

# ExxonMobil

PNG LNG ENVIRONMENTAL  
AND SOCIAL REPORT



# 2020

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## To our stakeholders

The past five years have presented some significant challenges and opportunities for Papua New Guinea and EMPNG – and 2020 was no different.

After emerging from the 2018 earthquake, the strength of Papua New Guinean people, including EMPNG's workforce, was tested again during 2020 with the extensive disruption caused by COVID-19.

For EMPNG, this meant the suspension of some Upstream area projects and immediate implementation of strict workplace protocols to help protect the health and safety of all workers. This included 'island mode' operations that involved a pre-work quarantine period before workers entered sites, and moving many workers into on-site camps to continue production while complying with COVID-19 measures.

Despite these challenges, EMPNG's team achieved record LNG production levels, while delivering the company's best safety performance since the start of production and continuing to meet commitments made in the Production Environmental and Social Management Plan. EMPNG achieved 8.8 million tonnes of LNG produced with 115 LNG cargoes loaded during 2020, compared to 111 cargoes loaded in 2019. The company's continued safety and process performance was recognised by Papua New Guinea's Department of Petroleum, which approved an increase in production volume capacity from 8.5 million tonnes per year equivalent to 9.3 million tonnes per year equivalent.

EMPNG has also continued to progress its national content objectives by accelerating employment opportunities for Papua New Guinean citizens, who now comprise 91 percent of the workforce. Papua New Guinean workers are replacing expatriates in leadership positions, with 77 Papua New Guinean citizens now occupying management roles within EMPNG.

EMPNG's engagements with communities and government remained strong during 2020 and resulted in the progression of many community and biodiversity initiatives. This included the completion of resource mapping with 10 Lower Kikori region communities that are now ready to establish conservation areas, and the first conservation committee formed for the Lower Kikori region.

As I reflect on our achievements during 2020, I write this with a tinge of sadness as this is my final year with EMPNG. In the new year I will move to a position with ExxonMobil in Singapore, but I take fond memories of Papua New Guinea, the EMPNG team, our contractors and our government, private sector and community stakeholders with me.

I leave EMPNG feeling proud of our company's achievements but also humbled by the outstanding contributions that our workers have made over the past five years in partnership with government and community stakeholders.

I have no doubt that EMPNG will continue to thrive because of the extensive partnerships that have been formed since the start of construction, with a shared goal of creating long-term social and economic development opportunities for Papua New Guinea.

I am also confident that EMPNG and its stakeholders will continue to benefit under the leadership of the company's new Managing Director, Peter Larden, who is supported by a highly skilled and talented workforce that is focused on enabling Papua New Guinea to firmly position itself as a world class LNG provider.



**Andrew Barry, Managing Director,  
ExxonMobil PNG Limited**





*About this Report*

This PNG LNG Environmental and Social Report – Annual 2020 provides information about ExxonMobil PNG Limited’s safety, health, environment and social management progress during production. It forms part of PNG LNG’s commitment to keep the government and citizens of Papua New Guinea, interested non-government organisations and other stakeholders informed of production activities.

Printed copies are available.

# ExxonMobil

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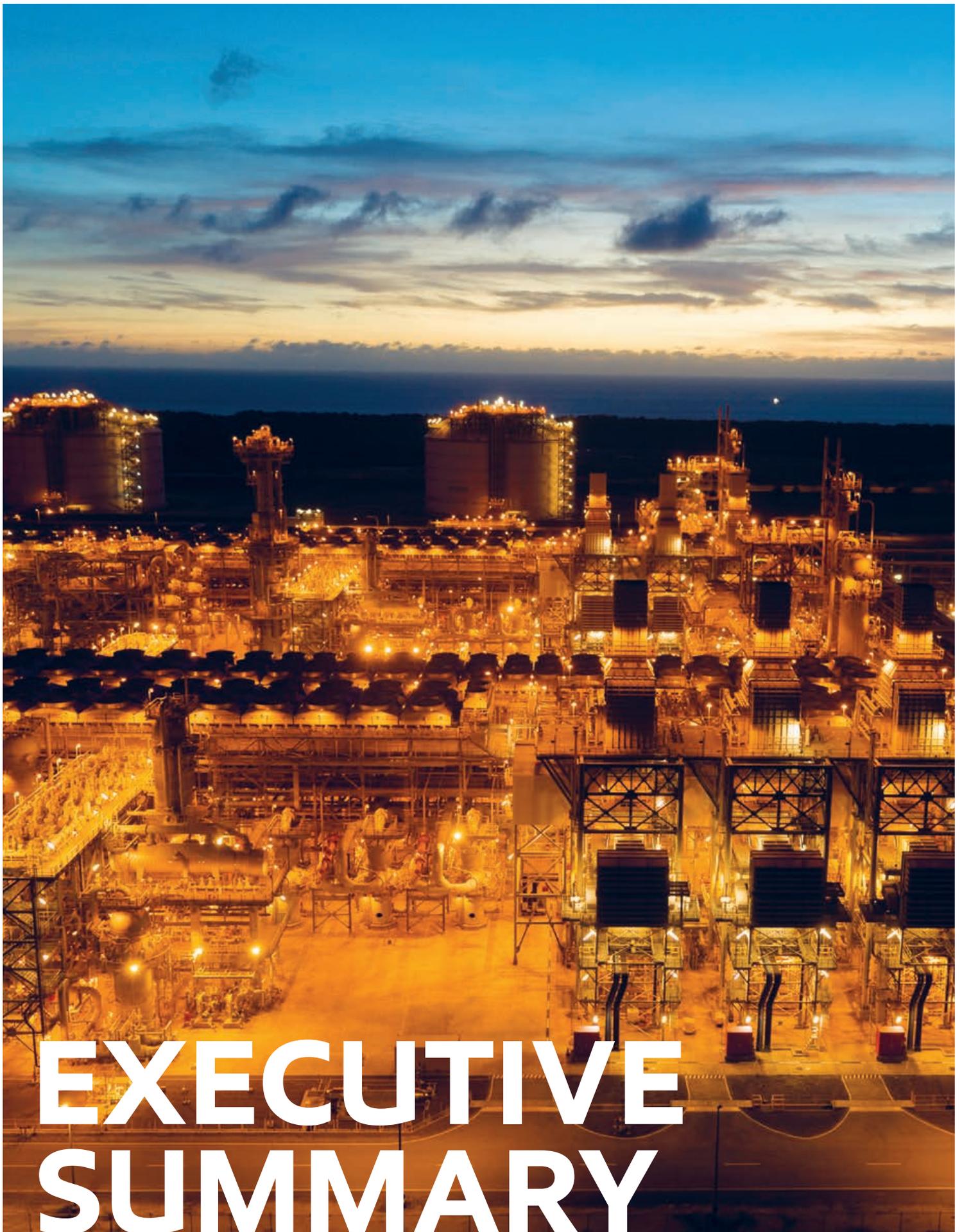


**Santos**



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# EXECUTIVE SUMMARY

The global impact of COVID-19 reached Papua New Guinea during 2020 and, as a result, ExxonMobil PNG Limited implemented measures including 'island mode' operations to protect its workforce on-site while safely continuing production.

Despite the ongoing challenges of pandemic restrictions, the Papua New Guinea Liquefied Natural Gas (PNG LNG) Project recorded its highest production year and best safety performance since operations began, while continuing to meet environmental and social commitments made in the Production Environmental and Social Management Plan.

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

This Environmental and Social Report provides a progress update on EMPNG’s environmental and social performance from 1 January to 31 December 2020.

## Production

During 2020, EMPNG loaded its 600<sup>th</sup> LNG cargo and produced a record 8.8 million tonnes of LNG. More than 50 million tonnes of LNG and 696 LNG cargoes have been shipped to customers in Asia since production began.



### LNG Plant Marine Terminal jetty

As a result of continued stable operations at the LNG Plant, Papua New Guinea’s Department of Petroleum has approved a variation of the plant’s original operating parameters, which resulted in a production volume capacity increase from 8.5 million tonnes per year equivalent to 9.3 million tonnes per year equivalent.

Work was completed on a Dirio Gas & Power plant tie-in project from the LNG Plant, which will provide energy for Port Moresby businesses and communities.

## National content

EMPNG aims to create long-term shared value from national content initiatives for its stakeholders in the areas of workforce development, supplier development, and strategic community investment.

EMPNG’s workforce development priority is to grow, develop and enable the full contribution of Papua New Guinean citizens in the workforce.

### HIGHLIGHT

## EMPNG GETS NEW MANAGING DIRECTOR

ExxonMobil has appointed Peter Larden as EMPNG’s new Managing Director.

Mr Larden joined ExxonMobil in Melbourne, Australia in 2005 and has held numerous senior-level technical and supervisory roles with the company across Australia, the United States, United Kingdom and Africa. He was involved in the PNG LNG Project based in Melbourne from 2009 to 2010. His most recent role was as President of ExxonMobil Canada Limited, where he was responsible for production, development and exploration interests in Atlantic Canada and Western Canada.

Mr Larden replaces former EMPNG Managing Director, Andrew Barry who accepted a position as Vice President of Global LNG Marketing for ExxonMobil in Singapore, with responsibility for LNG marketing activities worldwide. Mr Barry has led EMPNG since 2015, achieving record LNG production levels, and an industry-leading safety performance.



