different disciplines through a range of business support roles so they gain a solid knowledge of PNG LNG operations.

In 2023, Graduate Management Development Program participants were offered the opportunity to attend a three-day visit of Upstream area worksites. The offer was extended to 19 workers, including both current participants and former graduates of the Program.

The visits were undertaken in two groups during October and November. Each visit started with a toolbox talk, followed by a tour of the HGCP global supply chain warehouse where Upstream operations materials are stored and dispatched for work. The visits also included a tour along the Hides Spine to Wellpad F so graduates could see where gas was extracted. On the second day, the graduates travelled to Angore Wellpad C Camp to view the wellpad site and learn about the drilling process. On the third day, graduates visited the live plant area at the HGCP, including the central control room and support facilities such as the site clinic, Security team and helicopter hanger. Additionally, graduates visited Komo Airfield on their return to Port Moresby.

PNG Supply Chain Manager and facilitator of EMPNG's graduate programs, Claire Joseph, said site visits and gaining experience in different roles was crucial for the career development of graduates.

***"The Graduate Management Development Program is important in giving graduates valuable first-hand***

***experience of multiple facets of the complex oil and gas industry early in their career journey," she said.***

***"New EMPNG employees are challenged to learn quickly and adapt to new roles and responsibilities so they can fully contribute to the business.***

***Programs such as this, and ongoing employee training opportunities, give graduate employees the foundation they need for a successful career."***

Yvette Renagi, a Regulatory Advisor who joined EMPNG's Graduate Management Development Program in 2020 said,

***"It was incredible to see how much goes on behind the scenes at the Upstream worksites and how multiple disciplines of the organisation come together to drive success. The level of expertise and teamwork that EMPNG provides helps to ensure effective and seamless LNG production. It makes me proud to be part of this team."***

Operations Manager of EMPNG, Justin Chichester, added,

***"These graduates are a key part of the EMPNG's future. Their passion, dedication, and innovative thinking are what drive us forward. This program is not just about imparting knowledge, but about inspiring our graduates to reach their full potential. We believe in them, and we are committed to providing them with the tools and opportunities they need to succeed. Their success is our success."***

In 2024, Graduate Management Development Program participants will be able to participate in a similar visit of the LNG Plant site.



**Graduate Management Development Program employees from the first group at the Angore Wellpad C drilling site**



**Graduate Management Development Program employees from the first group visiting the HGCP global supply chain warehouse**



**EMPNG HGCP Field Superintendent, Jason Coben (centre), joins the second group of Graduate Management Development Program employees at the Angore Wellpad C Camp**



# 4



# SUPPLIERS

To actively encourage the important role of Papua New Guinean businesses in driving economic and social development, EMPNG promotes capacity building and growth opportunities for local suppliers.



## 4.1 Procurement and suppliers

EMPNG engages Papua New Guinean businesses in production-related activities and supports their capacity building so they can become self-sustaining enterprises.

Landowner companies (Lancos), each representing a geographic area within the PNG LNG area of operations, are engaged for services such as road maintenance, civil and construction works, transportation of personnel, fuel distribution, security, camp maintenance and catering, vehicle maintenance, labour hire and other services.

Other Papua New Guinean businesses supply accommodation, civil works, transportation of personnel, security, catering and food supply, maintenance, surveying, inspection and testing, medical services, and waste management for EMPNG.

In 2023, EMPNG engaged 10 Lancos and 131 other Papua New Guinean businesses for production-related activities.

In-country spend with Papua New Guinean businesses was almost PGK883 million (USD237 million) in 2023 compared to PGK633 million (USD170 million) during 2022. Forty-one percent of this spend was for Lanco services, which equates to PGK358 million (USD96 million) compared to PGK292 million (USD78 million) spent on Lanco services in 2022.

EMPNG has spent almost PGK6.8 billion (USD1.8 billion) on Papua New Guinean services since the start of production. Of this, PGK2.25 billion (USD604 million) was spent on Lanco services.

## 4.2 Capacity building

As part of EMPNG's ongoing commitment to national content, relevant training and business development opportunities are provided to Papua New Guinean businesses to help build their capacity.

In May, EMPNG participated in the 38<sup>th</sup> Australia Papua New Guinea Business Forum and Trade Expo held in Port Moresby. The Forum and Trade Expo attracted government, industry, and business representatives to address the topic of '1Tok Trade Wave, Advancing Smart Investments Between Papua New Guinea and Australia'. The three-day event was designed to increase collaboration between Papua New Guinean and Australian businesses, government, and industry partners to drive economic growth in Papua New Guinea.

In August, EMPNG representatives joined Papua New Guinean Government and business leaders at the Business Council of Papua New Guinea Incorporated's National Content Conference, which is part of the Praivet Gavamani Konekt 2 (PGK2) program. The conference theme of 'Shared Values Strengthens and Builds Papua New Guinea' was intended to bring government and business leaders together for meaningful collaboration to help build the nation. EMPNG has supported the Business Council of Papua New Guinea Incorporated and PGK2 by hosting similar conferences with a focus on national content since 2021.

Both the 2023 and 2022 conferences were held at the National Parliament of Papua New Guinea and were open to all Members of Parliament, Provincial Governors, Ministers of State, and their staff.



**Panel discussion during the 38<sup>th</sup> Australia Papua New Guinea Business Forum and Trade Expo featuring Papua New Guinea Chamber of Resources and Energy Incorporated Senior Vice President, Richard Kassman; Twinza Oil Board of Directors Chairman, Stephen Quantrill; EMPNG Senior Vice President – Production, Scott Sandlin; and Kumul Petroleum Holdings Limited Chief Operating Officer, Craig Schulz**



**EMPNG Senior Vice President – Production, Scott Sandlin presenting at the PGK2 National Content Conference**

EMPNG also participated in the Papua New Guinea Chamber of Resources and Energy Incorporated inaugural Community Affairs and National Content Conference and Exhibition (CANCONEX) as discussed in *Case Study: EMPNG joins new National Content Conference*.



**EMPNG representatives at the CANCONEX exhibition booth**

EMPNG has supported the IBBM Enterprise Centre since it was established in 2010 to help build the capacity of Papua New Guinean businesses, including representative Lancos. The IBBM Enterprise Centre's work includes the provision of services to mining and petroleum industry operators and their suppliers, and other Papua New Guinean public and private sector organisations.

In 2023, the IBBM Enterprise Centre focused on business assessments for Lancos Laba Holdings Limited, HESL and Turra Holdings Limited as well as Papua New Guinean business Nares Engineers Limited. Various business assessments were completed for these companies including a Quality Management System audit for Laba Holdings Limited and Nares Engineers Limited.



**Nares Engineers Limited workforce members**

During the year, the EMPNG 2022 Annual Local Business Development Report and 2022 Employment, Training and Development Report were prepared and presented by EMPNG's National Content team to agencies such as: the Department of Petroleum and Energy; the Department of Commerce and Industry; the Department of Higher Education, Research, Science and Technology; and the Department of Labour and Industrial Relations.



**EMPNG National Content Advisor, Mary Daure, presenting the 'Strategic Community Investment' pillar of EMPNG's national content framework to Department of Petroleum and Energy representatives and other key government stakeholders**

EMPNG's National Content team also provided feedback, through the Papua New Guinea Chamber of Resources and Energy Incorporated, on Papua New Guinea's overarching National Content Policy led by the Department of Commerce, and Industry and the Petroleum Sector National Content Policy led by the Department of Petroleum and Energy. *The Petroleum Sector National Content Policy* was published in October.

## 2023 PERFORMANCE HIGHLIGHTS

### SUPPLIERS

**PGK883 million**

spent in-country with Papua New Guinean businesses in 2023

**PGK6.8 billion**

spent in-country with Papua New Guinean businesses since the start of production

**131 local businesses**

working on PNG LNG, including 10 Lancos

**PGK338 million**

spent with Lancos in 2023

**PGK2.2 billion**

spent with Lancos since the start of production

**13 years**

of support for the IBBM Enterprise Centre



## CASE STUDY

## EMPNG JOINS NEW NATIONAL CONTENT CONFERENCE

EMPNG representatives joined more than 800 delegates, including Papua New Guinea Prime Minister, the Honourable James Marape, at the Papua New Guinea Chamber of Resources and Energy Incorporated's inaugural Community Affairs and National Content Conference and Exhibition (CANCONEX) at the University of Technology in Lae, Morobe Province in August.

As Papua New Guinea's first ever conference and expo that included national content on its agenda, CANCONEX provided an opportunity for the resource industry, government, Lancos, Papua New Guinean suppliers and community-based organisations to share ideas regarding community affairs and national content best practice. The event also enabled participants to identify opportunities for Papua New Guinean citizens and businesses to participate in existing and emerging mining and petroleum projects in the country.

Papua New Guinea Prime Minister, the Honourable James Marape addressed the conference theme of 'Promoting National Participation for Sustainable Communities' by sharing the Papua New Guinea National Content Policy for Resource Sectors 2023. He spoke highly of PNG LNG with specific reference to the successful implementation of community development strategies.

The Prime Minister said the Papua New Guinea National Content Policy would support national content through:

- the procurement of goods and services from domestic suppliers
- employment of Papua New Guinean citizens
- skills development for Papua New Guinean citizens
- greater equity participation
- oversight on investment on sustainable development.

He said the Policy would encourage greater investment and active participation of Papua New Guinean citizens in business spin-offs and contracts, employment, skills training and workforce development or nationalisation efforts, shareholding, and developing socioeconomic infrastructures nationwide.

Former EMPNG General Manager - Operations, Shameka Nelson, told the conference that the company aimed to enable safe and secure operations through deep community relations, fair land management and agile community investment.

***"Having strong relationships with our neighbours and working with community organisations to deliver programs that support social growth is just as important as the energy we produce, Shameka said.***

***"We want our business presence to have a positive impact where Papua New Guineans gain skills for the future and enhance their economic self-reliance."***

Lancos PNG Mining and Petroleum Hospitality Services Limited, NKW Holdings Limited, Trans Wonderland Limited, Anitua Limited, and iPi Catering Limited also addressed the conference by sharing lessons learned about building large Papua New Guinean enterprises.

Topics covered at the event included updates from key industry regulators about government policies that impact community affairs, conversations about benefits sharing structures and landowners, and discussions on community engagement, community social responsibility, workforce development, and local business development.

Due to the success of the inaugural event, the Papua New Guinea Chamber of Resources and Energy Incorporated committed to holding a second CANCONEX event in June 2024.



**Front from left: Minister for Transport and Civil Aviation, the Honourable Walter Schnaubelt; EMPNG National Content Advisor, Zillar Miro; Papua New Guinea Prime Minister, the Honourable James Marape; Minister for Commerce and Industry, the Honourable Henry Amuli; and Minister for Administrative Services, the Honourable Richard Masere at the EMPNG exhibition booth at CANCONEX**



**EMPNG representatives attending CANCONEX**



5



# COMMUNITY

Together with local communities, government, and civil society organisations, EMPNG is involved in inclusive, long-term initiatives to help build resilient and empowered communities.

## 5.1 Strategic community investment

EMPNG's strategic community investment programs are designed to support positive, long-term economic and social development in Papua New Guinea. These programs cover health, education, livelihood support, environment awareness, key infrastructure improvements, law and justice, and community-based initiatives.

Each of these programs is implemented according to its relevant geographic area:

- local area programs in communities impacted by PNG LNG
- impacted provinces – programs that support provincial level initiatives, which are also aligned with provincial and local-level governments and development partners
- national programs that consist of broader scale capacity building projects and support at provincial and local levels.

EMPNG invested PGK30.6 million (USD8.2 million) in community programs during 2023 through sponsorships, community contributions, in-kind support, and local projects. Another PGK84.2 million (USD22.6 million) was invested in community-based infrastructure through infrastructure tax credit projects.

### 5.1.1 Local area programs

Conducted in collaboration with community members and provincial and local-level governments, EMPNG's local area programs are intended to help build community resilience. These programs include providing training and business development opportunities to women, enhancing education for school students, and supporting community-based health and wellbeing initiatives.

#### *Upstream area and pipeline Right of Way*

EMPNG's Upstream Community Affairs team organised weekly fresh produce markets at Hides, Komo and Angore throughout 2023 so that some 100 local vegetable farmers could sell their produce to the HGCP and Angore camp caterers and earn additional income from sales to community members.



**Community members display their produce for sale at the Angore Homai market**

Approximately 85 of these markets were held during the year, generating more than PGK265,000 (USD71,100) in the sale of local produce to catering contractors for use in EMPNG camps. These markets proved to be highly successful for both farmers and local communities alike. Community markets were originally established in the Upstream area in 2016 as part of EMPNG's Community Livelihood Improvement Program and have generated more than PGK1,234,000 (USD331,000) of income for local communities to date.



**HGCP workers purchase local produce from members of the Hipagu Women Group market at Hipagu Kopeanda Village**

Preparations were made in 2023 to provide some 160 women from 10 Upstream area women's small and medium enterprises with financial literacy and commercial spice training in January 2024. The training, funded by EMPNG, was designed to introduce female farmers to spice farming methods and teach them about the commercial supply of spice seedlings and business finance best practice.



**Participants of the financial literacy and commercial spice farming training**

A new science laboratory for St Pauls Komo Secondary School was constructed by HESL in collaboration with Lanco Komo Airfield Development Company Limited in 2023 with funding support from EMPNG. As a result of the new laboratory, which cost some PGK1,338,000 (USD359,000) to build, Papua New Guinea's education board approved the school's application to be elevated to a secondary school, catering for Grades 11 and 12 from 2024. This means that Komo students no longer need to travel to Tari to access secondary education.





**St Paul's Komo Secondary School students and teachers in front of the new science laboratory**

Three staff houses have been constructed by Lanco HESL at Undupi Primary School with funding support from EMPNG. Double classrooms are being constructed for Juni and Hupikini primary schools and will be handed over in 2024.



**Three newly constructed staff houses at Undupi Primary School**

EMPNG has donated 150 bags of cement to Lake Kutubu Primary School in the Southern Highlands Province for new pavements around the school's perimeter, and erected perimeter fencing for six schools across Hides, Angore and Komo: Komo ACE Academy; Nogoli ACE School; Komo Tiunte Primary School; Belopa Primary School; Perapu Primary School; and Undupi Primary School.

As well as infrastructure support for Upstream area schools, EMPNG has funded the construction of a new Komo Rural Local-Level Government chamber building. Built by Lancos HESL and Komo Airfield Development Company Limited, the chamber provides a meeting and conference room, along with an administrative hub for 24 ward counsellors of the Komo Rural Local-Level Government.



**Students of Lake Kutubu Primary School using the new footpaths constructed with the cement donation from EMPNG**



**The new Komo Rural Local-Level Government chamber building**

During the year, EMPNG constructed 46 water catchment structures across Hides, Angore, Komo and Moro.



Each structure consisted of two large rainwater tanks to provide communities with access to clean drinking water and a shelter for community meetings and social gatherings. Hides communities also received new basketball and volleyball courts in 2023.



**One of the water catchment structures constructed in the Upstream area**

Additionally, EMPNG funded the installation of solar panels to supply electricity to the Juni Community Health Post, and perimeter fencing for the Anguale, Undupi and Tumbite aid posts.



**Solar panels installed on the Juni Community Health Post**

More than 3000 solar kits were donated by EMPNG to support Homa Paua communities along the pipeline ROW during 2023.

The response to the solar kits was positive, with community members advising they were able to prepare food overnight and students could complete their homework during evenings.

Some 300 community members from Komo joined EMPNG volunteers and Komo Youth for Change Association representatives for a clean-up at Komo Station during the year. This was the first community-based clean-up event since 2019 due to COVID-19 restrictions. Following the clean-up, EMPNG donated six rubbish bins to help local communities maintain effective rubbish disposal at the station.

#### **LNG Plant site**

In 2023, Lanco Laba Holdings Limited started construction on eight major infrastructure projects for the four LNG Plant site villages of Papa, Lea Lea, Boera and Porebada.



**Signing of Community Agreements with Porebada Primary School for construction of a two-storey double classroom and staff administration building**

The projects, funded by EMPNG and to be completed in 2024, include: a two-storey double classroom and staff administration building for Porebada Primary School; a double classroom with a dedicated computer laboratory for Boera Primary School; a two-storey double classroom with a dedicated computer laboratory along with a three-bedroom staff house for Papa Junior High School; and a double classroom with a dedicated computer laboratory and a three-bedroom staff house for Lea Lea Primary School. A new Village Court House has been scheduled for construction at Papa Village in 2024.



**EMPNG volunteers join with community members for a Komo Station clean-up**





**Papa Junior High School staff house during construction**



**Construction of the new double classroom for Lea Lea Primary School**

In November 2023, a stormwater drainage project funded by EMPNG was completed at Boera Village. The new drainage was constructed by Lanco Laba Holdings Limited to help mitigate the impact of flooding in the village during the wet season.