EMPNG’s new Managing Director, Peter Larden



**LNG Plant Operations Competency Assurance Standard assessors, Apollonia Nabo and Moale Bae**

At the end of 2020, PNG LNG's workforce was 2784 employees and contractors. This was reduced from 3964 workers at the end of 2019 due to the suspension of some Upstream area projects as a result of travel and workplace restrictions caused by COVID-19. The 2020 workforce included 2539 Papua New Guinean citizens, who comprised 91 percent of the workforce, compared to 86 percent in 2019. Of the Papua New Guinean workforce, 20 percent is female, which is an increase from 17 percent in 2019. Ten new Papua New Guinean engineers were recruited to production operations in 2020, along with the second intake of graduate engineers.

Workforce training and development continued during pandemic restrictions, with many training programs delivered online. The equivalent of more than 87,030 hours of training was provided in 2020 through more than 2370 courses. Ninety-five percent of training participants were Papua New Guinean citizens.

On 1 September, EMPNG achieved a significant milestone with its first shift fully managed and operated by qualified Papua New Guinean workers. This included Hides Gas Conditioning Plant and pipeline operations supervisors, and control room, field and pipeline technicians. All EMPNG Control Room Technician positions are now occupied by Papua New Guinean citizens, including four women. Technicians begin their careers with EMPNG through the Operations and Maintenance training program.

Thirty-six Operations and Maintenance technicians, including six women, have qualified as Competency Assurance Standard assessors. In this capacity, they verify the competency of a technician for a particular procedure or task. Papua New Guinean citizens now comprise almost half the number of assessors at EMPNG.

Twenty-seven Junior Technicians, including 10 women, from the fifth intake of the Operations and Maintenance training program began on-the-job training at the LNG Plant in January following completion of their 12-month Junior Technician program at the Kumul Petroleum Academy. EMPNG also welcomed its sixth intake of Operations and Maintenance technician trainees. The 17 new trainees consist of five women and 12 men who are receiving training through the Kumul Petroleum Academy.

When they have completed training, these trainees will join the 198 Operations and Maintenance technicians, including 50 women, who are currently employed in production activities.

More than 40 percent of Operations and Maintenance technicians progressed to the next Technician Level during 2020.

In addition to creating employment opportunities and increasing the skills of the workforce, EMPNG aims to develop and engage the services of Papua New Guinean businesses so they can become self-sustaining enterprises that create more employment opportunities and contribute to the nation's economy. EMPNG has spent more than PGK15 billion (USD4.3 billion) on Papua New Guinean goods and services and invested some PGK27 million (USD7.7 million) in Papua New Guinean business development activities since the start of construction.

During 2020, 15 landowner companies (Lancos) and 196 non-Lanco Papua New Guinean businesses were engaged for production-related activities.

EMPNG's total in-country spend with Papua New Guinean businesses in 2020 was more than PGK817.3 million (USD232.9 million) compared to PGK755 million (USD215 million) in 2019.

Of this, approximately 40 percent was spent on Lanco services, which equates to more than PGK311.4 million (USD88.7 million) and compares to PGK239.3 million (USD68.2 million) spent on Lanco services during 2019.

Lanco services include road maintenance, civil works, transportation of personnel, fuel distribution, security, catering, and labour hire.

Non-Lanco businesses provide services such as road maintenance, transportation of personnel, security, freight and logistics, catering and food supply, customs clearance, maintenance, surveying, inspection and testing, medical services and waste management.

EMPNG's work with the Enterprise Centre during the past decade has helped build the capacity of PNG LNG's two representative Lancos. The Centre has also helped to develop Papua New Guinean businesses such as Nares Engineering Limited and Total Waste Management, which have both become internationally certified businesses that are now attracting overseas contracts.

With EMPNG's assistance the Enterprise Centre, which is overseen by the Papua New Guinea Institute of Banking and Business Management (IBBM), is transitioning to self-sustaining operations. This includes expanding the Centre's client base to provide business development services to other mining and petroleum industry operators and their suppliers, as well as to other large Papua New Guinean businesses. EMPNG remains committed to ensuring the long-term success of the Enterprise Centre as an active member of the IBBM Board.

EMPNG's community investment program supports sustainable community and economic development through education, health, livelihood support, law and justice, environment awareness, key infrastructure improvements and community-based initiatives.

During 2020, EMPNG invested PGK8.4 million (USD2.4 million) in the community through contributions, sponsorships, in-kind support and community-based projects. An additional PGK57.4 million (USD16.4 million) was invested in local infrastructure through infrastructure tax credit projects. More than PGK10 billion (USD2.9 billion) has been invested in community initiatives and local infrastructure since construction began.

EMPNG has renewed its contract with ANU Enterprise Proprietary Limited to continue the Community Livelihood Improvement Project, which began in 2015. The Project is helping to provide financial independence and improve standards of living for communities in Hides, Juni, Nogoli, Angore and Komo through training and support in areas such as nutrition, financial literacy and farming techniques. To date, EMPNG has invested almost PGK17 million (USD4.8 million) in these communities through the Project. Since the start of the Community Livelihood Improvement Project, communities have earned more than PGK537,000 from fresh produce sales to the Hides Alliance Group, which provides catering services for the Hides Gas Conditioning Plant.

Investment in community infrastructure continues, with funding provided during 2020 for a new Porebada Elementary School classroom, a new teacher's house at Kutubu Secondary School, a new community resource centre in Papa Village, and new staff houses for Redscar High School and Lea Lea Primary School.

The Advancing PNG: Women Leaders Network, which consists of alumni from the ExxonMobil-supported Centre for Development and Population Activities Global Women in Management program, is implementing women's empowerment programs. In 2020, the Network launched a member credit scheme in partnership with the Ambumangre Micro Credit Scheme. This initiative will help more than 50 different communities access funds in support of women's economic empowerment.

The Network has also partnered with the Helaro Hope Association to deliver Hiri Motu pottery workshops for women in coastal villages. The workshops are intended to keep this important culture alive for future generations and to create economic opportunities for women.



**Helaro Hope Association President and Co-founder, Dobi Isaiah (left), with women participating in a Motuan pottery workshop in Porebada**

EMPNG is maintaining ongoing support for Buk bilong Pikinini in its mission to increase literacy rates through the establishment of community-based libraries that give children access to reading materials.



Image courtesy of Buk bilong Pikinini

**Buk bilong Pikinini launches a new early childhood development app**



Head Start conservation program workers ready to return *piku* to their original home at Wau Creek

During 2020, EMPNG and Buk bilong Pikinini launched an early childhood development app, which will be used by Buk bilong Pikinini's library learning centres to help teachers use technology to support children's learning.

## Environment

The Port Moresby Nature Park has celebrated a milestone with the completion of the five-year Head Start conservation program funded by EMPNG and delivered in partnership with the University of Canberra in Australia, Kikori River Catchment Area landowners and relevant authorities, to protect pig-nosed turtles (*Carettochelys insculpta*), or *piku*.

The program involved raising some 45 turtle eggs at the Nature Park, which were rescued from Wau Creek in the Lower Kikori region, with the intention of returning them back to the creek as adult turtles. In August 2019, the first 15 turtles from the program were released back into the wild once they had reached a size of approximately 15 centimetres in shell length.

During 2020, the remaining pig-nosed turtles raised through the program were returned to their original home at Wau Creek. Wau Creek residents have since expressed interest in creating their own in-situ turtle nursery to maintain ongoing protection of the *piku* species.

Twenty-two members of the Lake Kutubu Wildlife Management Area Committee have completed the final two modules of conservation training delivered by mammal expert Enock Kale. The final modules covered mammal and plant survey techniques.

Ten Upstream area communities completed resource mapping during 2020 and are now ready to establish conservation deeds for areas identified for conservation.

In July, a conservation committee was formed for the Lower Kikori region and involved community leaders from the Lower Kikori Delta, including representatives from the East and West Kikori local-level governments. For the first time, communities that were not part of the Bargaining Route Waterways Memorandum of Understanding signed between EMPNG and eight Kikori River tribes in 2010, showed interest in dedicating their land to support conservation initiatives.

Through waste reduction initiatives, including recycling, as well as a decrease in Angore Gathering System and earthquake recovery works, EMPNG achieved a 20 percent reduction in waste during 2020 compared to the previous year. More than 60 tonnes of used batteries from both the Hides Gas Conditioning Plant and LNG Plant site were sent to an approved Papua New Guinean facility for recycling in 2020. Another 200 tonnes of waste from the LNG Plant site was recycled during the year, including scrap metal and waste oil. Approximately 215 tonnes of waste oil was sent to an approved Papua New Guinean specialist contractor for recycling through their waste oil processing unit.

Almost 60 tonnes of oily wastewater was treated through the LNG Plant's dissolved air flotation unit with no impact to the quality of discharge water.

## Social

EMPNG has completed over 70 million hours of work since the start of production. During this time, the LNG Plant has achieved more than seven years of work without a Lost Time Incident and one year without a restricted work incident. EMPNG has had no Lost Time Incidents for more than three years and no significant process safety events for almost seven years.

EMPNG’s Safe Choice program, which was introduced in 2019, is empowering workers to make safer choices in the workplace. There are now 179 Safe Choice coaches, consisting of workers who have completed training to mentor, support and encourage their colleagues to make safe choices at work.

During 2020, workforce health activities focused on maintaining the physical and emotional wellbeing of workers during pandemic restrictions. To prevent the transmission of COVID-19, critical safeguards were implemented involving protocols such as: the use of masks; increased hygiene standards; social distancing; virtual meetings; revised shift rotations to accommodate pre-work quarantine procedures; and COVID-19 testing. As a result, EMPNG recorded no workplace acquired COVID-19 cases.

To support Papua New Guinea’s pandemic response, EMPNG donated medical equipment to the National Department of Health. The equipment was used to establish an infectious disease isolation facility at Port Moresby General Hospital. EMPNG volunteers helped distribute the medical equipment and personal protective equipment to hospitals and frontline health workers during the year. EMPNG also provided food donations for frontline health workers and health facilities.