**Boera Village Councillor Daure Kohu with EMPNG LNG Plant Asset Manager, Muhammad Yusof Al-Ayyubi, at the handover ceremony for the Boera Village stormwater drainage project**

Three first aid units constructed from 20-foot shipping containers were donated to Lea Lea Primary School, Papa Junior High School, and Redscar High School during the year. These units comprised a first aid kit, bathroom, waiting area, and air conditioning. They were designed as sick bays to support the provision of first aid for students and staff at these schools.



**Handover of the new first aid unit at Papa Junior High School**

The units will be managed by teachers who received basic first aid training through St John Ambulance with support from EMPNG.

During 2023, the Boera Women's Resource Centre, together with local non-government organisation the Centre for FutureNau Incorporated, launched an entrepreneurial community gardening pilot project with funding from EMPNG and support from Papua New Guinea's Department of Agriculture.

The project involves training local women and their families to grow crops for healthy lifestyles and to generate income. The first training was conducted in 2023 and covered topics such as using non-biodegradable waste for gardening.

EMPNG donated 45 desktop computers to Papa Primary School and Papa Junior High School as part of LiteHaus International PNG Limited's Digital Infrastructure Program in 2023.



**EMPNG Information Technology Supervisor, Rosinta Lakasa, installing one of the donated computers at Papa Junior High School**

Following a feasibility study conducted in November 2022 to support a long-term fisheries program for LNG Plant site villages, a recommendation was made in 2023 to develop a Caution Bay Fisheries Management Plan.

The Management Plan will capture all fisheries activities, including the use of inshore fishing aggregate devices and the creation of fisheries cooperatives for each of the four LNG Plant site villages. It will be drafted by the Central Provincial Government Fisheries Division.





**Boera Women's Resource Centre members participate in the entrepreneurial community gardening pilot project**

### 5.1.2 Provincial programs

The Motu and Koitabu communities, including the LNG Plant site villages of Papa, Lea Lea, Porebada and Boera, joined Gulf Province communities in March for the 49<sup>th</sup> Hiri Moale Festival.



**2022 Miss Hiri Hanenamo, Guba Hitolo; former EMPNG Chairman and Managing Director, Peter Larden; and Motu Koita Assembly Chairman and Deputy Governor of National Capital District, Dadi Toka Jr, launch a model lagatoi across a pool at Airways Hotel in Port Moresby to signify their partnership for the 2023 Hiri Moale Festival**



**Lilly Henry of Tatana Village receives runner-up for the 2023 Miss Hiri Hanenamo competition by Her Excellency Lady Emeline Tufi Dadae**

The festival commemorated the first Hiri trade voyage that occurred more than 300 years ago.

EMPNG provided a PGK150,000 (USD40,245) sponsorship for the 2023 festival, which consisted of cultural performances from Motu Koitabu villages, the *Vanagi Heau Helulu* or 'canoe race', the arrival of the traditional *lagatoi* (a traditional double-hulled sailing watercraft) and crowning of the 2023 Miss Hiri Hanenamo. EMPNG has collaborated with the Motu Koita Assembly to support the Hiri Moale Festival since 2014.

EMPNG also supported the Motu Koita Assembly with their redevelopment project at Baruni Primary School. The project included the construction of two buildings that each contained three classrooms. In addition, EMPNG provided desks and chairs for 120 students who will use the classrooms.



**EMPNG and Baruni Primary School representatives with Motu Koita Assembly Chairman and Deputy Governor of the National Capital District, Dadi Toka Jr (third from left) and Governor of the National Capital District, the Honourable Powes Parkop (second from right), with students using some of the new desks donated by EMPNG**

To commemorate Literacy Week in September, Buk bilong Pikinini's Six Mile Library Learning Centre held its annual market day with support from EMPNG volunteers.





**EMPNG volunteers with staff and children at the Buk bilong Pikinini Six Mile Library Learning Centre**

The market day aimed to build literacy and numeracy skills in children through exchanging play money for food and craft items at market stalls housed in mini traditionally built kunai thatched huts. The children also learned how to withdraw money from a pretend automatic teller machine.

EMPNG has supported the work of Buk bilong Pikinini since 2011 through funding for educational toys, the Buk bilong Pikinini digital app launch, teacher training, and volunteer support for annual Literacy Week activities.

During 2023, EMPNG worked with the Rural Women's Development Foundation Incorporated to provide food donations to eight *safe haus* or 'safe houses' in the Hela Province to support 64 survivors who were displaced primarily due to violence. These *safe haus* helped protect victims with safe accommodation at a discreet location, food and other essentials, and legal support.



**Rural Women's Development Foundation Incorporated Program Coordinator, Marilyn Tabagua, receives *safe haus* food donations from EMPNG Upstream Senior Field Superintendent, Muthusamy Perumal**

### 5.1.3 National programs

In 2023, Port Moresby General Hospital received donations of surgical beds, a defibrillator, and surgical instruments from EMPNG to support the hospital's medical team.



**Port Moresby General Hospital Director Medical Services, Dr Kone Sobi, and EMPNG Medical Advisor, Dr Cain Kapiri, with EMPNG-donated medical equipment**

EMPNG also donated networking infrastructure to the University of Technology's Mathematics and Computer Science Department at the Haus Europa campus in Lae to enhance the department's network infrastructure and provide hands-on training for students. EMPNG's Information Technology team has supported the University of Technology since 2013.

Thirty students received scholarships funded by EMPNG as part of the 2023 Business and Professional Women's Association PNG LNG In-Country Scholarships Program for Higher Education in Papua New Guinea.



The Program, which supports students with completing secondary and tertiary education, was also extended to provide 40 scholarships for vocational education students from Hela Province. Since EMPNG began working with the Business and Professional Women's Association in 2019, 190 students have been funded through these scholarships.



**PNG LNG In-Country Scholarship recipients participate in vocational education training**

In April, EMPNG Senior Vice President – Production, Scott Sandlin, addressed almost 150 graduates at the University of Papua New Guinea's School of Natural and Physical Sciences 68<sup>th</sup> graduation ceremony in Port Moresby.



**EMPNG Senior Vice President – Production, Scott Sandlin, addresses graduates of the University of Papua New Guinea's School of Natural and Physical Sciences**

EMPNG workers and local communities celebrated Papua New Guinea's 48<sup>th</sup> Independence Day in September, with presentations and a trivia competition, traditional Huli dance performances, a flag raising ceremony, singing of the national anthem, and cultural displays of Papua New Guinea's four regions. The University of Papua New Guinea Creative Arts Group also conducted a contemporary performance at the LNG Plant to commemorate the nation's independence.



**Workers marked Papua New Guinea's 48<sup>th</sup> Independence Day by wearing traditional costumes, accessories, colours, and patterns that celebrate Papua New Guinean culture**

## 5.2 Volunteering

In 2023, more than 320 EMPNG workers volunteered 400 hours to support community-based activities in Papua New Guinea. Of these, about 180 volunteers participated in activities organised by the Employee Resource Group from ExxonMobil Haus in Port Moresby, and more than 140 volunteers participated in support activities in communities near the LNG Plant, HGCP, Moro, and Angore facilities.

In June, 80 EMPNG volunteers simultaneously conducted a community clean-up of the Kopeanda community in Hides, the HGCP, and Moro to support the 2023 World Environment Day theme of 'Beat Plastic Pollution'. At the LNG Plant site, EMPNG's Public and Government Affairs team conducted a clean-up that involved the collection of almost 1 tonne of waste from Lea Lea and Porebada villages. This was the largest volunteer activity of the year.



**EMPNG volunteers conducted a clean-up around Moro for World Environment Day**





**EMPNG clean-up volunteers at the HGCP**

Also in June, 18 EMPNG volunteers dedicated three hours to paint the halls and walls of Papa Village Community Hall, which is used for community gatherings. The paint and painting gear were donated by EMPNG. Another 23 volunteers spent two hours painting the newly installed Boera Primary School perimeter fence.



**EMPNG volunteers painting the Papa Community Hall**

During July, 28 EMPNG volunteers spent two hours collecting and disposing of rubbish from the Lea Lea Village beachfront. When the clean-up was completed, shovels, rakes, and other tools that were used for the clean-up were donated to local communities.



**EMPNG volunteers at the Lea Lea beachfront clean-up**

Another community clean-up occurred in August, when 18 EMPNG volunteers collected and disposed of rubbish from the Porebada Health Post and surrounding area.



**EMPNG volunteers and Porebada Health Post workers gathered before commencing the clean-up**

In November, 36 EMPNG volunteers joined EMPNG Chairperson and Managing Director, Tera Shandro, and Senior Vice President – Production, Scott Sandlin, in the annual Bel Isi PNG End of Violence Against Women Walk.



**The team of EMPNG volunteers ready to paint the Papa Community Hall**





**International rugby league player and PNG LNG Community Ambassador, Justin Olam, visits Angore Hayapuga Football Association Incorporated to donate sporting equipment and deliver messages about the importance of peace in communities. Justin also visited Komo Rugby Football League Association Incorporated players and youths from Inu Village during 2023**

The walk aimed to raise more community awareness about preventing family violence and violence against women, and to stand in solidarity with survivors of violence.



**EMPNG volunteers at Konedobu Oval in Port Moresby prepare for the 2.5-kilometre End of Violence Against Women Walk**



**More than 220 Christmas gifts were donated to Tari District Hospital for distribution to local communities**

In December, 40 EMPNG and contractor volunteers participated in a Christmas gift drive at Tari District Hospital where more than 220 gifts donated by EMPNG workers were delivered to patients and hospital staff. The gift drive coincided with a visit by EMPNG Community Ambassador, Justin Olam, who joined the volunteers and visited the hospital's paediatric ward to bring cheer to young patients.

In addition to community-based activities, EMPNG volunteers participated in events such as Remembrance Day, Independence Day, EMPNG's Family Fun Day, the Lead Country Manager Cup touch football competition, financial literacy training, and lunch-and-learn sessions during the year.

#### *Science Ambassador Program*

A total 1404 Grade 8 and 10 students from nine schools near the LNG Plant site participated in the ExxonMobil Science Ambassador Program in 2023. The Program aims to encourage students to consider careers in science, technology, engineering, and mathematics through interactive educational experiences.

Some 33 classroom lessons were delivered to participating schools across the LNG Plant site villages of Papa, Lea Lea, Boera and Porebada. This included Boera, Hagara, Baruni, Lea Lea, Papa and Porebada primary schools as well as Papa Junior High School, Redscar High School, and Badihagwa Technical Secondary High School.

The lessons were delivered by 26 Papua New Guinean Operations and Maintenance Technicians, along with other qualified volunteers from EMPNG and third-party contractor organisations. Lessons included theory and practical experiments on topics such as geology and the origins of oil and gas.





**LNG Plant Land and Community Affairs Officer, Shadrach Jaungere, gives a PNG LNG backpack to a student during the Science Ambassador Program at Papa Junior High School**



**EMPNG volunteers with Papa Junior High School students**

In November, a Student and Teachers' site tour of the LNG Plant was conducted as part of the Science Ambassador Program. Four EMPNG volunteers facilitated the tour with support from the LNG Plant Land and Community Affairs and Operations Technical teams.

For more information about the ExxonMobil Science Ambassador Program, refer to *Case Study: EMPNG volunteers make a difference*.

## 2023 PERFORMANCE HIGHLIGHTS

### COMMUNITY

**PGK30.6 million**

of contributions, sponsorships, in-kind support and community projects in 2023

**PGK84.2 million**

spent on infrastructure tax credit projects in 2023

**320+** volunteers

spent 400 hours in 2023 on volunteer projects

**70** scholarships

awarded as part of the PNG LNG In-Country Scholarships Program, including 40 new vocational education scholarships for students from the Hela Province

**1400+** students

participated in the ExxonMobil Science Ambassador Program in 2023

**160** women

from the Upstream area completed community-based financial literacy training

## CASE STUDY

## EMPNG VOLUNTEERS MAKE A DIFFERENCE

More than 1400 Papua New Guinean students were encouraged to consider careers in science, technology, engineering, and mathematics (STEM) in 2023 as a result of the commitment of EMPNG volunteers.

Since the ExxonMobil Science Ambassador Program was introduced in Papua New Guinea in 2013, EMPNG volunteers have delivered fun, interactive, and inspiring lessons about rocks and geology and the origins of oil and gas to more than 7200 high school students across the four LNG Plant site villages and the Upstream area.

Junior Kokoro, from Redscar High School, was one of many students to benefit from this Program and, as a result hopes to become an engineer with PNG LNG. Following the Science Ambassador Program, Junior's science and mathematics results, and those of his classmates, significantly improved.

To deliver these valuable lessons, EMPNG workers volunteer their time, which includes undergoing specific training to be eligible to teach lessons about geology and the origins of oil and gas using prepared science kits.

EMPNG volunteer, Jackson Wamba, said teaching students about STEM subjects was highly rewarding.

***"The students were curious to learn about EMPNG's Papua New Guinean workforce and were keen to pursue a career with EMPNG. We encourage them to prioritise their education and choose a STEM career," Jackson said.***

Volunteer, Andrea Wagiam, chose to participate in the Program to encourage more females into the energy sector.



**EMPNG Customer Experience Advisor, Andrea Wagiam, delivering a Science Ambassador Program lesson**

***"My aim is to promote STEM education and enlighten students about the significance of gender diversity in driving innovation," she said.***

***"One potential strategy is to help young boys and girls adopt a growth mindset in this field through teaching and creating an environment that promotes STEM.***

***"Volunteering allows us to connect with our communities through helping with the smallest tasks and being an advocate that can make a difference in the lives of others. Everyone has the potential to influence the leaders of tomorrow."***



**Jackson Wamba (front left) with students of Badihagwa Technical Secondary High School**





# PART B



## ENVIRONMENT

# EMPNG aims to preserve the unique biodiversity values of Papua New Guinea, while mitigating environmental impacts associated with production activities.

To achieve this, EMPNG operates in accordance with the Biodiversity Strategy and three Environmental Management Plans.

The Biodiversity Strategy outlines how potential impacts on biodiversity will be assessed and managed in the long-term, and how EMPNG will offset residual impacts associated with the footprint of PNG LNG with equivalent biodiversity gains.

The Environmental Management Plans outline EMPNG's approach to managing air, noise, water and waste impacts, as well as the company's commitment to preserving cultural heritage, managing invasive plant and pest species, controlling access to sensitive areas and reinstating native vegetation.



# 6



To preserve Papua New Guinea's unique biodiversity, EMPNG works with relevant stakeholders to deliver commitments outlined in the Biodiversity Strategy.



The Biodiversity Strategy has two components: a Biodiversity Offset Program, and a Biodiversity Implementation and Monitoring Program. Within the Biodiversity Implementation and Monitoring Program are four Programmed Monitoring Activities (PMAs) that help verify the achievement of the Strategy's objectives:

- PMA1 – Remote Sensing of Broad-scale Land Cover
- PMA2 – Condition Surveys of Focal Habitats and Significant Ecological Features
- PMA3 – Biodiversity Surveys
- PMA4 – Efficacy of Biodiversity Offsets.

During 2023, EMPNG's Biodiversity Strategy was featured as a case study in: *A guide to developing biodiversity action plans for the oil, gas and alternative energy sector*, which was jointly developed and published by IPIECA and the International Association of Oil and Gas Producers.

## 6.1 Biodiversity Offset Program

EMPNG's Biodiversity Offset Program, which consists of five Components as shown in Figure 6.1, outlines how biodiversity activities are to be conducted.

Components 1, 2 and 3 form the foundation of the Program by acknowledging that sustained conservation outcomes can only be achieved through capacity building at national and regional levels. These foundation components are collectively called 'enabling activities'.

Building on this foundation by enhancing the protection of existing conservation areas or establishing new protected areas is intended to achieve 'conservation outcomes on the ground' as outlined in Components 4 and 5 of the Program.

### Enabling activities

The first component of 'enabling activities' was completed in 2017 when the *Protected Area Planning for the Kikori River Basin* report, which was developed in collaboration with the

Wildlife Conservation Society, was published.

Through Component 2, EMPNG aims to support CEPA with implementing its National Biodiversity Strategy and Action Plan. Ongoing engagement with government, community, industry, and academic conservation representatives is key to this Component.

To build the technical capacity of conservation professionals and enhance community conservation capacity, Component 3 involves working with the New Guinea Binatang Research Centre to deliver the Enhancing Conservation Capacity Program. It involves training students for their Master's and PhD degrees, as well as providing short training courses for biologists and community conservation practitioners. In 2023, two Master's degree students were supported through this Program to complete their studies at the University of Technology in Papua New Guinea, and two PhD students continued to progress their studies at the University of South Bohemia in the Czech Republic under the Program. The two Master's degree students are on target to complete their study program and graduate in April 2024.

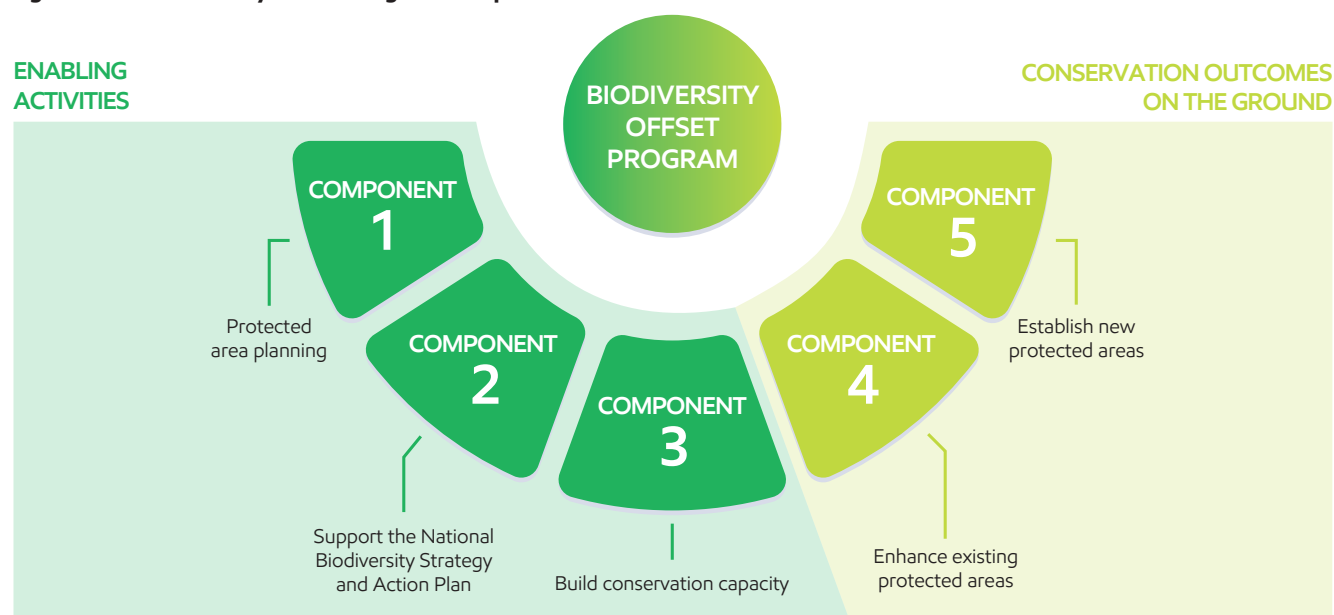
### Conservation outcomes on the ground

To enhance the management effectiveness of the Lake Kutubu Wildlife Management Area (WMA) under Component 4, EMPNG works with the Lake Kutubu WMA Committee, which is responsible for management of the WMA.

In 2023, the Lake Kutubu WMA Committee identified waste management as a key concern within the WMA due to the growing size of the community. Therefore, the Committee focused its efforts on waste management awareness, which included organising community clean-a-thons in local villages.

EMPNG has been able to re-engage the Neiru WMA Committee after more than five years due to the resolution of an internal conflict between local communities. Engagements were conducted with the Neiru WMA Committee in May and October.

**Figure 6.1 – Biodiversity Offset Program Components**







**EMPNG Biodiversity team members with Ero Primary School children during a Neiru WMA engagement**

EMPNG has appointed a new Biodiversity Advisor, Kerry Kimiafa, who will work with the Neiru WMA and Lake Kutubu WMA committees to help them enhance protected area programs.



**Community forum in Ero Village held with Neiru community members and CEPA representatives to discuss the Neiru WMA**

A new proposed Sanumahia WMA Committee met during 2023 to raise awareness with community members and encourage them to participate in the Committee.

The Lake Kutubu Management Plan is progressing, and a workshop will be held in 2024 with stakeholders such as the district provincial administration, relevant Papua New Guinean Government departments and civil society organisations for the review process.



**Lake Kutubu**

EMPNG invited Upstream area community members to the HGCP during 2023 to discuss protected area planning. During these engagements, Biodiversity Field specialists Rebecca Lovi and Isaac Wama discussed the biodiversity values of Hides Ridge and shared results of biodiversity surveys that had been conducted since 2015. Community members communicated that Hides Ridge was important to Huli culture.

As part of the biodiversity offset program, EMPNG has been working with education officials to develop a curriculum for Hela schools based on the cultural significance of Hides and Homa-Beneria Ridge.

An upper primary school unit of work and draft framework for a teacher in-service program was developed during the year. EMPNG will continue engagements in Hela in 2024.





Lower Kikori landowners at the conservation deed signing at Kikori Station in October

Community engagements were also conducted in Kikori to finalise resource mapping and conservation deeds for new protected areas under Component 5. In October, a key milestone was achieved after 10 years of community engagements with 11 communities signing conservation deeds. The signing was witnessed by CEPA, Gulf Provincial and Local-Level Government officials and EMPNG. Refer to *Case Study: Record number of conservation deeds signed in Papua New Guinea – More than 20,000 hectares to be protected for further information.*

## 6.2 Biodiversity Implementation and Monitoring Program

The Biodiversity Implementation and Monitoring Program continues to advance its four PMAs:

- **PMA1 – Remote Sensing of Broadscale Land Cover.** Remote sensing imagery is used to identify broadscale changes to land cover because of natural or anthropogenic processes, including the direct and indirect residual impacts from PNG LNG.
- **PMA2 – Condition Surveys of Focal Habitats and Significant Ecological Features.** This involves field surveys to determine the condition of focal habitats and significant ecological features that were avoided during PNG LNG construction.
- **PMA3 – Biodiversity Surveys.** Involves documenting trends in flora and fauna species diversity and abundance to confirm the intactness of the Upstream area and retention of long-term biodiversity values.
- **PMA4 – Efficacy of Biodiversity Offsets.** EMPNG monitors the progress of each Biodiversity Offset Program component to confirm whether Objective 4 of the Biodiversity Strategy, to identify, measure and offset significant residual impacts, is being achieved.

### *PMA1 – Remote Sensing of Broadscale Land Cover*

A specialist contractor is used to gather satellite imagery and deploy remote sensing tools that help monitor broadscale land cover changes in the PNG LNG Upstream area. Ground-truthing enables verification of the broadscale monitoring so that EMPNG can determine if any changes are directly related to PNG LNG activities.

In 2022, a Lake Kutubu Pilot study was conducted to assess habitat change in the Lake Kutubu WMA from 2014 to 2021.

Results of the study, which were published in 2023, showed that approximately 2000 hectares of land had changed since establishment of the Lake Kutubu WMA. The most significant change was in 10 percent of the terrestrial forest area, which had become wetland forest. This was not caused by PNG LNG activities.

### *PMA2 – Condition Surveys of Focal Habitats and Significant Ecological Features*

EMPNG continues to monitor 20 sites that are located close to PNG LNG infrastructure and the pipeline ROW to determine if there have been any changes to focal habitats or ecological features. The 2023 assessment was postponed to 2024 because of security concerns in the Upstream area.



*PMA3 – Biodiversity Surveys*

Biennial field monitoring surveys are conducted to determine trends in flora and fauna species diversity and abundance. The 2023 survey was also postponed to 2024 due to the security concerns in the Upstream area.



**Sultan dragonfly *Camacinia gigantea***



**Male Crested Bird-of-paradise *Cnemophilus macgregorii***  
© C.B. Frith

*PMA4 – Efficacy of Biodiversity Offsets*

EMPNG continually tracks the progress of all Biodiversity Offset Program components and monitoring activities against key performance indicators that are listed in the Biodiversity Implementation and Monitoring Program, which is published on the PNG LNG website.

[www.pnglng.com](http://www.pnglng.com)



In 2023, EMPNG was tracking well against key performance indicators for the implementation and monitoring program.

## 2023 PERFORMANCE HIGHLIGHTS

## BIODIVERSITY

# 11 deeds signed

for community conservation, which is the largest number of conservation deeds ever signed at one time in Papua New Guinea

# ~1000 people

representing more than 100 clans across two local-level government areas in the Lower Kikori region witnessed the signing of conservation deeds

# >20,000 hectares

of land in the Lower Kikori region has been committed by Papua New Guinean landowners for conservation efforts

# 4 post-graduates

completing Master's and PhD degrees under the Enhancing Conservation Capacity Program

# 5 components

in EMPNG's Biodiversity Offset Program – Components 1, 2 and 3 are collectively called 'enabling activities'; Components 4 and 5 are intended to achieve 'conservation outcomes on the ground'

## CASE STUDY

## RECORD NUMBER OF CONSERVATION DEEDS SIGNED IN PAPUA NEW GUINEA – MORE THAN 20,000 HECTARES TO BE PROTECTED

On 24 October, more than 100 clans across two local-level government areas in the Lower Kikori region signed 11 community conservation deeds, which is the largest number of conservation deeds ever signed at one time in Papua New Guinea. It is the culmination of more than 10 years of community engagement in the Kikori Delta area regarding conservation. Some 1000 community members witnessed the event.

As a result of these conservation deeds, more than 20,000 hectares of land in the Lower Kikori region has been committed by Papua New Guinean landowners for conservation efforts.

In addition to local communities, the Deputy Governor of the Gulf Province, the Local-Level Government President, Kikori Magistrate, local councillors, and representatives from CEPA and EMPNG attended the signing of the conservation deeds.

The day after the deeds were signed, all communities in the Kikori Conservation Community (*Yumi Kikori*) held a combined meeting.

This is the third time all Kikori communities have gathered to meet and discuss conservation. The meeting involved more than 200 representatives from many communities along the Kikori River, from Wau Creek and Kaiaua to the coastal villages of Veiaribari on the west and Kemei on the east and included the Neiru WMA Committee.

Despite all these communities being at different stages in their conservation journeys, they collaborated as one

*Yumi Kikori* team to discuss local conservation issues. *Yumi Kikori* means 'we are Kikori' in Tok Pisin.

EMPNG Environment, Regulatory and Biodiversity Manager, Neil Darlow said,

***"This collective commitment from communities and local authorities demonstrates the dedication of the Lower Kikori region people to preserving their natural environment."***

***"It is a significant milestone in protected area planning and puts these communities in a strong position to make even greater strides in conservation to safeguard Papua New Guinea's natural heritage for future generations."***

The communities are following CEPA's five-step process for establishing protected areas, with EMPNG's facilitation support. The 11 communities are currently at Step 1: Making proposals, which involves submitting an expression of interest to CEPA.

As part of protective area planning, EMPNG and CEPA plan to establish the *Yumi Kikori* Community Based Organisation, a legally recognised body to operate as the central organisation that oversees all WMAs in the Lower Kikori region.

EMPNG and CEPA also aim to increase the engagement of young people and women in community conservation committees.



Eleven conservation deed booklets displayed for the Kikori community ahead of the conservation deed signing event in October



A Kemei Clan representative brings his baby son to symbolically witness the signing of his clan's conservation deed, supported by EMPNG Senior Biodiversity Advisor, Banak Gamui





Through a process of continuous improvement, EMPNG is maintaining its commitment to effective environmental management across all facilities.



## 7.1 Air

EMPNG began implementing numerous measures in 2022 to reduce flaring, which has led to a reduction of greenhouse gas emissions across all worksites.

During 2023, EMPNG advanced the engineering design for energy storage systems at both the LNG Plant and HGCP to reduce fuel gas consumption.

Gross flaring volumes in 2023 were 465 million standard cubic feet, which is the lowest flare on record since the start of production. This was due to more stable operations and ongoing flare reduction initiatives at both the LNG Plant and HGCP.

PNG LNG facilities generated approximately 1960 kilotonnes of carbon dioxide equivalent emissions during 2023. Most emissions were generated from gas turbine fuel consumption at the LNG Plant and HGCP.

Every three years, stack testing is conducted on a representative selection of air emissions sources that include compressors, incinerators, power generators, heaters, and furnaces. This testing helps confirm that emissions are meeting Environment Management Plan criteria. The stack test program does not include vehicles and heavy machinery but they are operated and maintained in accordance with manufacturer specifications. The next routine stack test is scheduled for 2024.

## 7.2 Noise

No noise-related incidents or near misses were recorded at any PNG LNG facility in 2023.

In accordance with EMPNG's Environmental Management Plans, biannual noise monitoring is conducted in the Upstream area and LNG Plant site during daylight and evening hours. All monitoring events showed noise levels remained within Environment Permit criteria.

## 7.3 Water

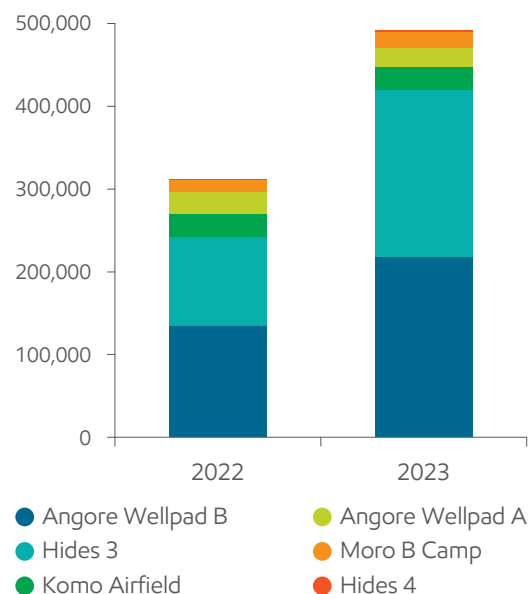
EMPNG regularly monitors the volume of water extracted for production use from groundwater, seawater, and surface streams to confirm it remains within permitted extraction limits. Monitoring of discharges to water, surface water quality, and groundwater quality also occurs to verify conformance with relevant Environmental Management Plan and Environment Permit criteria.

### 7.3.1 Consumption

Water is primarily used for production process operations, worker camps, maintenance activities, dust suppression, safety showers and firewater systems. Freshwater from approved groundwater sources, and a permitted volume of surface water, are extracted from the Upstream area. At the LNG Plant, desalinated seawater is used for production activities. Figure 7.1 shows freshwater volumes taken from each Upstream area groundwater extraction source during 2023.

**Figure 7.1 – Groundwater extraction**

VOLUME (KILOLITRES) BY EXTRACTION SOURCE (WATERBORE)



During the year, more than 491,400 kilolitres of groundwater was extracted for use in the Upstream area. This compares to 311,855 kilolitres extracted in 2022. The increase was mainly due to supporting ongoing drilling activities at Angore Wellpad C as well as HGCP, Komo Airfield and Moro B Camp operations, and pipeline ROW works.

Some 1900 kilolitres of water was extracted from surface streams in 2023. This is a decrease compared to almost 4400 kilolitres extracted in 2022 due to the completion of pipeline installation works at Angore.

One Severity Level I non-conformance was recorded during the year when 19,700 litres of water was extracted from a non-approved surface water source at Kilometre Point 61. Corrective actions included providing EMPNG and contractor workers with refresher awareness training on Environmental Management Plan compliance and the importance of extracting water from the approved water extraction point.

At the LNG Plant site, some 587,200 kilolitres of seawater was extracted for the desalination plant. This was consistent with previous years. Seawater that had been extracted was used to generate almost 84,000 kilolitres of treated water for production use.

### 7.3.2 Monitoring

Operational maintenance is guided by regular testing of wastewater quality in retention systems and treatment plants to identify if corrective adjustments are required. In situations where testing parameter variations or exceedances are detected, non-conformances are raised. This helps track any identified issues through to resolution so that operators can maintain optimum levels within each relevant system.

Two water quality-related Severity Level I non-conformances were recorded during 2023. One of the non-conformances was an exceedance of turbidity and total suspended solids in the receiving environment related to drilling at Angore Wellpad C.



This was caused by erosion following the release of groundwater at high pressure and velocity at the blooie line discharge point, which was installed to support the foam drilling phase. Corrective actions were implemented to remediate the eroded surface and enhance sediment and erosion control measures. Subsequent monitoring of the receiving environment showed all parameters to be within Environment Permit criteria.

An ammonia-nitrogen exceedance was recorded as a non-conformance at the HGCP wastewater treatment plant and was due to the sludge pump impeller being clogged with build-up remnants. Immediate corrective actions were taken to clean the impeller and return it to operation. Subsequent monitoring showed the sludge pump complied with the discharge limit. Compliance and verification monitoring in the receiving environment at the HGCP stormwater pond downstream of the wastewater treatment plant showed all results to be within Environment Permit criteria.

Groundwater monitoring is conducted by EMPNG every six months. Results of groundwater monitoring at the LNG Plant either remained within Environment Permit criteria or reflected naturally occurring fluctuations, which were confirmed in a 2021 assessment conducted by a third-party specialist consultant. All other groundwater wells within the LNG Plant site and around the landfill area were within Environment Permit criteria during 2023.

Groundwater monitoring at the HGCP site continued to show that results were within Environment Permit criteria and reflective of background levels. At the Hides Waste Management Facility (HWMF), groundwater monitoring results either remained within Environment Permit criteria or reflected naturally occurring fluctuations.