**EMPNG employees support the National Department of Health with preparing personal protective equipment packages for frontline health workers as part of pandemic response efforts**

To improve long-term community health outcomes, EMPNG worked closely with the Hela Provincial Health Authority to deliver a new sterilisation building and install two 400-litre steam sterilisation machines at Tari General Hospital. The sterilisation building and steam sterilisation units are anticipated to increase the hospital’s capacity to treat more patients by speeding up the sterilisation process between procedures.

During 2020, EMPNG conducted 5408 engagements with communities throughout the PNG LNG area of operations. These were held through almost 2000 formal and some 3400 informal engagements with 36,650 stakeholders.

Community engagements were undertaken in accordance with COVID-19 safe practices and most of the engagements regarded raising awareness about COVID-19.



**Papa Pre-school Head Teacher, Elder Baga Apoma, reads COVID-19 preparedness advice provided by EMPNG**

EMPNG commemorated Papua New Guinea’s 45<sup>th</sup> Independence Day in September with a webinar featuring local dignitaries talking about the petroleum industry’s contribution to nation building. The webinar was opened by Papua New Guinean Prime Minister, the Honourable James Marape, who said PNG LNG was one of the greatest success stories of the country’s young economy. He also commended the EMPNG workforce for their contribution and service to the country.

EMPNG is maintaining ongoing engagement with the government and communities of Papua New Guinea to realise initiatives that will help drive sustained economic and social development for the country.

# 1



# OVERVIEW

Operation of the PNG LNG production facilities and associated gas resources is managed by EMPNG to provide affordable, reliable and sustainable energy for the Asia Pacific region.

The USD19 billion Papua New Guinea Liquefied Natural Gas (PNG LNG) facilities, operated by ExxonMobil PNG Limited (EMPNG), extend from Papua New Guinea’s Hela, Southern Highlands, Western and Gulf provinces to the Central Province and National Capital District. The facilities gather multiphase fluids from Hides wells and transport them through the Hides Spine to the Hides Gas Conditioning Plant (HGCP), where the fluids are stabilised and conditioned into two streams – gas and condensate.

The condensate travels through the HGCP-Kutubu Condensate Pipeline to the Kutubu Central Processing Facility, and from there, to the Kumul Marine Terminal in the Gulf of Papua. Dry gas is transported through more than 700 kilometres of pipeline to the LNG Plant located northwest of Port Moresby on the Gulf of Papua. The dry gas is liquefied at the LNG Plant for export to customers in Asia. Gas is also provided to NiuPower and Dirio Gas & Power to supply energy for Port Moresby businesses and communities. The location and elements of these facilities are shown in Figure 1.1.

More than 11 trillion cubic feet of LNG are anticipated to be produced over the life of the PNG LNG facilities to provide a long-term energy supply to customers including: China Petroleum and Chemical Corporation (Sinopec), Osaka Gas Company Limited, JERA Company Inc. and CPC Corporation in Taiwan.

This Report is published on the PNG LNG website, along with previous Environmental and Social Reports. Printed copies of the full Report and translated summaries are provided for Papua New Guinean citizens who may have limited access to the internet.

Visit the website at: [www.pnglng.com](http://www.pnglng.com)



## 1.1 Production

PNG LNG recorded its highest production year since operations began, with 8.8 million tonnes of LNG produced in 2020 despite the disruptions to global business and travel



**EMPNG Operations Storage and Loading Technician, Smith Kops, onboard the Kumul LNG carrier in front of the LNG Plant Marine Terminal**

caused by COVID-19. The 600<sup>th</sup> LNG cargo was also loaded and a production well brought online. A total 115 cargoes of LNG were loaded during 2020, compared to 111 cargoes in 2019. More than 50 million tonnes of LNG and 696 LNG cargoes have been shipped to customers in Asia since the beginning of production.

As a result of ongoing stable operations at the LNG Plant, Papua New Guinea’s Department of Petroleum has approved a variation of the plant’s original operating parameters, which resulted in a production volume capacity increase from 8.5 million tonnes per year equivalent to 9.3 million tonnes per year equivalent.



**Komo Airfield workers relocated to the HGCP during ‘island mode’ to support critical aviation operations**

## 1.2 Wells

Work on plug and abandonment activities that began in December 2019 on pre-existing wells in Angore was safely completed in August.

**HIGHLIGHT****POWERING PAPUA NEW GUINEA**

EMPNG is supplying natural gas for two Papua New Guinean power plants to deliver affordable and reliable electricity to Port Moresby businesses and communities.

NiuPower, established in 2017; and Dirio Gas & Power, established in 2019, will use PNG LNG gas to deliver approximately 100 megawatts of power to the Port Moresby power grid. Dirio Gas & Power is Papua New Guinea's first fully nationally-owned independent power producer and is managed through the Mineral Resources Development Company Limited on behalf of clans that are beneficiaries of oil and gas production under the *Oil and Gas Act 1998*.

Using PNG LNG gas, NiuPower will deliver 58 megawatts of energy and Dirio Gas & Power will generate approximately 45 megawatts. This will provide affordable and reliable energy to Papua New Guinean industries such as manufacturing, health, retail and government, as well as to local communities.

EMPNG Managing Director, Andrew Barry said a reliable power supply was key to supporting economic growth for Papua New Guinea.

"Papua New Guinea's power supply provides new opportunities for the growth of small and medium-sized businesses, socioeconomic development and infrastructure development," Mr Barry said.

"It also gives Papua New Guinea much easier access to international markets through reliability of service and product supply."

Mr Barry said power produced from natural gas was much more cost effective and cleaner burning than diesel, and contributed to reducing greenhouse gas emissions in Papua New Guinea.



**Dirio Gas & Power plant**

### 1.3 Hides Gas Conditioning Plant

A replacement gas turbine generator engine was installed during maintenance work at the HGCP in late 2020.

Due to the impact of COVID-19, major planned maintenance on the HGCP pipeline compressor was deferred to early 2021.



**The gas turbine generator being unloaded at the Komo Airfield for road transport to the HGCP**

### 1.4 LNG Plant

In August, a molecular sieve change-out was safely completed for Train 2. EMPNG also received approval for the LNG Plant to connect pipe to the Dirio Gas & Power plant. Using natural gas supplied by PNG LNG, Dirio Gas & Power will deliver lower carbon low-cost electricity to households and businesses in Port Moresby.

Wi-fi has been installed at the LNG Plant to improve communications between plant operators, plant supervisors and engineering specialists from around the world. The new wi-fi connection allows real-time team communications through collaborative tools such as Skype. It will reduce costs and improve efficiencies by minimising the number of on-site visits required by LNG Plant advisory teams based at off-site locations.

### 1.5 Marine facilities and shipping

The 600<sup>th</sup> LNG cargo was loaded at the LNG Plant Marine Terminal in February.

In response to the changed global environment caused by COVID-19, the LNG Plant Marine Terminal developed specific plans and procedures to implement COVID-safe measures while continuing to comply with international shipping requirements and safety standards. This included reducing contact with international crews by minimising ship boarding and increasing remote communications, where possible.

### 1.6 Angore Gathering System

Work on the Angore facilities and pipeline progressed until March, when a decision was made to suspend the project due to challenges and uncertainties with sustaining appropriate resources because of COVID-19 restrictions. Planning for project restart has been completed and work is planned to resume once pandemic-related conditions ease.

Figure 1.1 – PNG LNG facilities



2020 PERFORMANCE HIGHLIGHTS

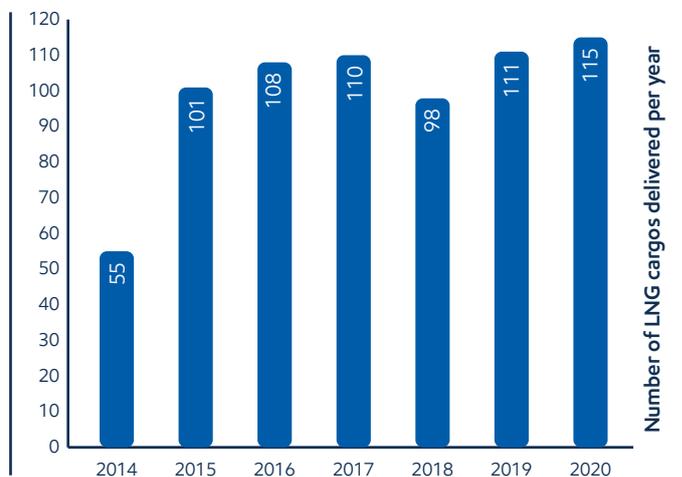
OVERVIEW



PRODUCTION CAPACITY INCREASED TO **9.3M** TONNES PER YEAR EQUIVALENT

**8.8M**  
TONNES OF LNG PRODUCED

**115**  
LNG CARGOES DELIVERED



# 2



## ENVIRONMENTAL AND SOCIAL FRAMEWORK

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

EMPNG conducts operations in accordance with Papua New Guinean laws and regulations, including monitoring compliance with 1418 regulatory obligations and 2395 licenses, permits and certifications, while also complying with PNG LNG Lender Group requirements. The company seeks to maintain the wellbeing of workers, communities and the environment around production facilities in accordance with ExxonMobil policies and systems, as well as the Production Environmental and Social Management Plan (ESMP).

## 2.1 ExxonMobil Standards

In accordance with its Standards of Business Conduct, EMPNG conducts business in a manner that is compatible with the environmental, social and economic needs of the communities in which it operates, and to protect the safety, security and health of employees, those involved with operations, customers and the public.