**LNG Plant Field Environment Specialist, Barbara Kipak, conducting water quality monitoring at Caution Bay**

## 7.4 Materials management

EMPNG regularly reviews the sourcing of raw materials for production-related activities to maintain responsible resource use.

To support production activities in 2023, EMPNG purchased and used some 162,000 cubic metres of aggregate, 460 cubic metres of road base, 140 cubic metres of rock, 630 cubic metres of sand and 100 cubic metres of concrete.

These values represented an overall decrease in the use of raw materials primarily due to the completion of the Angore Gathering System pipeline installation.

For ongoing earthquake recovery works, pipeline activities, road pavement repairs and drainage improvements in the Upstream area, EMPNG sources raw materials through approved Lanco-operated quarries that operate under their own environment permits. No raw materials were required for LNG Plant site works during 2023.

## 7.5 Waste management

Ongoing waste management initiatives are helping to consistently improve long-term waste management solutions at all EMPNG worksites.

In June, EMPNG waste management contractor TWM PNG Limited (TWM) conducted an educational session about the four 'Rs' of waste management with EMPNG workers to help them identify eco-minded choices to reduce waste. The four 'Rs' include the 'Reduce', 'Reuse' and 'Recycle' steps along with a new 'Refuse' step, which promotes saying "no" to single use plastics such as packaging, bags, and straws, and instead opting for more sustainable alternatives.



**TWM Quality and Environment Technical Advisor, Lavinia Bala, presents the four 'Rs' to workers at ExxonMobil Haus**

EMPNG's Earthquake Recovery team at Moro demonstrated an initiative to reduce waste when they led a clean-up of a roadside rest area near Kilometre Point 70, which is used by both the public and the EMPNG team during their commute.



**Earthquake Recovery team members cleaning up the roadside rest area near Kilometre Point 70**

To reduce the amount of non-restricted waste sent to landfill, third-party facilities are used to recycle operational waste and, where possible, reuse initiatives are implemented. During 2023, more than 35 tonnes of timber was reused through either: donation to Papa and Lea Lea villages for reuse in their community infrastructure projects; used onsite by the waste management contractor TWM; or returned to the freight supplier for reuse through their recycling program.

In 2023, 156 tonnes of waste oil from the Upstream area was sent to the TWM facility at Roku for storage, while another 62 tonnes of waste oil from the Upstream area was stored at the HWMF in Kopeanda.

More than 186 tonnes of scrap metal and 30 tonnes of spent batteries were transported to appropriately qualified Papua New Guinean businesses for recycling, while the TWM facility at Roku compacted and stored more than 29 tonnes of light plastics during the year. Used printer toners from the LNG Plant site were sent to an approved facility in Port Moresby for recycling. From 2023, used printer toners from the HGCP site were also recycled at this facility with the first HGCP delivery weighing almost half a tonne.

ExxonMobil assesses new facilities using an experienced independent contractor. Existing waste management facilities are re-assessed every four years to confirm they continue to meet EMPNG requirements. In October, one new facility was assessed for potential use and two existing facilities were re-assessed for continued use.

EMPNG continues to treat wastewater from equipment washdown onsite at the HGCP using a process of pre-treatment through a carbon filtration unit and secondary treatment through the HWMF vetiver grass reed bed system. Approximately 18 tonnes of wash water was treated using this process in 2023. Groundwater monitoring at the HWMF showed the treated water did not impact groundwater quality.

A wash water management process was introduced at the HGCP during the year, which involved injecting wash water that had been treated to meet water quality criteria into the produced water disposal well. The process was initially approved by CEPA in 2018 and received additional approval by the Department of Petroleum and Energy in 2023. By the end of the year, more than 260 tonnes of wash water had been managed using this process.

At the LNGP Plant site, more than 380 tonnes of wash water was produced from molecular sieve cleaning activities and discharged into the stormwater drain after filtration and testing confirmed water quality criteria was met. An additional 31 tonnes of spent molecular sieve waste generated from this activity was stored onsite. EMPNG's waste management contractor received approximately 87 tonnes of LNG Plant site medical and food waste and 11 tonnes of ExxonMobil Haus waste for incineration at the Roku facility in 2023.

The HWMF medical waste incinerator was used to dispose of approximately 11 tonnes of biological and medical waste from the HGCP, Komo and Angore in 2023.

## HIGHLIGHT

### INVESTING IN PAPUA NEW GUINEAN WASTE MANAGEMENT

EMPNG continues to support and invest in building the capacity of Papua New Guinean waste management businesses, with local waste management providers engaged in production operations.

In January, a new Papua New Guinean waste contractor, Carbon Recycling PNG opened the nation's first onshore waste oil recycling facility in Lae. Following an 18-month trial period and environment permit process, the facility achieved its Environment Permit through CEPA and became compliant with ISO14001 standards. During the trial period, more than 270,000 litres of waste oil was processed. The facility has the capability to process up to 21 million litres of waste oil per year.

In October, an assessment of Carbon Recycling PNG's waste oil recycling facility was conducted so that it could potentially be added to EMPNG's Approved Waste Site List. At the same time, four-yearly review re-assessments were undertaken on two existing key waste management facilities: TWM's Roku Integrated Waste Management Facility and Pasifika Eagle Chemicals Limited's Laloki Waste Management Facility as part of EMPNG's normal contractor review process.

The assessments covered incinerator, wastewater treatment, landfill and solidification operations, hazardous waste storage, transboundary waste exports, waste oil management and recycling, and sludge treatment. All three waste management contractors received a rating of 'Good' and were approved for operation with EMPNG.

Recycling plays an important part of EMPNG's waste management practices, with more than 2730 tonnes of waste recycled and/or reused since the start of production. This includes scrap metal, waste oil and light plastics recycled through third-party facilities, surplus wood from packaging materials donated to local communities and unused chemicals returned to the supplier for future reuse.



Carbon Recycling PNG's waste oil recycling facility in Lae



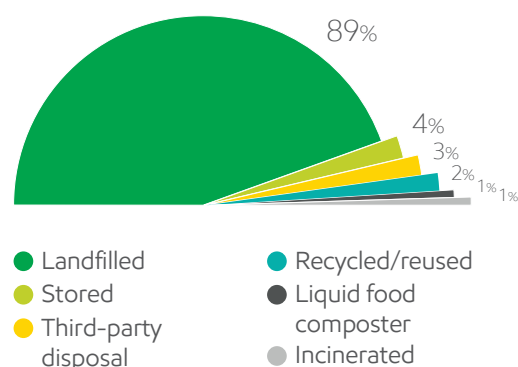
Approximately 9750 tonnes of non-restricted waste was sent to the HWMF landfill during 2023 compared to some 5100 tonnes in 2022. This increase was due to additional drill cuttings waste produced from drilling operations at Angore. Landfill Cell C at the LNG Plant site was used to dispose some 218 tonnes of non-restricted waste from the LNG Plant as well as 35 tonnes of non-restricted waste from ExxonMobil Haus. In addition, EMPNG received more than 150 tonnes of waste from Santos worksites during the year as part of a reciprocal waste services agreement. This waste was disposed at the HWMF landfill.

HGCP and LNG Plant food waste is processed through liquid food composters. These are fully enclosed automatic commercial bio-digesters that compost solid and liquid food waste within 24 hours and turn it into greywater, which can be safely released into the wastewater system for further treatment and disposal. The HGCP liquid food composter processed 44 tonnes of food waste, and the LNG Plant composter processed 51 tonnes during 2023.

Waste produced throughout the year mainly comprised camp waste, sanitary wastewater and sludge, operations and maintenance waste as well as general office waste. As shown in Figure 7.2, most non-restricted waste was disposed in landfill during the year.

**Figure 7.2 – Waste disposal**

PERCENTAGE BY DISPOSAL METHOD



## 7.6 Spill prevention and response

EMPNG and its contractors have procedures and processes in place to mitigate spill events. If a spill occurs, a rapid and appropriate response is implemented to minimise environmental impact.

Spills at all worksites are monitored and recorded to reduce the risk of significant spill events. EMPNG also monitors near misses, which are incidents where chemicals or hydrocarbons are released from primary containment, such as a pipe or tank that is intended to store them but are fully contained in secondary containment or on an impermeable surface so the substances do not penetrate the ground or reach water.

During the year, 39 Severity Level <0 spill incidents were recorded. These consisted of three wastewater spills, 33 hydrocarbon spills and three chemical spills.

All spills were contained within worksite boundaries except for one spill of 150 millilitres of biodegradable oil, which occurred when a hydraulic hose separated from its fitting on an excavator. A nearby spill kit was used to clean up the spill quickly and appropriately.

The wastewater spills involved one release of approximately 20 litres of wastewater from a storage tank to ground at the LNG Plant site, an overflow of an equalisation tank also at the LNG Plant site that resulted in a spill of 250 litres of wastewater to ground, and 2780 litres of monoethylene glycol overflow from the primary containment bund during commissioning of the produced water disposal well at the HGCP.

Five hydrocarbon spills involved 5 litres or less of hydraulic fluid due to factors such as a mechanical failure of a hydraulic hose on a bobcat, damage to a hydraulic hose on an excavator, an overflow of oil due to a loose fitting on a micro piling drilling unit, a hydraulic fluid leak from equipment at Hides Wellpad B, and an overflow of waste oil from heavy rain entering storage drums. One diesel fuel spill of 10 litres occurred when an unknown person with a hand fuel pump entered the fuel storage location at the HGCP. A second diesel fuel spill of 12 litres was recorded when fuel leaked through an open drain valve on the primary containment bund while a refuelling truck was adding fuel to the LNG Plant site communication tower.

One chemical spill occurred when 18 litres of drilling fluid, diluted with rainwater, leaked from a primary containment bund due to a tear in the bund liner. The other 28 spills were all less than 1 litre. In addition to spills, there were 21 near misses recorded in 2023.

Regular spill prevention toolbox talks continue to be held with EMPNG and contractor work teams to help prevent spills and near-misses, as well as share lessons learned.

To provide workers with the skills necessary to reduce the incidence of spills, and respond appropriately if a spill occurs, workforce training is conducted about the types of oil spill response equipment and the appropriate application of each type of equipment on land or water. Every training session involves response strategies, methods, and practices. This training is provided to emergency response workers, engineers, operations and maintenance, safety, and environment teams.

## 7.7 Reinstatement, erosion and sediment control

To support Upstream area communities impacted by the 2018 earthquake, EMPNG is continuing to progress recovery works on roads, bridges, and other critical infrastructure. Most of this work is conducted on steep and challenging terrain along the pipeline ROW.

Following a risk re-assessment in 2022, the river crossing repair scope of work that was initially scheduled for 2024 was brought forward to 2023.

This work involves micropiling and riprap installation to stabilise riverbanks, as well as the installation of concrete block armouring for two river crossings at Kilometre Points 61.8 and 65.9 along the pipeline ROW.

During 2023, work was completed on the rainwater tank at the HWMF in Kopeanda, and work began on the construction of an access track at Kilometre Point 60.7 and micropiling, grouting and drainage works at Kilometre Points 86.1 and 86.6.

Steep gradient works were also safely completed at Kilometre Points 81 and 82 during the year. A combination of micropiles, grouting and berm sloping was used to manage water runoff and stabilise the slope. In addition, repair works continued at Kilometre Points 86 and 61.



**A 'spider' mobile walking excavator installing micropiles on a 37 degree incline**

To date, EMPNG's earthquake recovery team has drilled some 49,200 metres of micropiles to stabilise slopes, including some that exceed a 35 degree angle.

Reinstatement and rehabilitation works, including the installation of drainage and berms, was completed at the Angore pipeline ROW following successful hydrotesting conducted in April.



**Geofabric installed along a steep section of the pipeline ROW to support native plant growth near the HGCP**



**Reinstatement progress along a section of the Angore pipeline ROW**

## 7.8 Ecology

EMPNG has stringent rules and procedures in place to avoid impacts to features of ecological importance in and around PNG LNG facilities. This includes prohibiting workers from disturbing or harassing wildlife and migratory species habitats, hunting fauna, possessing hunting, and fishing equipment, gathering firewood and plants or bush foods, and possessing wildlife products.

Environmental pre-construction surveys conducted throughout the PNG LNG construction phase identified ecological sensitivities that needed to be managed by EMPNG. To avoid and otherwise mitigate potential impacts to the identified ecologies, site-specific mitigation and management measures were implemented. These measures included regular inspections to monitor the condition of sensitive ecological features and determine the significance of any changes. Worker education was also provided to reinforce EMPNG's wildlife management policy and Environment Permit conditions that prohibit hunting, and the collection of flora or fauna.

Reptile monitoring at the LNG Plant site during 2023 reported sightings of more than 300 snakes. Of these, 241 were caught and safely relocated, consisting of 20 Papuan taipans (*Oxyuranus scutellatus canni*), 121 mildly venomous snakes and 100 non-venomous snakes.

EMPNG celebrated World Coral Triangle Day on 9 June with a coral planting activity, as outlined in *Case Study: EMPNG seeds a coral forest*.

## 7.9 Invasive species, pests and plant pathogens

To preserve Papua New Guinea's unique native ecosystems, EMPNG implements control measures that aim to prevent invasive weeds, pests, and plant pathogens from entering or establishing within and around PNG LNG facilities. This includes containing invasive species that were already present prior to PNG LNG construction. Production workers and contractors are prohibited from bringing horticultural and agricultural plants onto EMPNG worksites, especially in the Hides and Homa – Benaria Ridge regions, because these areas are of high biodiversity value so must remain largely undisturbed.



Education about invasive weed and pest species, including cane toad management, is also conducted with EMPNG's workforce and local communities. As part of the annual invasive weeds monitoring survey conducted in 2023, the New Guinea Binatang Research Centre surveyed an additional 52 plots for invasive weed species, bringing the total number of transects surveyed to 785. With each transect measuring 100 metres, this is equivalent to 78.5 kilometres of the pipeline ROW surveyed. Monitoring data indicated that, generally, Priority 1 weed species diversity had not changed compared to the 2022 survey. It also showed that the Priority 1 weed *Piper aduncum* was common in all elevations and continued to be a species of concern. Priority 1 weed *Desmodium sequax* was common at higher elevations, while the Priority 1 weed *Ludwigia leptocarpa* was common in the lowlands.

In 2023, the New Guinea Binatang Research Centre survey team collected a sample from a plant that was previously identified during a pre-construction survey to genus level and sent it to their laboratory in Nagada, Madang for further analysis. The sample was confirmed as *Setaria sphacelata*, a pastureland grass that was introduced to support grazing in Papua New Guinea. From this analysis, the plant was reclassified as a weed. More plant specimens that had previously been identified to genus level are being studied further to document them to species level.

In November, EMPNG incorporated its weed control procedure into the pests and plant pathogens monitoring process. This enables weed surveys to be adapted so that weed control contractors can be more effective in their planning and targeting of priority weeds to be controlled. It involves more defined weed management across weed inspections, audits, control, and monitoring. An observation and control tracker is maintained as part of this procedure.



**Target spraying of Priority 1 weed *Desmodium sequax* along the Hides Ridge Access Road**

## 7.10 Regeneration monitoring

The 2023 biennial survey was conducted during March and April to monitor the regeneration of plant species following temporary disturbance from construction activities. The survey, completed by six Papua New Guinean citizens from the New Guinea Binatang Research Centre, covered all monitoring plots from Hides Ridge to Kopi Scraper station except Omati due to logistical challenges with access to the area.

This was the fifth biennial survey to be completed since the regeneration monitoring program began in 2015. An analysis of the survey will be completed in 2024.



**Binatang Research Centre regeneration survey team member, Gibson Maiyah, marking out a survey plot on the pipeline ROW near Moro**

Ongoing mangrove monitoring at the LNG Plant Caution Bay landfall site confirmed that mangroves were maintaining good regeneration progress throughout the year. EMPNG continues to educate LNG Plant site communities about the importance of mangroves to the local ecosystem while appropriate control measures are being maintained to prevent vehicular access to, and harvesting of, the mangroves. Workers and communities at all EMPNG worksites continue to receive vegetation management awareness training during community engagements and worksite inductions.



**EMPNG Biodiversity Senior Advisor, Banak Gamui, checking seeds of the *Avicennia marina* mangrove species regenerating at the LNG Plant Caution Bay landfall site**



**A regenerated mangrove sapling at Caution Bay**



## 7.11 Access control

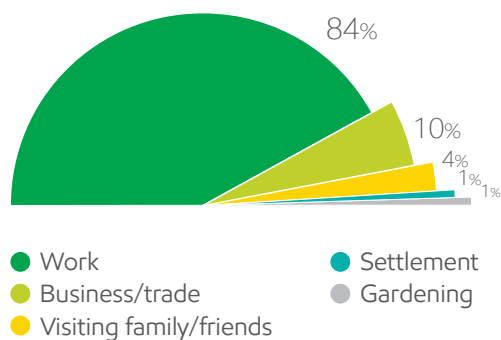
Data is collected at manned EMPNG security checkpoints to monitor the type and number of vehicles that use EMPNG-controlled roads and reasons for the road use.

During 2023, a total 3180 vehicles passed EMPNG's security checkpoints. Most drivers cited work as the primary reason for road access, as shown in Figure 7.3.

Figure 7.4 shows the types of vehicles that used EMPNG-monitored roads during the year.

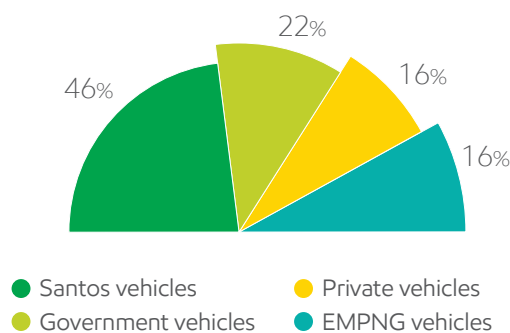
**Figure 7.3 – Purpose of access**

PERCENTAGE OF TRAFFIC USING EMPNG-CONTROLLED ROADS BY PURPOSE



**Figure 7.4 – Vehicle types**

PERCENTAGE USING EMPNG ACCESS POINTS



EMPNG and Santos vehicles comprised 62 percent of road users, which is consistent with the previous year.

## 7.12 Quarantine management

EMPNG and its contractors comply with National Agriculture Quarantine and Inspection Authority standards for all freight that is imported into Papua New Guinea.



A group of Huli dancers prepare for a traditional dance performance known as a *màli*. The *màli* dance usually consists of two opposing lines of decorated dancers who chant a two-tone shout (*màli iwa*) while beating hand drums. The dancers take short hopping steps in unison and in one direction. This performance has no words and is highly repetitive but is perceived as the quintessential manifestation of Huli culture and tradition. The *màli* was traditionally performed prior to an impending battle when a warrior would drive a small, sharpened stake into the cleared dancing ground (*hama*) and mark it with rings of coloured clay to signify his intention in battle. *Màli* dances now mark festival openings and large inter-clan and inter-tribal compensation exchanges.



A total 1528 shipments were received in 2023 compared to 1140 shipments during 2022. Planned major maintenance activities at both the HGCP and LNG Plant site were the main contributing factors for the increase in shipments during 2023. Eighty-five of the shipments received were inspected and 15 required re-fumigation to comply with the Authority's standards. Vendors managed re-fumigations at the place of origin.

Since production began, 18,629 shipments have been received. Of those, 6299 were inspected by the National Agriculture Quarantine and Inspection Authority and 864 required re-fumigation. While there was an increase in re-fumigation in 2023, there has been a general downward trend in the number of shipments requiring re-fumigation since the start of production.

### 7.13 Cultural heritage

The oral histories, traditional knowledge and cultural identity of Papua New Guinea are maintained through relationships with, and the use of, land and natural resources. Cultural heritage is often expressed through waterholes, trees, caves, and many other environmental and habitat features that are intertwined with biodiversity. EMPNG aims to preserve the culture and history of environments located near production facilities.

During 2023, 57 workers completed cultural heritage induction and awareness training sessions at the LNG Plant site, while 59 completed training at Upstream worksites. This included eight workers at the LNG Plant site and 10 at Upstream worksites who completed the supervisor level cultural awareness training course.

Cultural Heritage continues to be integral to community engagements for the Biodiversity Offset Program.



**Resource mapping in the Lower Kikori**

In 2023, EMPNG continued to capture important cultural heritage sites and features as part of resource mapping exercises undertaken with Lower Kikori communities. Community engagements with Hides area communities involved the sharing of cultural folklore and creation stories, which links these communities to important environmental values such as animal and plant species and forest habitats.

## 2023 PERFORMANCE HIGHLIGHTS

### ENVIRONMENT MANAGEMENT

**587,200 kilolitres**

of seawater was extracted in the year, which was used to generate almost 84,000 kilolitres of treated water

**491,400 kilolitres**

of groundwater was extracted for use in the Upstream area

**1528 shipments**

were received in 2023 with 85 of the shipments received inspected and 15 requiring re-fumigation

**3 non-conformances**

of Severity Level I recorded in 2023. No Severity Level II or III non-conformances were recorded

**39 incidents**

of Severity Level <0 were recorded in 2023. No Severity Level 0, 1, 2 or 3 incidents were recorded

**21 near misses**

recorded during 2023

*Environmental incidents: are classified by Severity Levels of <0, 0, 1, 2, or 3. Severity Level <0 has no significant impact, while Severity Level 2 or 3 require notification to the Lender Group's IESC, or relevant government authority.*

*Environmental non-conformances: are situations that do not meet ESMP requirements and are classified according to three Severity Levels. Severity Level I involves no damage or reasonable expectation of damage progressing through to Severity Level III, typically including observed significant damage or a reasonable expectation of significant damage.*

## CASE STUDY

## EMPNG SEEDS A CORAL FOREST

To commemorate Coral Triangle Day 2023, EMPNG planted a forest of approximately 350 staghorn coral (*Acropora cervicornis*) specimens near the offshore pipeline on 9 June.

Coral Triangle Day aims to raise awareness about the Coral Triangle that stretches from the north of the Philippines, across the Solomon Islands, along the southern coast of Papua New Guinea and to Timor-Leste. The triangle occupies just 1.5 percent of the world's total ocean area but represents 30 percent of the world's coral reefs<sup>1</sup>. Papua New Guinea's marine environment lies at the heart of the triangle, with the highest coral diversity in the world<sup>2</sup>.

The Coral Triangle is globally significant because it contains the planet's richest concentration of marine life and coral diversity, with more than 6000 fish species and 76 percent of the world's coral species<sup>3</sup>. Although staghorn coral is one of the fastest growing coral species, it is also quickly disappearing due to destructive fishing practices and anthropogenic wastes from coastal communities. Coral reefs are crucial because they support 25 percent<sup>4</sup> of marine life and sustain coastal communities who rely on reefs for food, income, medicine and coastline protection from storms and erosion.

The coral planting by EMPNG involved sourcing healthy thickets of staghorn coral from local coral specialist,

Lakwaharu Coral, and tying them to a wire mesh frame, which was transported to Haidana Island and launched into the sea. Haidana Island was chosen because most of the reefs in that area had degraded due to unsustainable fishing practices and over harvesting of coral by local communities. As the coral grows, it will attract marine life that will be beneficial for nearby villages including Porebada, Kouderika, Papa and Lea Lea.

EMPNG Biodiversity Advisor and organiser of the coral planting event, Evangelista Apelis, said the coral planting was successfully conducted due to support from EMPNG volunteers, Lakwaharu Coral, and EMPNG's environment and LNG Plant site teams.

***"Less than one percent of Papua New Guinea's marine areas are under formal environmental protection, so effectively planning and managing how ocean spaces are used is critical," she said.***

***"Coastal populations are growing rapidly, placing pressure on coastal and marine resources, and impacting the health of the coral reef ecosystem. Therefore, awareness and local interventions such as coral planting are important to help sustain the marine resources and replenish degrading reefs."***



**EMPNG volunteer Yvette Renagi tying a coral fragment to the mesh**



**EMPNG volunteers prepare coral fragments for planting**

<sup>1</sup> <https://www.weforum.org/agenda/2018/09/what-is-the-coral-triangle/>

<sup>2</sup> <https://www.undp.org/papua-new-guinea/news/sustaining-papua-new-guineas-blue-economy>

<sup>3</sup> [https://www.panda.org/discover/knowledge\\_hub/where\\_we\\_work/coraltriangle/](https://www.panda.org/discover/knowledge_hub/where_we_work/coraltriangle/)

<sup>4</sup> <https://www.unep.org/topics/ocean-seas-and-coasts/blue-ecosystems/coral-reefs>





PART C





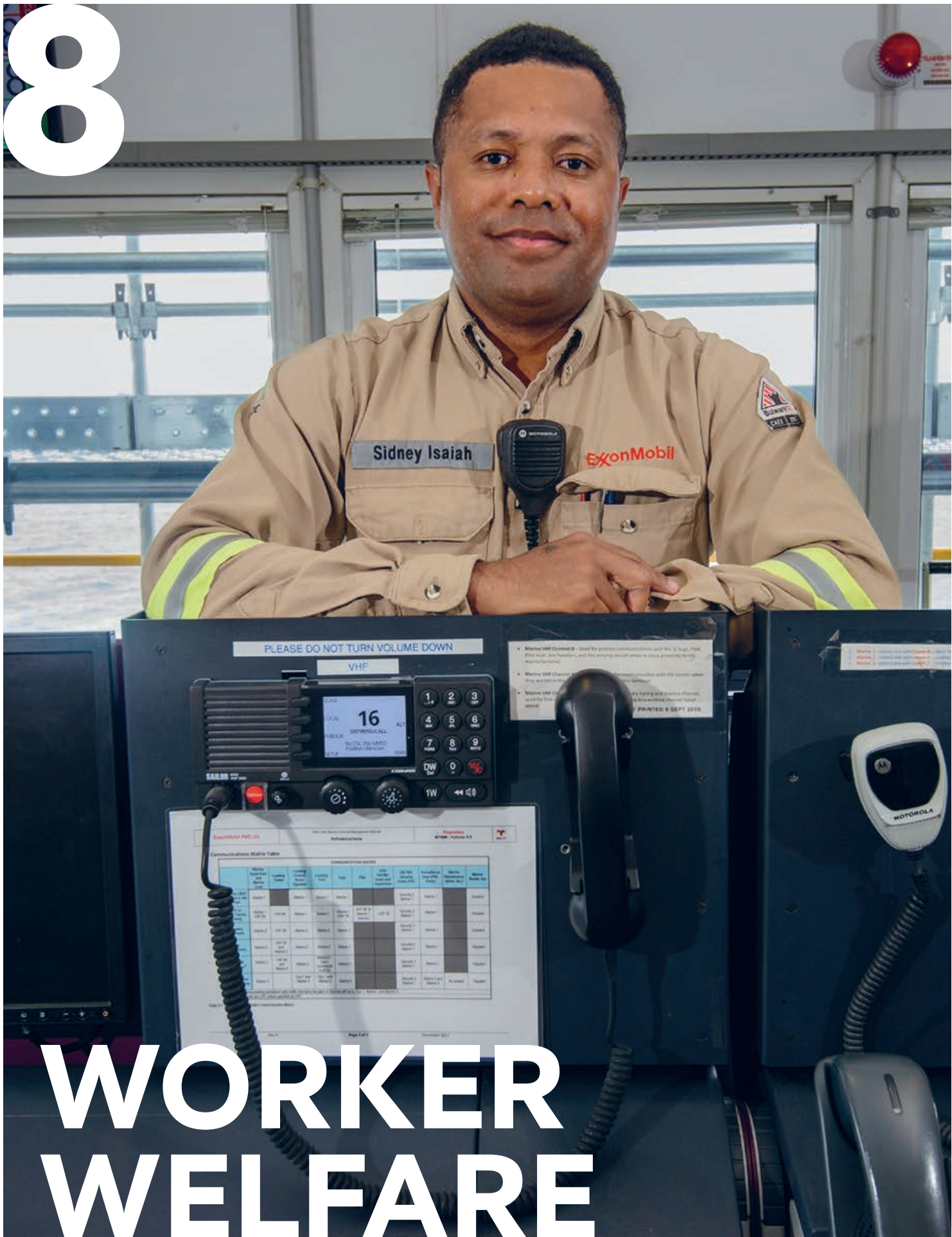
## SOCIAL

**To develop and implement initiatives that aim to return the value derived from LNG production back to local communities, EMPNG actively engages with stakeholders on an ongoing basis.**

EMPNG supports the welfare of workers and communities in and around its production facilities through implementing Social Management Plans that encompass health, safety, security, emergency preparedness, labour and working conditions, land access, resettlement and livelihood restoration.



8



# WORKER WELFARE

EMPNG actively promotes and maintains a safe and healthy workplace through procedures that protect the safety, health, and wellbeing of workers, and encourage fair and equitable labour practices.

## 8.1 Safety

Several safety milestones were achieved in 2023 including the safest year recorded since the start of production with a Total Recordable Injury Rate of 0.03. In addition, contractor Wood achieved 10 years of work without a Lost Time Incident at both the LNG Plant site and Upstream area.

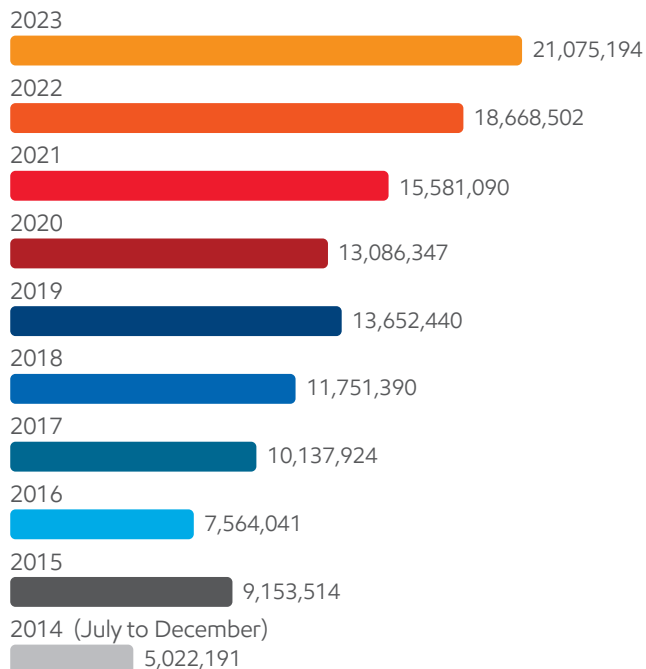


**Wood In-Country Safety, Health, Environment and Security Manager, Damien Carolan, and In-Country Manager, Dean Nielson, celebrate 10 years of work without a Lost Time Injury at the LNG Plant site and Upstream area**

As shown in Figure 8.1, more than 125 million hours have been worked since the start of production. Of these, 21 million hours were worked in 2023.

**Figure 8.1 – Production work hours**

NUMBER REPORTED BY PERIOD FOR THE TOTAL PNG LNG WORKFORCE



Worksites continue to reinforce key safety focus areas of: 'Do It Right, Every Time', 'Focus Despite Distractions', and 'I've Got Your Back'.

### Core safety programs and processes

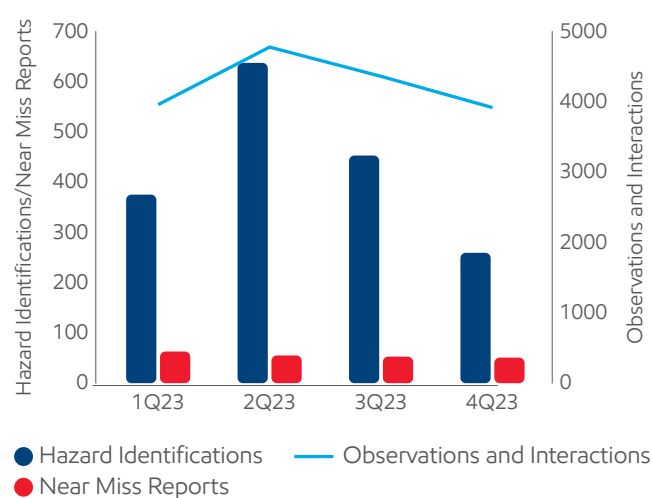
EMPNG's core safety programs and processes are defined by OIMS. Both leading and lagging indicators are used to determine the health of safety systems.

The effectiveness of EMPNG's safety programs is measured through leading indicators. Actual incidents, consequences and overall safety performance are measured through lagging indicators. Lagging indicators include Lost Time Incident Rate, Total Recordable Incident Rate and the number of Tier 1 and Tier 2 process safety events as defined by IPIECA, the global oil and gas industry association.

Performance across key leading safety indicators in 2023, as shown in Figure 8.2, improved with a yearly total of 18,892 'Nobody Gets Hurt' cards submitted, including 16,932 Observations and Interactions and 238 Near Miss Reports. The number of Hazard Identifications remained consistent, with 1722 identifications made in 2023 compared to 1768 in 2022.

**Figure 8.2 – Core safety processes**

NUMBER REPORTED BY QUARTER



Workplace training, safety toolbox talks, and shared worksite learnings remain pivotal in preventing high severity near misses, particularly for dropped and falling objects, and energy isolation.

Two Tier 2 process safety events were recorded at the LNG Plant site during 2023, with both regarding primary loss of containment. One of these involved a dehydration bed outlet cavity bleed leak and the other was a seal failure on a compressor supply line. Lessons learned and process improvements that resulted from these events are being implemented.

EMPNG's Total Recordable Incident Rate was 0.03 for 2023 compared to 0.09 in 2022, which is a decrease due to operationalising a Human Performance approach that aims to eliminate serious incidents, injuries and fatalities by reducing the risk of error prone situations.

During 2023, one Lost Time Incident occurred at the Angore drilling site when a worker sustained a fractured forearm after tripping over a prime mover. Despite this incident, the Lost Time Incident rate improved from 0.01 in 2022 to 0.009 in 2023.