EMPNG also manages its operations under a disciplined risk management framework known as the Operations Integrity Management System (OIMS). This System supports risk management through the identification, evaluation and control of risks during exploration, construction and production activities.

## 2.2 Environmental and Social Management Plan

To manage and mitigate PNG LNG-related environmental, social, community health, safety and security impacts, and to meet PNG LNG's obligations under Papua New Guinean legislative and regulatory requirements, EMPNG operates in accordance with the Production ESMP.

The Production ESMP was developed following extensive consultation with stakeholders. It contains environmental and social management and mitigation measures, as well as monitoring requirements that were determined as part of the PNG LNG Environmental Impact Statement, along with lessons learned from the Project's construction phase. It also incorporates OIMS requirements, the International Finance Corporation Performance Standards, and other international standards such as the Equator Principles.

The Production ESMP consists of three Environmental Management Plans (EMPs), as shown in Figure 2.1, which cover all PNG LNG facilities. An additional seven Social Management Plans (SMPs) are based on key social themes. National content commitments are contained within each of the SMPs. EMPNG is accountable for implementing actions defined in the ESMP.

Production ESMP requirements apply during normal operating conditions and in reasonably foreseeable abnormal operating conditions or emergency situations.

The ESMP is periodically updated in consultation with stakeholders to meet ongoing environmental, social and operational needs. It can be viewed on the PNG LNG website.

Visit the website at: [www.pnglng.com](http://www.pnglng.com)



## 2.3 Monitoring and assessment

Monitoring and evaluation are conducted to assess the effectiveness of the production EMPs and SMPs. More specifically:

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

In addition to EMPNG's own monitoring and evaluation, the Lender Group has assigned an Independent Technical Consultant and Independent Environmental and Social Consultant (IESC) to monitor PNG LNG's performance against commitments made in the ESMP.

### 2.3.1 Internal assessments

EMPNG periodically conducts OIMS assessments to determine how OIMS requirements are being met through implementation of the ESMP.



**EMPNG Operations Technician, Kelly Keali, at the LNG Plant site**

In October, EMPNG conducted an internal OIMS assessment to determine the effectiveness of measures put in place to address issues identified in the previous OIMS assessment.

**HIGHLIGHT****IMPLEMENTING OIMS AT EMPNG**

EMPNG operates in accordance with OIMS, which is a cornerstone of the company's commitment to managing safety, security, health and environmental risks and achieving excellence in performance.

OIMS requirements apply to every EMPNG worker to protect the workforce, environment, and communities located near production facilities. OIMS not only enables EMPNG to monitor and assess the health of processes and systems, including implementation of the Production ESMP, but is also used to identify areas for continuous improvement.

EMPNG Managing Director, Andrew Barry, said OIMS was part of EMPNG's culture of operational excellence and continuous improvement.

"OIMS drives EMPNG to continually improve our processes and procedures to manage Operations Integrity, keeping our workplace safe, and protecting the communities and environment in our operating area," he said.

"Regular and ongoing OIMS assessments enable our teams to review processes and refine operations in accordance with lessons learned. This helps EMPNG to achieve a best practice approach to production operations."

During 2020, EMPNG continued to conduct OIMS assessments using virtual tools to comply with COVID-safe measures and 'island mode' operations. EMPNG also conducts regular OIMS meetings at worksites so employees and contractors can share knowledge and lessons learned to enhance overall system performance.



**EMPNG OIMS Coordinator, Wesley Spinder with Regulatory Supervisor, Lynette Baratai-Pokas**

The assessment team consisted of assessors from EMPNG's operations, technical, industrial hygiene, and safety, health and environment teams.

The October assessment concluded that OIMS requirements were being met.

### 2.3.2 External monitoring

Due to travel restrictions caused by COVID-19, only one on-site government monitoring visit was conducted by the Papua New Guinea Conservation and Environment Protection Authority during 2020. The Lender Group's IESC and Independent Technical Consultant conducted desktop monitoring reviews based on information provided by on-site EMPNG supervisors. This was followed with conference calls between EMPNG personnel and the monitoring consultants.

Relevant Papua New Guinean Government agencies were provided with regular status reports by EMPNG as required.

The 2020 IESC monitoring report will be issued in early 2021.

## 2.4 Management of Change

EMPNG applies a Management of Change (MOC) procedure for any temporary or permanent modifications to facilities, or to integrity critical documents that impact the operations of facilities. This procedure aims to:

- manage permanent, temporary and urgent or emergency changes to integrity critical procedures, process equipment or operating conditions
- provide a thorough evaluation of the proposed change
- consider the identification and control of potential risks associated with any proposed change.

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

The proposed change is communicated to workers whose job tasks may be impacted and who may require training before the change is implemented.

Changes are classified and managed according to potential impacts and consequences. Classification also serves as the basis for determining Lender Group notification and/or review requirements. Class I changes require Lender Group review prior to implementation, Class II changes require Lender Group notification as part of the annual *PNG LNG Environmental and Social Report* and Class III changes do not require notification to the Lender Group.

During the year, one Class II MOC was approved to move the LNG Plant incineration process off-site to the waste contractor's incinerator. This MOC will be presented to the IESC in early 2021.

A second Class II MOC, which was presented to the IESC in 2019, was approved in 2020. It was for the introduction of commercial aircraft operations at Komo Airfield.

Figure 2.1 – Production ESMP structure



2020 PERFORMANCE HIGHLIGHTS

ENVIRONMENTAL AND SOCIAL FRAMEWORK



**3** ENVIRONMENTAL MANAGEMENT PLANS



**7** SOCIAL MANAGEMENT PLANS



**1418** REGULATORY COMPLIANCE OBLIGATIONS



**2395** LICENCES, PERMITS & CERTIFICATIONS



**PART A**



## NATIONAL CONTENT

# EMPNG's mission is to create shared long-term value from national content initiatives for its stakeholders.

The national content strategy aims to deliver a coordinated, focused and sustained approach to developing human, social and economic capacity with tangible results for people, communities and businesses in Papua New Guinea. The strategy consists of three components:



Workforce Development – Growing, developing and enabling the full contribution of Papua New Guinean citizens in the EMPNG workforce.



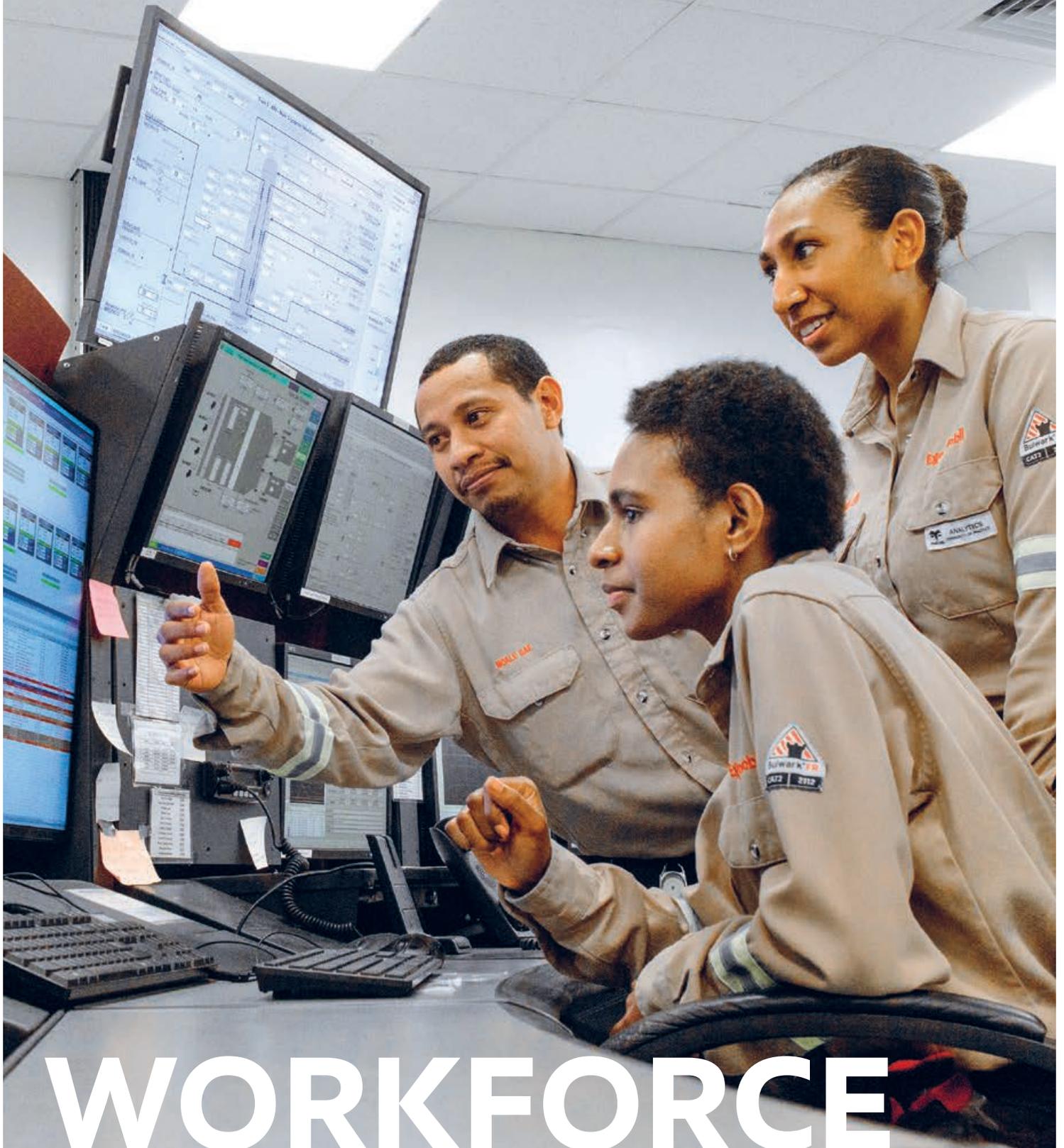
Supplier Development – Developing and engaging qualified and competitive Papua New Guinean businesses for the sustainable supply of goods and services.



Strategic Community Investments – Collaborating with stakeholders on community investments to help build resilient and empowered communities that drive economic development.

Through the national content strategy, EMPNG maintains a strong focus on supporting social and economic development in Papua New Guinea.

# 3



# WORKFORCE

EMPNG aims to maximise employment and career development opportunities for Papua New Guinean citizens.

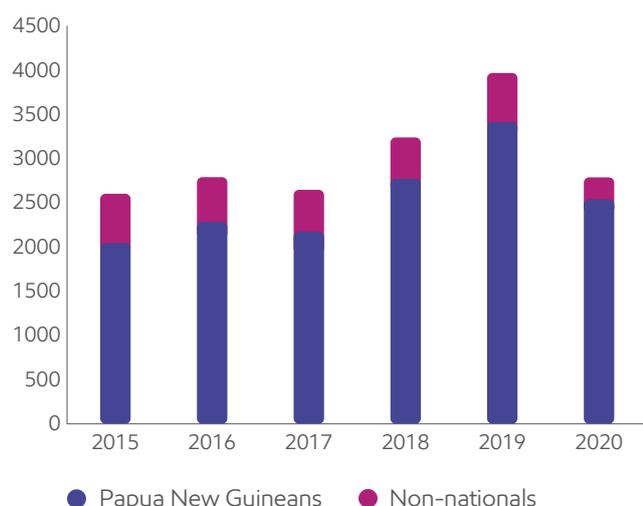
### 3.1 Composition

EMPNG’s commitment to enabling the full contribution of its Papua New Guinean workforce resulted in workforce nationalisation reaching 91 percent, compared to 86 percent in 2019.

At the end of 2020, PNG LNG had 2784 workers, including employees and contractors, in production-related activities, compared to 3964 workers at the end of 2019, as shown in Figure 3.1. The PNG LNG workforce reduction during 2020 was due to measures taken to mitigate the risks of COVID-19.

**Figure 3.1 – Production workforce**

NUMBER OF WORKERS BY YEAR



Of the Papua New Guinean workforce, 20 percent is female, which is an increase from 17 percent in 2019.

EMPNG has redefined job categories to better align employment with training, and the skills and experience of all employees. Under the new classifications, 12 percent of senior leadership/management positions, 59 percent of middle management/senior professional roles, and 90 percent of professional positions are occupied by Papua New Guinean citizens. All EMPNG employee field-based senior skilled, skilled and basic/semi-skilled positions are filled by Papua New Guinean citizens.

On 1 September, EMPNG achieved a significant milestone with its first shift fully managed and operated by qualified Papua New Guinean workers. This included HGCP and pipeline operations supervisors, and all control room, field and pipeline technicians.

All EMPNG Control Room Technician positions are now occupied by Papua New Guinean citizens, including four women. These technicians had previously completed the Operations and Maintenance training program.

The Upstream area comprises 49 percent of the total PNG LNG workforce, including employees and contractors, while 29 percent is based at the LNG Plant site. The rest of the workforce is based in other locations, such as the Port Moresby office.

**HIGHLIGHT**

**A NEW GENERATION OF LEADERS**

EMPNG is building a new generation of leaders with the ongoing promotion of Papua New Guinean citizens to leadership roles during 2020, bringing the total number of Papua New Guinean workers in management to 77.

EMPNG Managing Director, Andrew Barry, said the promotion of Papua New Guinean citizens to leadership positions with EMPNG was the culmination of a long journey, which started with a plan prior to the construction of PNG LNG, to one day have a completely Papua New Guinean workforce in charge of PNG LNG operations.

“EMPNG is proud to have such a diverse and highly talented workforce, with an outstanding team of new leaders who will pave the way for even more opportunities for Papua New Guinean citizens,” he said.

Leadership appointments during 2020 included the promotion of Operations and Maintenance technicians to lead and supervisory positions. Yasi Koriam was promoted to Electrical Lead; Firman Lora to Instrumentation Lead; Terry Yad to Mechanical Lead; Alex Oki to Pipeline Supervisor; and Vickie Watch to Pipeline Supervisor.

Alex Oki replaced Noah Pingin, who was the first Papua New Guinean citizen to hold the role when he was promoted in June 2018. Noah is now an Operations Supervisor at the HGCP, working with full shifts of Papua New Guinean workers.

Papua New Guinean citizens who replaced expatriates in leadership roles during 2020 included: Cordelia Seta, Logistics Supervisor; Joyce Tei, Building Services Supervisor; Nonnie Eri, Marine Supervisor; Esther Kila, OIMS and Safety Supervisor; Jay Lavapo, OIMS Supervisor; Lama Makara, Safety and OIMS Supervisor; Banak Gamui, Biodiversity Supervisor; and Jeremiah Liliura, Environmental Supervisor.



**EMPNG achieved a significant milestone in September with its first shift fully managed and operated by Papua New Guinean technicians**

Workers are recruited from areas near production facilities wherever possible. Forty-six percent of the 2539 Papua New Guinean workers in the total PNG LNG workforce are based at worksites in their local area, while 29 percent are from broader regional areas where the company operates. Approximately 25 percent are employed from other areas of the country.

**Lead Country Manager Awards**

EMPNG has honoured seven workers for demonstrating the company’s values with the Lead Country Manager Awards announced in December.

The Lead Country Manager Awards recognise workers who demonstrate outstanding examples of *Em pasin bilong ExxonMobil long PNG* or ‘the way we work at ExxonMobil in PNG’ behaviour, which reflects EMPNG’s six core values

of safety, security, respect for the environment, excellence, teamwork and integrity.

The 2020 award recipients were: HGCP Instrumentation Lead, Firman Lora; LNG Operations Technician, Elsie Digwaleu; Customer Engagement Lead, Elmira Puy; Biodiversity Advisor, Julia Hagoria; Commercial Advisor, Seth Woruba; Integrity Technician, Francis Avel; and Travel Supervisor, Vivienne Pasen.

**CASE STUDY**

**AWARD RECIPIENTS**



**2020 LEAD COUNTRY MANAGER AWARDS**

1. Firman received a safety award for consistently producing high quality safe work results. He recently completed risk screening training and has since become a risk screening subject matter expert for the HGCP Maintenance team. Firman has a high personal commitment to safety and actively participates in the Observation and Interaction and hazard identification programs. He also leads and motivates his team to maintain strong safe work and compliance results.

2. Elsie achieved a safety award for the important leadership role she played during the dehydration molecular sieve change-out work at the LNG Plant site. She was also recognised for: her expertise across work safety systems, including Management of Change requirements and interim directives; creating the LNG Plant work management collaboration space; and creating and upgrading operator rounds to improve consistency across all work shifts.

3. Elmira was recognised with a security award for working over and above her position to protect EMPNG’s people, assets, business partners and site visitors.

She was the field lead in the safety and security global on-site audit during 2020, and confirmed follow-up enhancement and corrective actions were completed during the year. Elmira has also led toolbox talks and the creation of education materials for topics such as cybersecurity phishing attack prevention.

4. Julia received this award under the environment category for providing excellent input in many EMPs

and biodiversity programs such as weed management, regeneration and cultural heritage. Julia emphasises environmental management requirements to contractors under her supervision, which has resulted in zero reportable environmental incidents and zero health issues. She is well known among her colleagues for high standards of professionalism, excellence and integrity.

5. Seth received the excellence award for demonstrating excellent standards in all his duties and portraying EMPNG’s values during his interactions with customers and members of Papua New Guinean communities. Seth was responsible for operationalising the Dirio Gas & Power sales contract, and in his capacity as a Domestic Gas Manager, he quickly developed positive relationships with EMPNG’s key customers and co-venture partners.

6. Francis was recognised with the teamwork award for supporting colleagues by taking on additional responsibilities and performing tasks that were not normally part of his role. Francis coordinated site inspections at both the HGCP and LNG Plant during a busy year that involved many complex inspections. He formed positive relationships with colleagues across worksites and worked collaboratively with several teams to support the inspection program.

7. Vivienne achieved the integrity award for consistently demonstrating integrity through her detailed and diligent approach to managing EMPNG’s compliance requirements. She is also recognised as a subject matter expert by EMPNG teams, industry stakeholders and trade associations.

**HIGHLIGHT****BRINGING STAKEHOLDERS TOGETHER FOR PNG'S GROWTH**

EMPNG has formed a dedicated National Content team, which is responsible for delivering the company's national content strategy.

The strategy aims to bring stakeholders together to create a legacy that enhances Papua New Guinea's economy and improves the livelihoods of the nation's citizens. EMPNG National Content Manager, Sisa Kini, said the company was working with a broad range of government, non-government and community stakeholders to drive long-term economic growth and social development opportunities for Papua New Guinea.

"EMPNG has been here for the long haul and has developed strong partnerships with the aim to connect and bring different stakeholders together to move the nation forward," she said.

"We are already seeing differences in communities, with women earning more income through agricultural programs, the development of schools and community healthcare facilities and the growth of local businesses, which is having a flow-on effect of creating employment for Papua New Guinean citizens.

"There will be many more opportunities that will emerge for local communities into the future as stakeholders continue to work together."