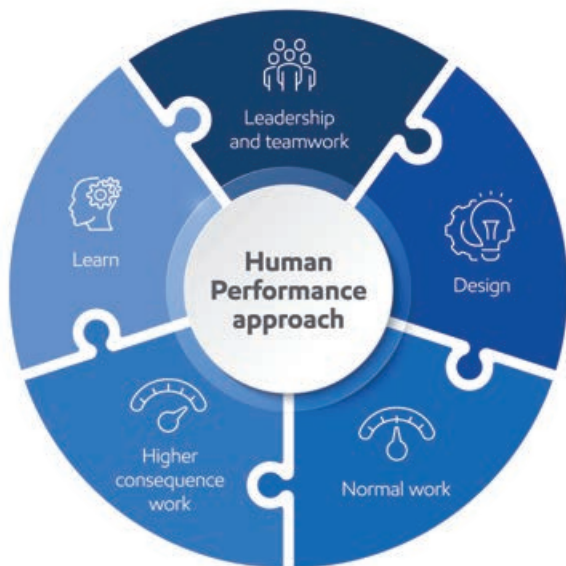
### Safety initiatives

As part of a process of continuous improvement, workers proactively seek to implement initiatives that help reduce safety risks.



During 2023, implementation of the Human Performance approach, as summarised in Figure 8.3, resulted in an EMPNG worker identifying an opportunity to use a specialty ladder designed for monoethylene glycol offloading to solve the problem of fall exposure for workers that must access the top of trucks, tankers, and trailers. This initiative proved successful and is being deployed at all worksites to help reduce the risk of falls.

**Figure 8.3 – ExxonMobil’s Human Performance approach**



The Human Performance approach also resulted in workers conducting two safety stand downs during critical maintenance activities to reduce the risk of human error. This first stand down was for tube bundle cleaning of the monoethylene glycol regeneration reboiler vessel in the Upstream area, and the second for vessel cleaning and molecular sieve bed replacement at the LNG Plant site.



**EMPNG’s Human Performance approach led to an innovative use of specialty ladders to reduce fall exposure for workers**

The Short Service Worker program is provided to every new field-based worker. As part of safe onboarding, new workers wear a green construction hat and then graduate to a white construction hat once they have achieved six months of field experience. The program was revised during 2023 to ensure it provided more clarity for workers on expectations of the program including responsibility of the mentor, and more

emphasis on the graduation to a mature site worker. In 2023, 74 LNG Plant site workers and 135 Upstream area workers completed the program.

Fifty-one Upstream area workers and 21 LNG Plant site workers were recognised as Safety and Fair Play Champions in 2023. This program encourages and rewards safe behaviour to help build a safety culture across all worksites. Workers selected as Safety and Fair Play Champions exhibit safe workplace behaviours and influence others with ‘Nobody Gets Hurt’ objectives.



**EMPNG Maintenance Superintendent, Gerald Dubose, and Wood Technician, Daisy Nagiria, were recognised as 2023 Safety and Fair Play Champions**

## 8.2 Health

To maintain the health and wellbeing of workers, EMPNG provides high quality medical, public health, and industrial hygiene programs across all worksites.

Health activities in 2023 focused on implementing the revised global industrial hygiene exposure assessment strategy and maintaining EMPNG’s Culture of Health program.

### Medical

Camp clinics completed 14,560 patient consultations during the year. The LNG Plant undertook 36 percent of the patient consultations while 64 percent of consultations were conducted at Upstream area clinics.

Clinicians also conducted 2269 tuberculosis screening tests for EMPNG’s tuberculosis awareness and prevention program. The screening identified four active community-acquired tuberculosis cases that were referred for further treatment. No workplace transmission of tuberculosis was recorded during 2023.

All EMPNG workers are encouraged to participate in biometric screening and healthy physical activities offered through the Culture of Health program. More than 500 workers received biometric testing during the year to identify potential underlying health issues. This testing included blood pressure, weight, vision, and blood sugar screening.

The LNG Plant site and ExxonMobil Haus hosted Culture of Health program blood drives during the year, which collected more than 310 bags of blood donations from volunteers for the Port Moresby General Hospital.



**EMPNG volunteers after participating in the blood donation campaign ExxonMobil Haus**

HGCP and LNG Plant site workers also participated in regular perimeter walks of their worksites, and ExxonMobil Haus workers participated in the Lead Country Manager Cup touch football competition as part of the program.

Emergency response drills are regularly conducted at EMPNG site clinics so that medical teams have the knowledge they need to appropriately respond to medical emergencies. In 2023, 42 medical emergency response drills were completed at EMPNG worksites. Each of these drills involved practicing the transfer and stabilisation of patients before medical evacuation.

There were 10 medical evacuations from worksites in 2023. Personal medical conditions accounted for all evacuations, and none related to workplace activities.

#### *Public health*

EMPNG continues to record low numbers of community acquired semi-immune malaria cases, with only 48 cases diagnosed at worksite clinics during 2023.

All these cases were successfully treated at the clinics.

Toolbox talks remain key to supporting EMPNG's health initiatives, with more than 872 health-related toolbox talks delivered across worksites during the year.

#### *Industrial hygiene*

The industrial hygiene program aims to protect EMPNG's workforce through the assessment, control, and communication of potential health hazards in the workplace.

EMPNG's revised global Industrial Hygiene exposure assessment strategy was implemented in 2023. The strategy involves the use of both local and global data in exposure ratings and assessments. This provides a more fit-for-risk approach to how exposure assessments are conducted, ensuring effective controls are in place and validated as required.

In 2023, more than 350 workplace health inspections were conducted to confirm that health requirements were met for food, water, public health, chemical and respiratory safety, which included respirator fit testing. An additional 37 personal exposure monitoring samples were collected and analysed to identify potential worker exposure to factors such as noise, benzene, and gasoline.

A re-assessment survey for Naturally Occurring Radioactive Material was completed for the HGCP and Wellpads during the year. The survey identified areas that potentially contained Naturally Occurring Radioactive Material, which resulted in the implementation of controls such as raising worker awareness, labelling the identified areas, and engaging safe work practices that included ensuring workers had adequate protection. Radiation Safety Officer training is planned for some workers in 2024.



**EMPNG Medical and Occupational Health Manager, Dr Mark Jacklin, and Occupational Health Coordinator, Louisa Sernay, with Cassie the cassowary ready to kick off the Lead Country Manager Cup touch footy for ExxonMobil Haus workers as part of the Culture of Health program**





**EMPNG Human Resources Analyst, Dianne Iavia, examines an anopheles mosquito under the microscope as part of EMPNG's awareness-raising activities for World Malaria Day**

#### *Other strategic initiatives*

Specific lunch-and-learn sessions and toolbox talks were held throughout the year to commemorate internationally recognised days including World Tuberculosis Day, World Malaria Day, World Diabetes Day, World Cancer Day, and World AIDS Day.



**Workers observe World Tuberculosis Day at the HGCP**

As part of World Malaria Day, EMPNG workers were provided with mosquito bed nets. Workers also received free diabetic screening for World Diabetes Day, and free HIV/AIDS testing and counselling for World AIDS Day.

## 8.3 Camps

EMPNG's camps supported active construction, drilling, and operations programs in 2023. The HGCP and Moro camps also supported Santos personnel as part of facilities sharing agreements between the PNG LNG and oilfields joint ventures.



**ExxonMobil Haus workers support World Malaria Day**

Numerous upgrades were completed at the HGCP Camp, including new laundry dryers, refurbishment of common ablution blocks, flooring repairs, and the installation of a new heating, ventilation and air conditioning system for the camp kitchen. LNG Plant Camp upgrades included new kitchen equipment, as well as the start of work on projects to repair the fire alarm and detection system and replace parts of the perimeter fence. Commissioning of a previously out-of-service wastewater treatment plant was completed to support the LNG Plant Camp during the year. Camp works were undertaken by Lancos and Papua New Guinean businesses, such as HESL, Turra Holdings Limited, PNG CR Services Company Limited, TWM, Anitua Limited, and Atlas Steel PNG Limited.

New technology was also deployed across PNG LNG camps in 2023, including a OneLogistics travel system and mobile badge readers for improved monitoring of the movement of camp and vehicle convoy personnel, and a camp maintenance software system to improve the organisation of planned maintenance and the response time for corrective maintenance. Digital information screens and kiosks were deployed to provide an additional means for camp residents to access the internet. At the HGCP, electric vehicle carts and charging stations were introduced to provide another transport option around the site.

The HGCP Family Market continued to be held fortnightly throughout 2023 with local suppliers invited into the HGCP Camp so that workers could buy local produce.



**Members of the Kapote-Kuranda Women's Group during their market held in March at the HGCP Community Hall**





Workers at ExxonMobil Haus supporting Pinktober for breast cancer awareness

## 8.4 Labour and working conditions

EMPNG holds regular employee and supervisor development forums to reinforce company policies and procedures, and support career development. These forums are complemented by resource groups, such as the Women in Energy Network and Wanwoks Initiative, that deliver programs and mentoring to help the personal and professional development of Papua New Guinean employees.

The Women in Energy Network conducted education sessions and distributed some 250 cervical cancer screening kits to EMPNG worksites in February to give female employees easy access to screening tests. Cervical cancer ranks as the second most frequent cancer among women between 15 and 44 years of age in Papua New Guinea.

To commemorate the 2023 International Women's Day theme of 'Embrace Equity', which aimed to get the world talking about why equal opportunities are no longer enough, the Women in Energy Network hosted a panel discussion to examine this topic in further detail.

The panel considered the nuances between equality and equity, with equality giving people the same resources or opportunities, while equity recognises that each person has different circumstances and allocates the exact resources and opportunities needed to reach an equal outcome. Employees were welcome to join the panel discussion in person or online. The day also included a photo competition where employees were encouraged to submit their best photos that depicted the 2023 International Women's Day theme. In addition, EMPNG representatives attended the annual Business and Professional Women's Association's International Women's Day breakfast.



The panel discussion to commemorate the 2023 International Women's Day between (from left) Mobil Oil New Guinea Terminal Manager, Jeremiah Liliura; EMPNG Senior Vice President Papua New Guinea Commercial and Development, Johanna Boothey; and Mobil Oil New Guinea Business Support Manager, Sylvie Ikufu

In October, the Women in Energy Network held Pinktober activities that involved more than 100 EMPNG workers who dressed in pink and participated in information sessions to raise breast cancer awareness.

In August and September, the Wanwoks Initiative held a week-long financial literacy roadshow at the LNG Plant, HGCP and ExxonMobil Haus. The roadshow provided workers at these sites with access to Papua New Guinean financial institutions, and expert advice and support on finance matters.

The Eda Wanwok Toastmasters Club met throughout 2023. EMPNG Toastmaster, Gregory Soweni, achieved first place at the Pacifica Division Conference International Speech category Toastmasters event during the year.





**Gregory Soweni (centre) and fellow Eda Wanwok Toastmasters Club members following his first-place presentation during the Pacifica Division Conference, International Speech category**

Toastmasters helps EMPNG workers improve their confidence by developing communication, leadership, and public speaking skills.

As well as employee programs, EMPNG holds regular engagement sessions with senior management. These sessions give workers a forum to ask questions and raise any concerns directly with EMPNG's executive team.

All new EMPNG employees and staff contractors receive Standards of Business Conduct training as part of their induction process. Periodic refresher training is also provided to the existing workforce. This training covers topics such as ethics, conflicts of interest, anti-corruption, health, safety, environment, alcohol and drug use, equal employment opportunity, and workplace harassment. During the training, employees are advised of EMPNG's open door communication procedures that encourage workers to ask questions, voice concerns, escalate issues to senior management as needed, and make appropriate suggestions about the company's business practices.

In addition, a specific lunch-and-learn on anti-corruption was held at ExxonMobil Haus in February.



**Chairman of Transparency International Papua New Guinea Incorporated, Peter Aitsi, presenting at the anti-corruption lunch-and-learn held at ExxonMobil Haus**

The session featured a presentation from Chairman of Transparency International Papua New Guinea Incorporated, Peter Aitsi followed by a question and answer session relating to the roles of the *Whistleblower Act 2020* and the Independent Commission Against Corruption.

### Performance recognition

EMPNG recognised 10 employees at the sixth annual Lead Country Manager Awards during 2023.

The awards acknowledge outstanding employee behaviours that are consistent with EMPNG's core values of *Em pasin bilong ExxonMobil long PNG*, or 'The way we work at ExxonMobil in PNG', across the six categories of: safety, security, respect for the environment, integrity, teamwork and excellence.

#### HIGHLIGHT

### ACKNOWLEDGING OUTSTANDING EMPLOYEES

In acknowledgement of their outstanding contributions to EMPNG, the following workers received Lead Country Manager awards in 2023:

#### Environment Award

- Banak Gamui

#### Safety Award

- Elijah Lavai

#### Teamwork Award

- Anita Mosby
- Lewis Iso
- Isaac Maima

#### Integrity Award

- Melinda Lavaki

#### Security Award

- Israel Kilawe

#### Excellence Award

- Gloria Trintemnok
- Solomon Sova
- Marilyn Wingi

Lead Country Manager Award winners were presented with certificates of recognition and prizes including vouchers and a customised Kundu coffee cup.



**EMPNG Chairperson and Managing Director, Tera Shandro (centre), with four of the Lead Country Manager award recipients (from left): Banak Gamui; Marilyn Wingi; Anita Mosby; and Elijah Lavai**



**EMPNG Site Security Contact and Unmanned Aerial Systems pilot, Peter Rakatani, conducts pre-flight checks on the company's newest Vertical Take Off and Landing aircraft at the LNG Plant site**

## 8.5 Security

In 2023, EMPNG helped develop the skills of security personnel through a range of accredited training courses.

For example, seven Papua New Guinean members of the Security team received the internationally accredited Certificate II in Transport Security Protection, while another four Papua New Guinean citizens obtained qualifications as off-site driving instructors through an Australian registered driver training agency.

Two Papua New Guinean personnel expanded their unmanned aerial systems qualifications by completing a course in Australia to upgrade their Civil Aviation Safety Authority-certified Remote Pilot Licence with a qualification for sub-25-kilogram Vertical Take Off and Landing (VTOL).

With this qualification they are able to pilot EMPNG's newest VTOL aircraft, which will aid in expanding EMPNG's unmanned aerial system capabilities for monitoring the ROW, flare stacks, and the progress of construction works.

Under the Memorandum of Understanding between the Royal Papua New Guinea Constabulary and EMPNG, 445 Constabulary officers and Papua New Guinea Defence Force personnel received Voluntary Principles of Security and Human Rights training prior to their deployment to assist EMPNG operations.

A total 948 contracted security personnel received human rights training as part of their induction program.

Funding is provided by EMPNG to the Australian Department of Foreign Affairs administered Justice Services for Stability and Development Program for a Community Justice Advisor to work with the Hela Provincial Government. This helps build community justice capabilities and strengthen local level law and justice programs. The Justice Services for Stability

and Development Program has received support under a Memorandum of Understanding between the Australian Department of Foreign Affairs and EMPNG since 2014.

## 8.6 Emergency preparedness

To mitigate the impact of any emergency, EMPNG has plans and processes in place, as well as relevant training and emergency response drills, that give responders the knowledge they need to appropriately respond should an emergency occur.



**Komo Airfield fire team with the site's specialised aircraft fire truck**

Emergency responders follow the principle of 'Protecting our People, the Environment, our Assets, and our Reputation'. This principle drives decision-making and provides a focus on priorities during an emergency.

In 2023, EMPNG's Emergency Response team conducted 81 emergency response drills based on major event scenarios, including two oil spill response drills.





**Conducting a medical response drill simulating evacuation of an injured person at the HGCP**

All drills were carefully planned and organised to test EMPNG's emergency response capability and covered potential worst case scenarios. The oil spill response drills were conducted over multiple days, requiring the deployment of materials and personnel across multiple departments to remote and challenging locations.

Major hazard scenario emergency response drills conducted at the LNG Plant site included: loss of containment at the inlet area; boiling liquid expanding vapour explosion at the propane accumulator and propane sphere; propane refrigerant loss of containment; and mixed refrigerant loss of containment.

The drills involved full site mustering, intruder lock down drills, medical evacuation, confined space rescue, a motor vehicle accident and fire drills in the worker camp. They also included response to camp fires, grass fires and medical emergencies both inside and outside the perimeter fenceline.

At the LNG Plant Marine Terminal, emergency response drills tested the coordinated response to emergencies involving high-risk activities such as working at heights, a potential hydrocarbon release, man overboard and working over water. The drills included: a severe weather detachment from the loading arms while a cargo vessel was berthed; a marine terminal fire drill with mustering; a security lockdown drill; and an oil spill response with boom deployment and marine vessel support.



**Undertaking a confined space entry rescue drill at the LNG Plant site**

Response to these drills involved processes, systems, and communications across the LNG Plant Marine, Safety, Security and Management teams as well as interfaces with government agencies, logistics and contractor partners.