**EMPNG National Content Manager, Sisa Kini, presenting at the 2020 Papua New Guinea Chamber of Mines and Petroleum webinar**

## 3.2 Training and development

To build the capability of its workforce and give workers the skills and experience needed for their long-term careers, EMPNG has a comprehensive workforce development approach that covers both professional and personal development. This is delivered through programs including in-house and external training, mentoring, employee networks and development forums, short-term assignments, and broadening roles. Contractors also provide workforce training and development programs that are relevant to their scopes of work.

During 2020, EMPNG and its contractors continued to deliver training and development programs by adopting more online training during the pandemic. The equivalent of more than 87,030 hours of training was delivered in 2020 through more than 2370 courses. Ninety-five percent of training participants were Papua New Guinean citizens.

### 3.2.1 EMPNG workforce training and development

EMPNG employees received the equivalent of more than 50,660 hours of training in 2020, which was delivered to some 17,915 participants through more than 1460 different courses. Since the start of production, EMPNG has delivered the equivalent of almost 346,600 hours of employee training.

During 2020, EMPNG introduced employee development forums and mentoring programs. The employee development forums are delivered by experienced Papua New Guinean workers and focus on building employee skills in areas such as business acumen, resilience, career development, initiative and communication.

The mentoring program involves more than 35 experienced mentors supporting Papua New Guinean employees with their professional and personal development. The mentoring program aims to accelerate employee career development, expand professional networks, broaden employee perspectives and help them build confidence.

To support the development of supervisors, EMPNG has introduced a supervisor network, which involves regular meetings to help supervisors build their capabilities, so they are better equipped to develop their team members.

The second intake of university graduates started with EMPNG during 2020, with the first graduate intake starting their second rotation. EMPNG's three-year Graduate Development Program gives graduates experience in at least three different areas within the company, including human resources, procurement, and public and government affairs.

Toastmasters meetings continued online throughout the year to help employees develop communication and presentation skills.

In addition to developing technical skills, EMPNG provides cultural awareness training. In 2020, 49 workers participated in this training through site inductions and specific cultural awareness training sessions.

#### *Engineering and technical professionals*

Ten new engineers were recruited to EMPNG in 2020, including two Integrity Engineers, one Geotechnical Engineer, one Machinery Engineer, two Surveillance Engineers, two Electrical and Instrumentation Engineers, one Projects Engineer and one Measurement Engineer.

A new Engineers in Operations program was implemented for new graduates, involving four to six weeks of graduates shadowing Operations and Maintenance technicians at the LNG Plant site to learn about operations and maintenance processes.

Training continued for engineering professionals in 2020, with courses conducted through live video conferencing. This included an upstream facilities surveillance course, a materials and corrosion course, offshore structural engineering overview training, and root cause failure analysis training. The courses consisted of remote support from EMPNG subject matter experts.

EMPNG has implemented a new behaviour skills development initiative for engineering professionals. The initiative, called *Kirapim Stret Pasin* or 'Start Behavioural Change', involves a series of interactive discussion forums to help engineers develop soft skills such as presentation and communication skills.

During 2020, EMPNG's engineers were responsible for leading and stewarding multiple continuous improvement initiatives. This included: improving power voltage distribution stability; improvements to the HGCP stabilisation system; and identifying tugboat cost savings.

Career development opportunities continued for engineering and technical professionals in 2020.

Machinery Engineer, Stephen Marinjembi who was on an expatriate assignment in Houston, United States, was selected from many of ExxonMobil's Machinery Engineers globally to spend six weeks in Guyana, South America performing gas turbine generator testing and commissioning of main gas compressors. When Stephen returned to Papua New Guinea at the end of the year, he advanced to the position of Laboratory and Measurement Supervisor.

EMPNG engineers participated in the inaugural European Association of Geoscientists and Engineers, and American Institute of Petroleum Geoscientists, Papua New Guinea Petroleum Geoscience Conference and Exhibition held in Port Moresby. EMPNG's Chief Geoscientist, Frank Goulding, spoke at the conference, which was attended by some 250 representatives from government and the private sector. The conference theme was 'maturing Papua New Guinea's oil and gas industry through exploration, development and production'.



**EMPNG representatives with the ExxonMobil Exploration team from Australia at the inaugural Papua New Guinea Petroleum Geoscience Conference in Port Moresby**

**HIGHLIGHT**

**PETER'S PATH TO SUCCESS**

EMPNG's training programs have helped Peter Pomeleu from Manus Province grow his career from Machinery Engineer to becoming the first Papua New Guinean LNG Plant Surveillance Engineering Lead.

Peter joined the company in 2011 as part of the first intake of EMPNG's graduate engineering program. He was appointed Machinery Engineer on an early assignment with Esso Australia. In 2012, Peter joined the PNG LNG Systems Completion team as a Machinery Engineer supporting both the LNG Plant and HGCP. After four years he was promoted to Risk Advisor, where he led risk assessments and coordinated EMPNG's process safety major hazard events initiative. In March, Peter was promoted to the role of Surveillance Engineering Lead where he leads a team of engineers based at the LNG Plant. Peter credits his success to the training he received through EMPNG.

"The training that EMPNG provides is world class. You are given a roadmap from the outset and know exactly what training programs you need to attend to achieve specific competencies," Peter said.

"It has been great to travel overseas for some training elements because it has given me the chance to meet with the broader ExxonMobil engineering community and learn best practice processes."

Peter said he felt very supported during his training efforts, through EMPNG's face-to-face and online training programs, as well as mentoring by his colleagues.

"EMPNG provides the structure, guidance and support that you need, so the onus is on you to make the most of it and progress your career. The training and support I have received has given me the ability to work anywhere in the world. What I love most about the training curriculum is that it is based on real-life work scenarios, which allows us to apply newly-acquired skills into the field straight away."



**Peter Pomeleu (right) with fellow graduate engineer, Stephen Marinjembi at Longford Plants in Victoria, Australia**

### Operations and maintenance

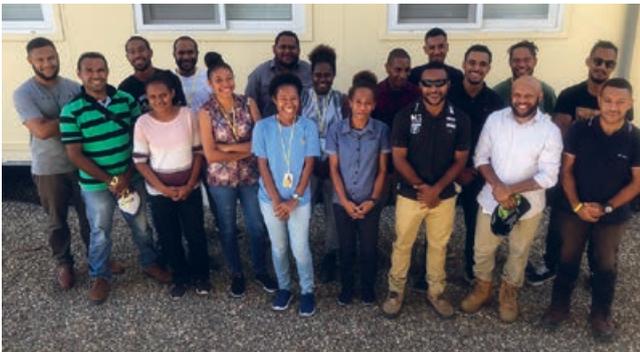
Thirty-six Operations and Maintenance technicians, including six women, have qualified as Competency Assurance Standard assessors. In this capacity, they verify the competency of a technician for a particular procedure or task.

Papua New Guinean citizens now comprise almost half the number of assessors at EMPNG. To be a Competency Assurance Standard assessor, technicians must be selected by their supervisor to attend assessor training and they must be a minimum of a Technician Level 3 who is progressing to Lead Technician Level 4.

Twenty-seven Junior Technicians, including 10 women, from the fifth intake of the Operations and Maintenance training program began on-the-job training at the LNG Plant in January following completion of their 12-month Junior Technician program at the Kumul Petroleum Academy. The seven electrical, four mechanical and 16 operations technicians had all settled into their field shifts at the HGCP and LNG Plant by July.

EMPNG has welcomed its sixth intake of Operations and Maintenance technician trainees. The 17 trainees were selected from more than 2000 applicants and comprise five women and 12 men who are receiving training through the Kumul Petroleum Academy.

Following their training, ten of the trainees will be assigned to the LNG Plant and seven to the Upstream area. They are among more than 220 Papua New Guinean citizens who have been recruited for careers with EMPNG through the Operations and Maintenance training program. By the end of 2020, a total 198 Operations and Maintenance technicians, including 50 women, were employed in production activities.



**Trainees from the sixth intake of the Operations and Maintenance training program**

More than 60 percent of these technicians are based at the LNG Plant, while almost 40 percent are based at the HGCP. Three technicians, including two females, have been assigned to the LNG Plant Marine Terminal, which is a new opportunity for technicians. For the maintenance disciplines, 34 are Mechanical Technicians, 31 are Instrumentation Technicians and 28 are Electrical Technicians.

Operations and Maintenance technicians have a training progression plan, starting at Junior Technician level.

### HIGHLIGHT

## NATHANIEL HELPS BOOST PROCESS EFFICIENCY

Since joining EMPNG in December 2017, Nathaniel Tuba from Levani in the Hela Province has helped to boost process efficiencies at the LNG Plant and HGCP.

Nathaniel started his career as a Facilities Surveillance Engineer at the LNG Plant in December 2017. He started supporting the HGCP as a shift rotator in 2020, while continuing his role as a Facilities Surveillance Engineer and assuming the role of Site Contact Engineer for the Upstream area, providing engineering support for the wellheads, pipeline and HGCP.

Among his career highlights so far, Nathaniel has helped reduce consumption of mono-ethylene glycol by 50 percent at the HGCP. He also helped analyse and guide simulations to assist LNG Plant operations conduct a molecular sieve change-out on the gas dehydration system while still online without impacting production. Normally, this maintenance procedure would require production downtime.

During his time with EMPNG, Nathaniel has received training twice in Houston, United States and participated as a youth representative at the 2018 Australian-Pacific Economic Cooperation program in Papua New Guinea.

Nathaniel said his work with EMPNG had taught him how to add value while also solving technical problems in real time.