Emergency response drill scenarios conducted at the HGCP during 2023 included: a spinline and wellpad oil spill response; export pipeline oil spill response with full equipment deployment; a working at heights rescue; natural disaster drill;

medical and rescue drills; security lock downs; fire drills; and aviation drills involving regulatory oversight.

At ExxonMobil Haus emergency response drills covered scenarios such as a fire and active shooter and included testing of emergency communication email and text notification systems.

In addition to emergency response drills, six advanced event training scenarios were conducted by EMPNG's incident management team during the year.



**The incident management team during a security drill at the HGCP**

HGCP and LNG Plant site workers also received basic first aid training to provide competency at field level for both rescue personnel and other workers to become trained first responders in the event of an emergency.

In 2023, EMPNG's firefighting team attended a five-day live fire training course in New Zealand that included scenarios such as: a live aircraft fire; rescue from a simulated burning building; and navigating a smoke-filled chamber to rescue victims. This training helped them improve their skills in rescue, wearing and use of breathing apparatus and bunker gear, specialised rescue, and advanced firefighting techniques.

As part of EMPNG's human performance fluency training, an after-action review was conducted at the completion of every emergency response drill. These reviews addressed what was expected during the drill, what actually happened, what went well and where improvements could be made. The after-action review included all drill participants from emergency response, maintenance, security, operations, medical and management teams. Follow-up actions were tracked to closure through a work order system with due dates and responsibilities assigned.

In accordance with ExxonMobil Emergency Preparedness and Response guidelines, all 22 EMPNG Tactical Response Plans were reviewed and updated during the year to match the corporate standard. This global standard helps provide clarity around responses to critical first hours activities and provides consistency across business units.

## 2023 PERFORMANCE HIGHLIGHTS

### WORKER WELFARE

# 0.03 TRIR

recorded for 2023. TRIR stands for 'Total Recordable Incident Rate'

# 0.009 LTIR

recorded for 2023. LTIR stands for 'Lost Time Incident Rate'

# 21 million

work hours in 2023

# 14,560 visits

to camp clinics in 2023 with 36% of patient consultations held at the LNG Plant and 64% at Upstream area clinics

# 18,892 cards

submitted in 2023 including 16,932 Observations and Interactions, 1722 Hazard Identifications and 238 Near Miss Reports

# 81 drills

based on major event scenarios to test EMPNG's emergency response capability

*TRIR and LTIR are the frequency rate of incidents within a given period, relative to the number of hours worked in that period by a 200,000 hours constant, representing 100 workers at 8 hours per day for 250 days per year. It is a proxy for safety performance with lower rates indicating better safety performance.*



# 9



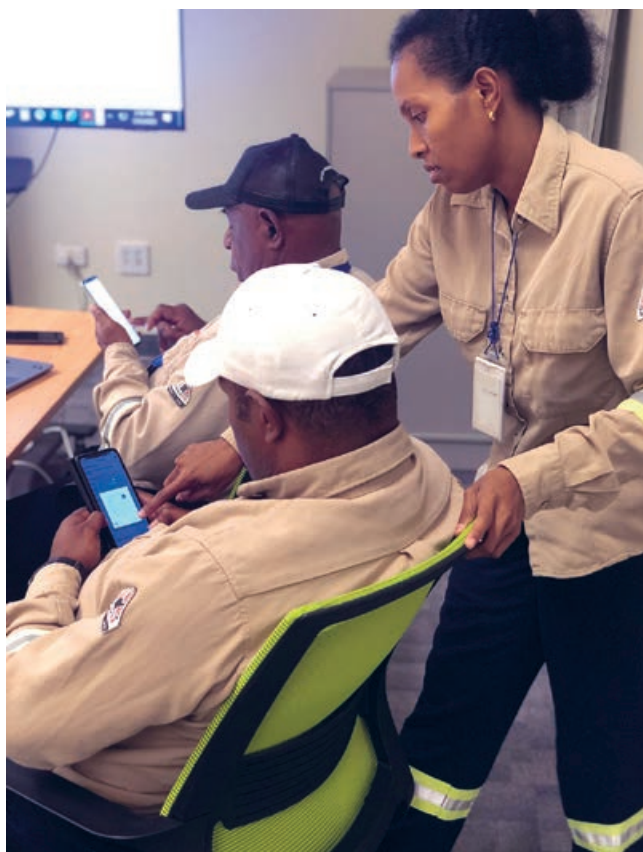
# STAKEHOLDER ENGAGEMENT

Stakeholders are involved in an ongoing process of inclusive, two-way communication with EMPNG that keeps them informed about production activities, while enabling the sharing and addressing of community issues in a timely manner.

## 9.1 Community engagement

Through its National Content Strategy, EMPNG aims to deliver shared, long-term value for its many stakeholders. This involves active engagement with community stakeholders, all levels of government and civil society organisations on an ongoing basis.

In July, EMPNG implemented a new PNG IsoMetrix mobile app and provided training to Community Affairs team members to help them more effectively capture and report on community engagements in real time. The app allows both immediate reporting of community engagements, such as issues raised, and includes the ability to upload photos.

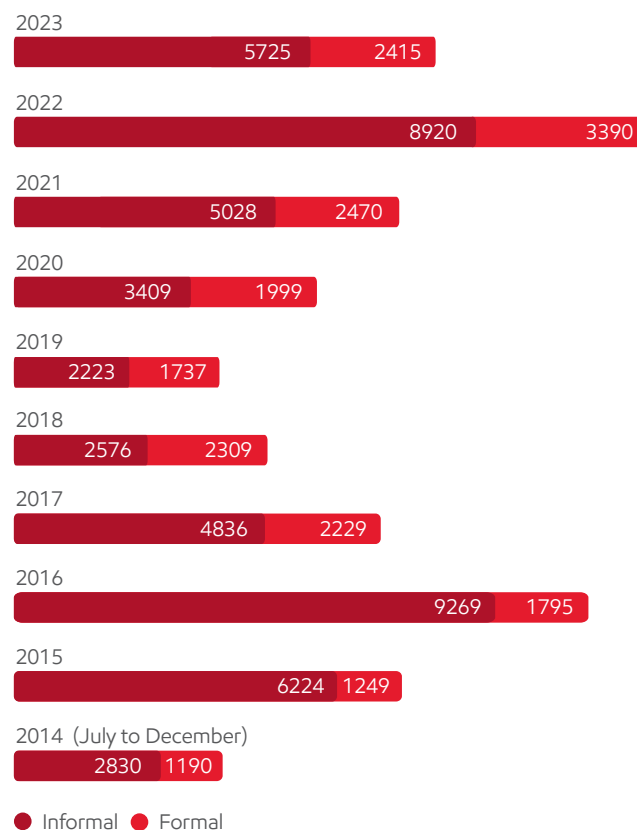


**EMPNG Land and Community Affairs Data Analyst, Grace Nou (right), introduces the new PNG IsoMetrix app to Community Affairs Officers, Roney Joseph and Anton Kentabul, at the LNG Plant site**

More than 8140 engagements were conducted with communities throughout the PNG LNG area of operations in 2023. As shown in Figure 9.1, these included some 2415 formal engagements and 5725 informal engagements that involved almost 32,300 stakeholders. Fewer community engagements were recorded in 2023 than 2022 due to the completion of Angore Gathering System pipeline installation. Engagements during 2023 included community-based programs, and HGCP and LNG Plant site advocacy tours. In the Upstream area, stakeholder engagements primarily focused on gathering information from the community on topics such as community support, and grievance and issues management regarding employment and compensation.

**Figure 9.1 – Engagements**

NUMBER OF ENGAGEMENTS SINCE THE START OF PRODUCTION



Community engagements at the LNG Plant focused on community support activities and communicating with community members about topics such as marine exclusion zones, and community development needs.

Meanwhile, engagements in Port Moresby were primarily with landowner groups and provincial government representatives.

Figure 9.2 provides a summary of stakeholder engagements that were conducted during 2023.

## 9.2 Community issues identification

As outlined in the Production ESMP, a community issue is a PNG LNG-related question, comment, concern, suggestion, or observation that is presented to EMPNG. Communications about issues that are outside the control of EMPNG, such as government-related inquiries, are also recorded.

Issues are received, monitored, and closed on a daily basis where possible during regular community liaison and stakeholder engagement. Some more complex issues may take more time to resolve, so can remain open for a longer period.

As shown in Figure 9.3, there were 1835 issues received and categorised during 2023. Compared to the 2298 issues raised in 2022, this decrease is associated with the completion of the Angore Gathering System pipeline installation.

Most issues raised in 2023 were in relation to the Angore Gathering System pipeline installation and associated Wellpad C wellworks.



Figure 9.2 – Stakeholder engagement summary

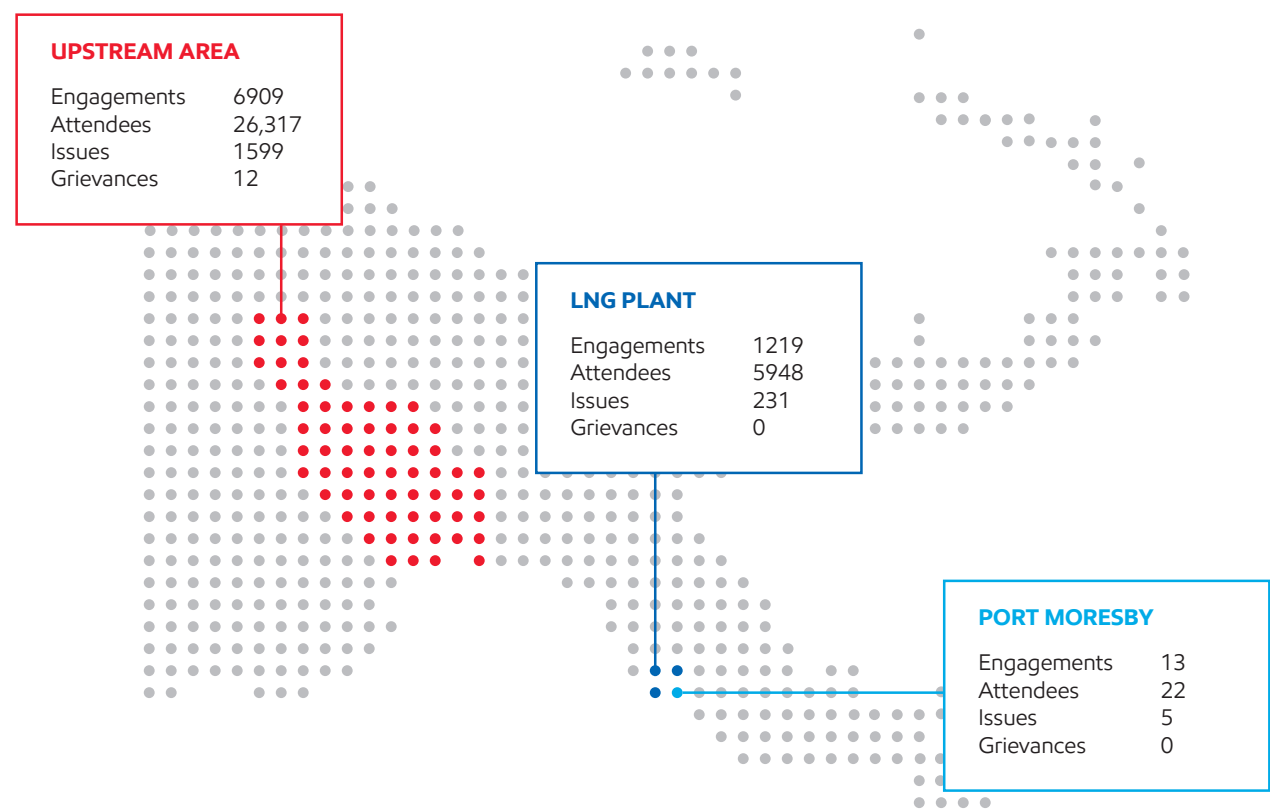
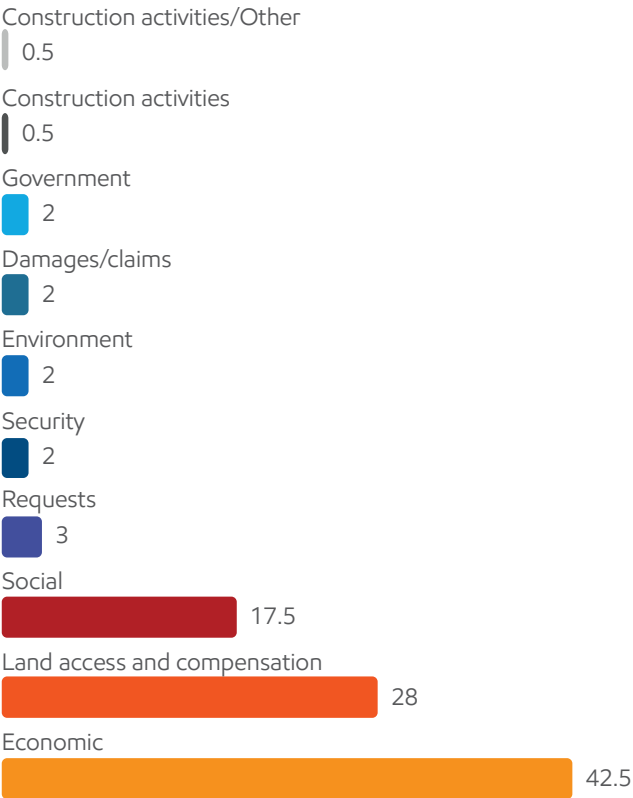


Figure 9.3 – Issues

PERCENTAGE RECEIVED BY CATEGORY



Economic concerns accounted for the majority of issues and regarded employment with the Angore Gathering System project, as well as community development support activities and inquiries about local business development.

Land access and compensation was the second highest issue category with inquiries focused on land access and compensation agreements.

Social issues also rated highly and regarded community engagements, employment and training, and community safety.

A total 1797 issues that were raised during 2023 were closed by the end of the year. Ten issues that carried over from 2022 were also closed in 2023. EMPNG’s Community Affairs team is working to close the remaining 38 issues from 2023 in 2024.

### 9.3 Community grievance management

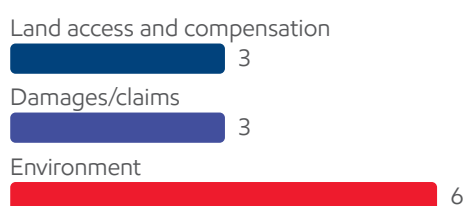
The Production ESMP defines a grievance as a PNG LNG-related complaint lodged by an individual, group or community that alleges damage, impact, or dissatisfaction specifically resulting from EMPNG’s actions or inaction.

To quickly and fairly receive, assess, respond to, and resolve grievances, a Grievance Management Process is used.

In 2023, EMPNG registered and categorised 12 grievances, which is a 40 percent decrease compared to 20 recorded in 2022. This aligns with a shift in activities in Angore from completion of the pipeline installation to continuation of wellworks at Wellpad C. Figure 9.4 shows the number of grievances recorded in 2023 by category.

## Figure 9.4 – Grievances

### NUMBER OF GRIEVANCES BY CATEGORY



Six grievances received in 2023 related to environmental matters. These mostly concerned water quality at water sources in Angore and along the pipeline ROW. Three grievances regarded compensation for quarry extraction and land access, and the remaining three were for minor damage to gardens due to vehicle movement and waterlogging caused by a build-up of cast materials.

By the end of 2023, 10 of the 12 grievances registered during the year were successfully closed, including one that was reclassified as an issue. Two remained open and were under investigation at the end of 2023. All eight open grievances carried over from 2022 were also closed.

## 9.4 Resettlement

Wherever possible, EMPNG aims to avoid resettlement from construction activities. Where resettlement is unavoidable, the aim is to improve, or at least restore, the standards of living and livelihoods of displaced persons. In 2023, three households that were relocated from river crossings along the main pipeline ROW received compensation. These households were also assessed for eligibility for livelihood restoration support. The eligibility assessments, which covered household gardens, found that no livelihood restoration support was needed. A standard of living evaluation of the three households was also completed. Two of these households were found to have an improved standard of living. The third household had a decline in their standard of living due to a clan dispute about sharing their compensation payment with clan members. This clan dispute is outside the jurisdiction of EMPNG.

Pre-construction surveys were conducted for extra workspaces required at the Kilometre Point 65.9 river crossing along the main pipeline ROW. The extra space was required for storage of materials that were required for conducting work along the pipeline ROW, along with improving safe paths for machinery access. Three households were identified during these surveys as being eligible for compensation. By the end of 2023, two households had received compensation, with one remaining to be compensated in 2024. One of these households was also assessed for eligibility for livelihood restoration support with the outcome expected in 2024.

## 9.5 Compensation

Four new Clan Agency Agreements were signed with landowning clans in 2023 for access to land along the new Angore pipeline ROW. This access was needed to link the Angore road to the existing Angore Wellpads A and B for plug and abandonment works and the tie-in main pipeline ROW.