"I really enjoy contributing to the team at EMPNG. We have a very supportive team of highly skilled people from across the business who I work with every day. We collaborate a lot to deliver safe, reliable and economically sound technical solutions."

Nathaniel said working for EMPNG had boosted his confidence in his abilities.

"I've had the privilege to have mentors with 10 to 30 years of experience in the oil and gas industry. My mentors have helped to shape me technically and professionally. I wouldn't be the person I am today without their contribution to my career development."



**Nathaniel Tuba (left) with members of the Upstream Operations team involved in the HGCP chemical consumption reduction initiative**

**HIGHLIGHT**

**VICKIE FORGES A CAREER WITH EMPNG**

Vickie Watch, from East Sepik and Oro provinces, set a record when she became EMPNG’s first female Pipeline Supervisor during 2020. This follows her achievement as EMPNG’s first female Control Room Technician in 2018.

Vickie has quickly forged an impressive career with EMPNG, which started when she joined the company as part of the second intake of Operations and Maintenance trainees in 2012. After graduating from the Operations and Maintenance training program, Vickie was assigned as an Operations Technician at the HGCP. Through dedication and a focused commitment, she has achieved her new supervisory role within eight years. In her current role, Vickie manages a team of four pipeline technicians and supervises some 100 workers at Moro B Camp.

Vickie said it was exciting to be leading the way for women in management at EMPNG.

“It was challenging at first, but it gets better with each new day by doing the best I can every day,” she said.

“I see EMPNG bringing out the best in individuals, both male and female, by training them and putting them in places where EMPNG thinks these individuals can excel.”

Vickie said that women who are starting out in their career should recognise their own values, know their worth and maintain integrity.

“The key thing that helped me achieve my work goals was trying to be committed and reliable in everything I do,” she said.



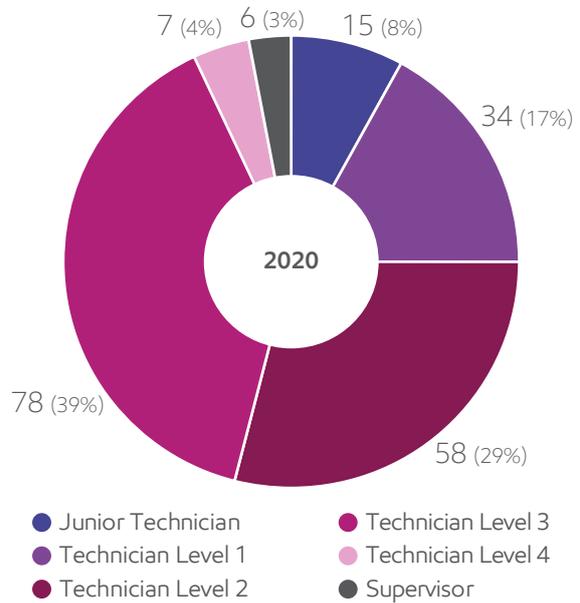
**EMPNG’s first female Pipeline Supervisor, Vickie Watch**

Trainees have the opportunity to progress from Junior Technician level through to Technician Levels 1, 2 and 3. Some may progress to Lead Technician Level 4 and/or supervisory level and beyond. It takes approximately 11 years to progress from a Junior Technician to Lead Technician. More than 40 percent of Operations and Maintenance technicians progressed to the next Technician Level during 2020.

The current levels of Operations and Maintenance technicians are shown in Figure 3.2.

**Figure 3.2 – Operations and Maintenance technicians**

NUMBER AND PERCENTAGE BY TECHNICIAN LEVEL



**3.2.2 Contractor training and development**

The equivalent of more than 36,370 hours of contractor training was provided through approximately 911 different courses during 2020.

Sixty-five percent of contractor training participants were located in the Upstream area, while 33 percent were at the LNG Plant and the remaining two percent were at contractor offices and other off-site locations. Thirty-three percent of contractor training participants were employed from local communities, while 15 percent were from a province in which PNG LNG operates and the remaining 52 percent were from elsewhere within Papua New Guinea.

Contractor training covered technical skills, as well as safety, security, health and environmental management training. Nine workers from HGDC Energy Services Limited (HESL), a wholly-owned subsidiary of landowner company (Lanco) Hides Gas Development Company Limited, have graduated from EMPNG’s Short Service Worker Program, which is helping them work towards achieving trade certification. These Upstream area workers are members of EMPNG’s vegetation control, civil works and vehicle workshop teams.



**HESL Short Service Worker Program graduates**



Junior Technicians from the fifth intake of the Operations and Maintenance training program begin on-the-job training at the LNG Plant site

2020 PERFORMANCE HIGHLIGHTS

WORKFORCE



**2784**  
TOTAL WORKERS



**2370**  
TRAINING COURSES



**77** PAPUA NEW  
GUINEAN MANAGERS



**91%**

PAPUA NEW GUINEANS IN THE PNG LNG WORKFORCE

'PNG LNG workforce' includes 'workers' consisting of: 'employees' comprising direct EMPNG employees for PNG LNG and staff contractors; and 'contractors', meaning third party contractors.

PRIORITY 1

**46%**



PRIORITY 2

**29%**

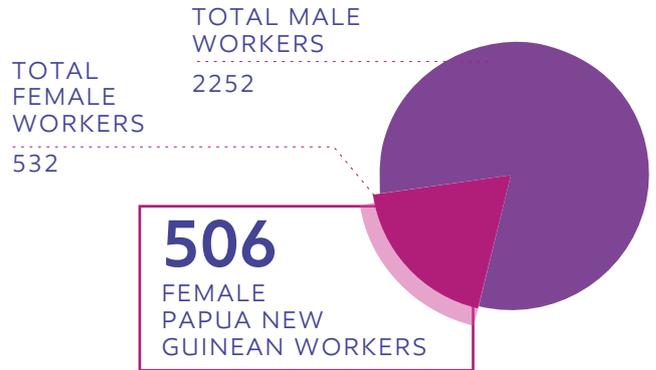


PRIORITY 3

**25%**



- PRIORITY 1** Papua New Guinean citizens of local origin proximate to PNG LNG operations
- PRIORITY 2** Papua New Guinean citizens of regional origin (Southern Highlands, Hela, Western, Gulf, and Central provinces and the National Capital District)
- PRIORITY 3** Papua New Guinean citizens originating from elsewhere in Papua New Guinea



PAPUA NEW GUINEAN EMPLOYEES OCCUPY:



**87,030** HOURS OF TRAINING DELIVERED IN 2020



# 4



# SUPPLIERS

EMPNG supports the growth of Papua New Guinean businesses to encourage a ripple effect of ongoing business and employment opportunities that helps drive sustained economic and social development for the nation.

## 4.1 Procurement and suppliers

EMPNG aims to develop and engage the services of Papua New Guinean businesses so they can become self-sustaining enterprises that create employment opportunities and contribute to the nation's economy. EMPNG has spent more than PGK15 billion (USD4.3 billion) on Papua New Guinean goods and services and invested some PGK27 million (USD7.7 million) in Papua New Guinean business development activities since the start of PNG LNG's construction.

During 2020, 15 Lancos and 196 non-Lanco Papua New Guinean businesses were engaged for production-related activities.

EMPNG's total in-country spend with Papua New Guinean businesses in 2020 was more than PGK817.3 million (USD232.9 million) compared to PGK755 million (USD215 million) in 2019. Of this, approximately 40 percent was spent on Lanco services, which equates to more than PGK311.4 million (USD88.7 million) and compares to PGK239.3 million (USD68.2 million) spent on Lanco services during 2019.

Lanco services include road maintenance, civil works, transportation of personnel, fuel distribution, security, catering, and labour hire. Non-Lanco businesses provide services such as road maintenance, transportation of personnel, security, freight and logistics, catering and food supply, customs clearance, maintenance, surveying, inspection and testing, medical services and waste management. Since the start of production, EMPNG has spent more than PGK4.6 billion (USD1.3 billion) on Papua New Guinean services, with PGK1.4 billion (USD403 million) spent with Lancos.

Two representative Lancos were pivotal during the construction of PNG LNG and have continued to provide essential services to EMPNG for production activities. These Lancos are Laba Holdings Limited and Hides Gas Development Company Limited (HGDC).

Laba Holdings Limited was formed in 2009 as the representative Lanco for the four LNG Plant site villages of Papa, Lea Lea, Boera and Porebada. As such, it represents the interests of Papa Resources Development Limited, BuriaRearea Caution Bay Limited, Boera Holdings Limited and Porebada Holdings Limited.

Laba Holdings Limited employs some 350 workers, including more than 50 women, and provides labour, plant and equipment, civil works, logistics, ground transportation, security, camp management and catering services for the LNG Plant site both directly and through several joint venture partnerships.

During 2020, the company was also awarded a contract to provide grounds keeping services to the site.

Founded in April 2008, HGDC is the representative Lanco for the Upstream area covering Hides, Komo and Angore operations.

HGDC has expanded its capacity since PNG LNG construction and now provides services including labour, personnel transportation, security, camp management and catering services, construction and project support services, vegetation management, vehicle and equipment rental, maintenance and repair, road maintenance and concrete batch plant operations both directly and through joint venture partnerships.



Laba Holdings Limited supplies drivers to EMPNG

HGDC has been crucial to supporting project work in Upstream area locations for earthquake recovery, the Angore Gathering System project, and major works along the Highlands Highway including engineering design, construction, quarry management, and equipment and workforce procurement and supply. Prior to COVID-19 restrictions, HGDC achieved a peak production workforce of 950 Papua New Guinean staff.