A total 372 of the 376 annual deprivation payments were completed within the year. Due to clan group account payment processing issues, four payments remained outstanding as of 31 December.

Seventeen clans have been involved in internal compensation disputes since the start of PNG LNG construction. While clans along the Gobe Spurline are closer to achieving a resolution, the Homa Ridge Access Road remains in dispute.

## 9.6 Government engagement

Ongoing active engagement with all levels of government enables EMPNG to keep government representatives informed about production and company activities and helps to support community-based initiatives.

### 9.6.1 Infrastructure and government support

EMPNG provides infrastructure support to the Papua New Guinean Government through the PNG LNG infrastructure tax credit program that includes maintenance and upgrade projects along key roadways. Projects such as these provide much needed infrastructure while creating employment opportunities for people who live in nearby communities. They also give local suppliers the chance to capitalise on business opportunities that are generated by the projects.

During 2023, multiple infrastructure tax credit projects were undertaken including upgrade and maintenance work on the Baruni–Lea Lea road in the Central Province, the construction of a pilot track from Piribu to Angore, and maintenance work along the Ambua–Piribu, Piribu–Halimbu and Halimbu–Komo Station roadways in Hela Province.



**Workers from Lanco HGDC re-painting faded road markings on the Anguale to Komo Road**

In addition, emergency repairs were completed in Kireni and Assassa along the Highlands Highway. A study was also undertaken to assess water access options for coastal villages in parts of the Central Province.

In December, a new six-year ITC program was approved by the Papua New Guinea Department of National Planning and Monitoring, with an ITC funding agreement signed between EMPNG (on behalf of PNG LNG) and the Papua New Guinea Department of Works and Highways. This new funding agreement will support the government's delivery of commitments made under the Umbrella Benefits Sharing Agreement and Licence Based Benefits Sharing Agreements.





**Officers from the Gas Project Coordination Office with EMPNG representatives following a tour of the LNG Plant site in June**

In particular, it will enable further investment in law and justice, health, education, power, water and transportation.

### 9.6.2 Advocacy

Some 560 representatives from national government agencies, provincial-level governments, and co-venture partners participated in 35 EMPNG advocacy workshops held in 2023.

Advocacy workshops provide participants with information about EMPNG's operations, community development work, biodiversity programs, national content initiatives, and financial benefits paid to the Papua New Guinean Government and landowners.



**Participants from the Office of Legislative Counsel with EMPNG representatives during an advocacy workshop in August**

In addition to advocacy workshops, 126 people from local schools and communities participated in LNG Plant site tours during the year. Six tours of the LNG Plant site were conducted for students from Boera, Porebada and Lea Lea primary schools, and teachers from Papa Junior High School and Redscar High School.

### 9.6.3 Benefits assurance delivery

Landowner royalty payments and provincial and local-level government Development Levy payments are made to the Papua New Guinean Government to comply with requirements of the *Oil and Gas Act 1998*. The funds are managed through trust accounts with the Bank of Papua New Guinea. The Department of Finance is custodian of

these accounts. The State-owned MRDC and Department of Petroleum and Energy distribute these funds to beneficiaries on behalf of the Government.

As required by the *Oil and Gas Act 1998*, EMPNG completed its ninth Development Levy payment to the Papua New Guinean Government during the year. The levy is held in trust with the Department of Petroleum and Energy for distribution to impacted provincial and local-level governments to address their developmental needs.

### 9.6.4 Revenue management

In March, the Papua New Guinea Extractive Industries Transparency Initiative (EITI) Secretariat published its 2020 and 2021 EITI reports, which were produced by independent administrator Ernst & Young PNG Services Limited. These were the final reports provided by Ernst & Young PNG Services Limited, with the role of independent administrator transferred to Papua New Guinea accounting firm Kuna Taberia Kiruwi Accountants & Advisors, which is progressing the 2022 EITI report in partnership with UK-based consulting organisations Michael Barron Consulting Limited and Engaged Consulting Limited.

In October, the Japanese International Cooperation Agency and Papua New Guinea EITI formalised a technical cooperation program to improve resource-related revenue management through enhanced EITI reporting. The program, which was developed during the year, will commence in March 2024 and run for three years. It will involve Japanese International Cooperation Agency experts supporting Papua New Guinea's Department of Petroleum and Energy with building its EITI reporting capability, while also building capacity at the Auditor General's Office to improve Papua New Guinea's financial data quality, reliability, and the availability of resource-related data for public use.

Papua New Guinea has finalised a proposed EITI Commission Bill to formalise the establishment of the Papua New Guinea EITI Commission. It is expected that in 2024 the Commission Bill will go to the State Solicitor for a certificate of compliance and will then be submitted to the National Executive Council for approval.

Once approved, the Commission Bill will be presented to the Government's First Legislative Council for final legal drafting and then to National Parliament to be passed as law.

Throughout 2023, the Papua New Guinea EITI Secretariat successfully convened all quarterly multi-stakeholder group meetings and maintained a strong focus on sub-national reporting and beneficial ownership disclosure.

EITI is a voluntary global standard that encourages open and accountable management of revenues generated from the extractive sector. It aims to strengthen government and company systems and processes, inform EITI is a voluntary global standard that encourages open and accountable management of revenues generated from the extractive sector. It aims to strengthen government and company systems and processes, inform public debate, and enhance trust among stakeholders. The EITI has made significant contributions to improving extractive industry governance in 53 countries worldwide including Papua New Guinea, which has been a member nation since 2013. EMPNG is among 21 members of the EITI multi-stakeholder group in Papua New Guinea that also includes representatives from Government, civil society and the oil and gas industry. Exxon Mobil Corporation has served continuously on the EITI International Board as either a full or an alternate member since its inception in 2002.

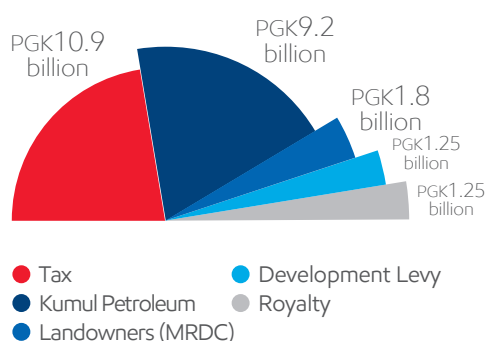
#### PNG LNG revenue streams

PNG LNG operations generate five primary revenue streams. These include equity distributions paid to Kumul Petroleum Holdings Limited and MRDC, which is based on the amount of equity in PNG LNG held by each (16.8 percent and 2.8 percent respectively). Different types of tax including company tax are paid to the Internal Revenue Commission. Development Levy and Royalties are paid to the Department of Petroleum and Energy in accordance with the *Oil and Gas Act 1998* for the benefit of the respective project area provincial and local-level governments and landowner beneficiaries.

Since the start of PNG LNG production, a total PGK24.4 billion (US\$7.1 billion<sup>1</sup>) has been distributed from PNG LNG revenues to landowners and the Papua New Guinean Government, as shown in Figure 9.5.

**Figure 9.5 – PNG LNG distributions<sup>2</sup>**

PRODUCTION-TO-DATE REVENUE DISTRIBUTED BY RECIPIENT



<sup>1</sup>The exchange rate used for 2021, 2022 and 2023 is PGK3.5 per USD1, while all years prior to 2021 use the exchange rate of PGK3.4 per USD1.

<sup>2</sup>Tax provided is an estimate.

## 9.7 Media

During 2023, media activities focused on engagements at numerous major industry conferences both within Papua New Guinea and across the Asia Pacific.

In May, EMPNG participated in the annual Australia PNG Business Forum and Trade Expo that was held at the Hilton Hotel, Port Moresby. The Forum's theme was 'Wanwoks Trade Wave, Advancing Smart Investments Between PNG and Australia'. EMPNG Senior Vice President – Production, Scott Sandlin, provided an overview of operations that included sharing details about EMPNG's strong focus on national content and the company's long-term investment commitment to Papua New Guinea.

In July, the Papua New Guinea Chamber of Resources and Energy Incorporated held its inaugural Media Wind Down event in Port Moresby, which was sponsored by EMPNG. The event brought together public relations professionals from the mining and petroleum industry along with journalists under the theme, 'To Connect, Communicate and Collaborate'.

During October, EMPNG Chairperson and Managing Director, Tera Shandro, joined panellists at the inaugural Papua New Guinea-Asia Investment Conference in Hong Kong to discuss how Papua New Guinea is powering Asian growth through the supply of energy and other exports. The conference was organised by the Papua New Guinea Chamber of Resources and Energy Incorporated with support from the Papua New Guinean Government. It aimed to provide Papua New Guinea with the opportunity to harness potential investment prospects from China and the greater Asia region.



**From left: Papua New Guinean Vice Minister for Petroleum and Energy, Thomas Opa; TotalEnergies PNG Senior Vice President, Thomas Maurisse; EMPNG Chairperson and Managing Director, Tera Shandro; and Kumul Petroleum Holdings Limited Managing Director, Wapu Sonk, at the Papua New Guinea-Asia Investment Conference**

EMPNG also participated in the 17<sup>th</sup> Papua New Guinea Resources and Energy Investment Conference and Exhibition held in Sydney, Australia, where the company reinforced the growing importance of LNG towards the security of supply and the energy transition.





**EMPNG Chairperson and Managing Director, Tera Shandro, presenting at the 17<sup>th</sup> Papua New Guinea Resources and Energy Investment Conference and Exhibition held in Sydney, Australia**

Throughout 2023, EMPNG's worksites attracted visits from high profile Exxon Mobil Corporation executives such as: Senior Vice President, Neil Chapman; Senior Vice President and Chief Financial Officer, Kathy Mikells; Upstream Company President, Liam Mallon; and Senior Vice President, Peter Clarke.

During his visit, Peter Clarke and EMPNG Chairperson and Managing Director, Tera Shandro, joined Papua New Guinea Prime Minister, the Honourable James Marape, and former Minister for Petroleum and Energy, the Honourable Kerenga Kua, to open the inaugural Petroleum and Energy Conference in Port Moresby. In his keynote address, Mr Clarke discussed the important role that LNG and Papua New Guinea can play in the world's energy future.



**Exxon Mobil Corporation Upstream Company Senior Vice President, Peter Clarke, providing the keynote address at the Petroleum and Energy Conference in Port Moresby**

EMPNG also hosted the former Minister for Petroleum and Energy, the Honourable Kerenga Kua, and Secretary, Mr David Manau, and his departmental team at an inaugural visit to ExxonMobil Haus during the year.

In 2023, EMPNG launched the Power Play Awards Papua New Guinea to recognise the exceptional accomplishments of women across Papua New Guinea's LNG industry. For further information refer to *Case Study: EMPNG launches Power Play Awards to recognise women in LNG*.

EMPNG's Media team regularly engaged with mainstream media agencies throughout the year as part of EMPNG's State Benefits Campaign to ensure transparency in reporting how the Government and local businesses were benefiting from PNG LNG.



**The PNG LNG Kumuls and EMPNG staff with Papa community leaders and youths**

ExxonMobil also secured naming rights as co-sponsor of the PNG National Rugby League Competition's Digicel ExxonMobil Cup and visited Papa Village with the PNG LNG Kumuls in October to raise awareness about drug and alcohol abuse.



**EMPNG Chairperson and Managing Director, Tera Shandro, presents awards to the Enga Mioks after they defeated the Goroka Lahanis to claim the 2023 Digicel ExxonMobil Cup**



**Digicel PNG Senior Vice President, Ms Lorna McPherson; former EMPNG Chairman and Managing Director, Peter Larden; Digicel PNG Chief Executive Officer, Colin Stone; and PNG National Rugby League Chairman, Andrew Chou, at the naming rights announcement for the Digicel ExxonMobil Cup**

The PNG LNG Environmental and Social Report – Annual 2022 was published on the PNG LNG website in May and copies of the Report's Executive Summary were published in English and Tok Pisin in national newspapers. In addition to the 2022 Report, previous Environmental and Social Reports have been published on the PNG LNG website.

[www.pnglng.com](http://www.pnglng.com)

Throughout the year, 29 EMPNG Meta posts reached 2.35 million people resulting in 22,810 engagements. The posts were mostly about community empowerment, fostering workforce skills and industry engagements.

## 2023 PERFORMANCE HIGHLIGHTS

### STAKEHOLDER ENGAGEMENT

# PGK24.4 billion

has been distributed from PNG LNG revenues to landowners and the Papua New Guinean Government since the start of production

# >8K engagements

conducted with communities in 2023 involving almost 32,300 stakeholders

# ~560 people

representing national government agencies, provincial-level governments, and co-venture partners participated in 35 EMPNG advocacy workshops held in 2023

# 2.35 million

people reached through 29 EMPNG Meta posts in 2023

# 126 visitors

from local schools and communities participated in LNG Plant site tours in 2023



## CASE STUDY

## EMPNG LAUNCHES POWER PLAY AWARDS TO RECOGNISE WOMEN IN LNG

EMPNG launched the Power Play Awards Papua New Guinea in 2023 as part of ExxonMobil's global Power Play Awards program developed by ExxonMobil women to bring together other women from across the LNG industry to network, collaborate, and do business.

Best of the Best recipients in each category of the inaugural Papua New Guinea awards qualified to represent the nation on the international stage at the global Power Play Awards.

The first local award recipient was TotalEnergies Biodiversity and IFC Advisor, Dr Jane Mogina, who also became the first Papua New Guinean to receive a global ExxonMobil Power Play Award.

Dr Mogina received 'The Pioneer' award in both the Papua New Guinea and global Power Play Awards for her tenure as PNG LNG Senior Biodiversity Advisor where she led the development of Papua New Guinea's first LNG biodiversity offset program that continues to support the country's conservation efforts.

MRDC Legal Manager, Valentina Kaman, was recognised with 'The Ambassador' Power Play Papua New Guinea Award and shortlisted for the global Power Play Awards in recognition of her commitment to nation-building as a shared responsibility and her dedication to furthering knowledge and education as tools for unlocking Papua New Guinea's full potential.

Senior Manager at Placements (PNG) Limited, Jasmine Harrison, was named 'Rising Star' in the local award for her commitment to contractor workforces across the LNG industry and her passion for removing potential barriers for young Papua New Guineans entering the workforce.

Advocate for the Power Play Awards Papua New Guinea, Christine Yango said,

***"This award is about the voices that have yet to be heard. The LNG industry is more than just the PNG LNG operations and we wouldn't be able to do the work we do every day without the support of skilled women. We want to hear their stories and celebrate their contributions."***



**Best of the Best recipients of the inaugural Power Play Awards Papua New Guinea (seated from left): The Pioneer, Dr. Jane Mogina; The Ambassador, Valentina Kaman; and The Rising Star, Jasmine Harrison with (standing from left) former Minister for Petroleum and Energy, the Honourable Kerenga Kua; ExxonMobil PNG Chairperson and Managing Director, Tera Shandro and Chairman of Motu Koita Assembly and Deputy Governor of National Capital District the Honourable Dadi Toka Jr**





*Image captions:*

<b>Cover</b>	A New Guinea dainty treefrog ( <i>Litoria auae</i> ), which is found only in the forested lowlands and foothills of southern New Guinea and is commonly encountered during EMPNG biodiversity surveys in the Kikori Delta
<b>Executive Summary</b>	Members of the Operations Leadership and LNG Plant Operations and Maintenance teams on the LNG Plant Marine Terminal jetty as the <i>Gigira Laitebo</i> is loaded with the 1000 <sup>th</sup> cargo
<b>Chapter 1</b>	Mooring team members securing a ship prior to loading LNG at the LNG Plant Marine Terminal
<b>Chapter 2</b>	EMPNG Operations Technicians Alroy Suk and Lopia Laima at the LNG Plant site
<b>Part A</b>	LNG Plant site at sunset
<b>Chapter 3</b>	EMPNG Safety Specialist, Julia Aki; LNG Plant Operations Technician, Amos Tade; and Field Technician, Shikaina Kutkue, at the LNG Plant site
<b>Chapter 4</b>	Trans Wonderland Limited is one of the Lancos providing transportation services for EMPNG operations
<b>Chapter 5</b>	A Baruni Primary School student celebrating the opening of three new classrooms
<b>Part B</b>	Serebi River, a tributary of the Kikori River
<b>Chapter 6</b>	<i>Spathoglottis plicata</i> from the family, Orchidaceae
<b>Chapter 7</b>	EMPNG Field Environmental Specialist, Dorothy Kela, conducting surface water monitoring at the Komo Airfield
<b>Part C</b>	A performer at the HGCP Independence Day celebrations wearing a traditional Huli costume
<b>Chapter 8</b>	EMPNG Marine Technician, Sidney Isaiah, at the LNG Plant Marine Terminal control room
<b>Chapter 9</b>	Annabella (back), Rhyis and Healey, children of EMPNG Tenant Services Administrator, Jennifer Tombel, at the Company's Family Fun Day

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