**HGDC Transport team at Para Camp in the Upstream area**

## 4.2 Capacity building

EMPNG aims to develop the capacity of local suppliers through appropriate training and business development opportunities.

The Enterprise Centre was established in 2010 by the PNG LNG Project to provide business assessments, training, advisory and mentoring services and give access to business centre facilities to help build the capacity of Papua New Guinean businesses. EMPNG has invested more than PGK27 million (USD7.7 million) in business development-related activities through the Enterprise Centre, including supporting approximately 600 business assessments, the equivalent of more than 46,500 training days and mentoring for some 20,000 entrepreneurs. EMPNG’s work with the Enterprise Centre during the past decade has helped to build the capacity of PNG LNG’s two representative Lancos to achieve self-sustaining operations. It has also helped to develop Papua New Guinean businesses such as Nares Engineering Limited and Total Waste Management, which have both become internationally certified businesses that are now attracting overseas contracts.

With EMPNG’s assistance the Enterprise Centre, which is overseen by the Papua New Guinea Institute of Banking and Business Management (IBBM), is transitioning to self-sustaining operations. This includes expanding the Centre’s client base to provide business development services to other mining and petroleum industry operators and their suppliers, as well as to other large Papua New Guinean businesses. EMPNG remains committed to supporting the long-term success of the Enterprise Centre as an active member of the IBBM Board.



**EMPNG supplier, Nares Engineering Limited, has secured a regional contract with Australian company Origin Energy. Nares Engineering provides equipment inspection and non-destructive testing services. The company was originally a subcontractor during PNG LNG construction in 2012 and later became a primary contractor of non-destructive testing services to the LNG Plant. Nares Engineering received business mentoring and training support through the Enterprise Centre. It now employs 13 staff, all of whom are Papua New Guinean citizens**

**CASE STUDY**

**LANCO RECEIVES INAUGURAL NATIONAL CONTENT CONTRIBUTION AWARD**

Lanco HGDC Energy Services Limited (HESL) has been awarded the 'Best National Content Contribution of the Year Award' in EMPNG's inaugural Contractor National Content Award.

The Award recognises HESL's efforts to promote employment, business opportunities and workforce development in Papua New Guinea.

Since 2009, HESL has made workforce development a core business priority by initiating programs that include:

- an apprenticeship program for mechanical fitters that is endorsed by the National Apprenticeship and Trade Testing Board. Three apprentices are currently working at the HGCP maintenance workshop through this program
- a Women in Workforce program that focuses on developing the technical capabilities, and increasing roles and responsibilities, of female staff. This program also includes career path planning and confidence building initiatives such as public speaking courses and involvement in the Toastmasters public speaking club
- a mentoring program that helps junior staff develop their skills in areas such as safety, engineering, finance, projects and human resources.

Ninety-nine percent of HESL's workforce is Papua New Guinean, with 70 percent from the Hela Province.

The HESL management team has demonstrated an ongoing commitment to building and maintaining a skilled local workforce.

Lanco, Laba Holdings Limited received an honourable mention for helping upskill local women's groups with sewing skills.

These women now have a small enterprise making uniforms for the LNG Plant site workforce.

EMPNG waste contractor, Total Waste Management, also received an honourable mention for its commitment to grow the business and further develop its specialised operational and technical capability to provide more employment opportunities for Papua New Guinean citizens.



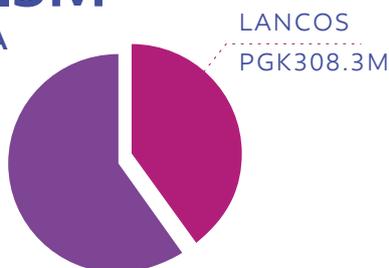
**HESL wins 'Best National Content Contribution of the Year Award'**

**2020 PERFORMANCE HIGHLIGHTS**

**SUPPLIERS**

**PGK817.3M**

SPENT ON PAPUA NEW GUINEAN SERVICES



**211**

LOCAL BUSINESSES CONTRACTED

**196**

NON-LANCO PNG BUSINESSES

LANCOS

**15**

# 5



EMPNG works with communities, government and non-government organisations to support inclusive and sustainable community initiatives with the shared value of building resilient and empowered communities.

## 5.1 Strategic community investment

EMPNG's strategic community investment programs support sustainable community and economic development through education, health, livelihood support, law and justice, environment awareness, key infrastructure improvements and community-based initiatives.

These activities are conducted in accordance with their relevant geographic area, which covers:

- local area programs in communities impacted by PNG LNG
- impacted provinces – programs that support initiatives at the provincial level and include activities aligned with provincial and local-level governments and development partners
- national programs that include broader scale capacity building projects and support projects at provincial and local levels.

During 2020, EMPNG invested PGK8.4 million (USD2.4 million) in the community through contributions, sponsorships, in-kind support and community-based projects. An additional PGK57.4 million (USD16.4 million) was invested in local infrastructure through infrastructure tax credit projects.

EMPNG has invested some PGK10 billion (USD2.9 billion) in community initiatives and local infrastructure since construction began.

### 5.1.1 Local area programs

Local area programs are conducted in partnership with communities to deliver sustainable agricultural outcomes. Training and business development opportunities are also provided for women, quality education for school students and support for community-based health and wellbeing initiatives.

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

EMPNG has renewed its contract with ANU Enterprise Proprietary Limited to continue the Community Livelihood Improvement Project, which began in 2015. The Project is helping to provide financial independence and improve standards of living for communities in Hides, Juni, Nogoli, Angore and Komo through training and support in areas such as nutrition, financial literacy and farming techniques.

To date, EMPNG has invested almost PGK17 million (USD4.8 million) in these communities through the Project. For example, the Pajja Iba Women's Agri Business Group Inc. has achieved a contract to provide fresh produce to the Hides Alliance Group, which is responsible for catering services at the HGCP. Leader of the Pajja Iba Women's Agri Business Group Inc., Serah Tindipaja, and her fellow group members have been able to secure a reliable income through this contract to support their families. The Pajja Iba Women's Agri Business Group Inc. is among community groups and local community members that have earned more than PGK537,000 from fresh produce sales to the Hides Alliance Group, since the start of the Community Livelihood Improvement Project.

EMPNG is helping alleviate housing issues for Upstream area teachers with funding provided in 2020 for a new teacher's house at Kutubu Secondary School.

Since 2018, EMPNG has supported the construction of five new staff houses for Upstream area schools. This is in addition to providing new classrooms for schools in the Upstream area. The combination of teacher accommodation and classrooms is helping to improve the quality of education for students in this area.

#### HIGHLIGHT

### NEW FACILITIES FOR ANGORE COMMUNITIES

A cooperative effort between community members, local landowners and EMPNG has resulted in the construction of three *haus wins* and the installation of nine rainwater catchment tanks across 12 Angore communities. A *haus win* is a sheltered community meeting place with a water tank for the provision of fresh rainwater.

These new facilities are providing community meeting places and easier access to clean water for people who live and work in Angore and surrounding communities. Previously, Angore area families had to walk significant distances to collect water for their households, with limited access to a clean water supply.

New sanitation facilities have been provided by EMPNG to Tugupawi Primary School in the Angore area to replace facilities damaged in the 2018 earthquake. EMPNG also worked with the Angore community during 2020 to engage two buses that are now being used to safely transport Angore children to school.



One of three new Angore *haus wins* that provide both a clean water source and gathering place for communities

Komo received an upgraded sports field from EMPNG and Lanco, HGDC during the year. The new sports field will help local players develop their football skills to become future members of the PNG LNG Kumuls rugby league team, of which EMPNG is a sponsor.

EMPNG has also provided rugby jerseys and playing equipment to the Komo Rugby Football League Association.



**Handover of the upgraded sports field at Komo**

In March, Komo’s first all-female rugby league team took to the field.

In late September, EMPNG supported a football coaching and training clinic for men’s and women’s teams delivered by SP PNG Hunters team coach and former player for the PNG LNG Kumuls, Michael Marum.

EMPNG sponsored the inaugural Komo Cultural Festival held in December. The Festival showcased cultural displays from villages throughout the Hela Province.



**Woman attending the Komo Cultural Festival in traditional mourning dress specifically reserved for mothers who have lost a son**

*LNG Plant site*

Papa Village has a new community resource centre funded by EMPNG and constructed by Lanco, Laba Holdings Limited. The centre will provide a meeting place for youth groups, church groups and women’s groups and encourage the development of community-based businesses. EMPNG has also funded the construction of a new classroom for Porebada Elementary School.

Redscar High School and Lea Lea Primary School have each received a new, fully furnished staff house with funding support from EMPNG. These staff houses will allow teachers, who previously had a long commute to school, to live much closer to their work location.

EMPNG has supported Redscar High School and Lea Lea Primary School since 2014 with the building and renovation of staff houses and classrooms, as well as the construction of new sanitation facilities.



**EMPNG LNG Plant Manager, Alyssa Warner (left), hands over the new staff house to Redscar High School**

Boera Village primary and elementary schools received a new fence in September funded by EMPNG and constructed by Lanco, Laba Holdings Limited. The fence will help protect these schools from trespassing, theft and vandalism.



**Handover of a new school fence for Boera Primary School**

Twelve women were among 43 participants who attended a Hiri West rugby league coaching and training clinic at Papa Village in November. The three-day clinic was organised with support from EMPNG and delivered by SP PNG Hunters coach, Michael Marum.

EMPNG also helped the Boera Rugby League Association host a week-long Edai Siabo Cup Tournament from 30 November, which involved players and supporters from Boera, Papa, Lea Lea and Porebada villages and surrounding areas.

EMPNG funded a community health initiative conducted by Rotarians Against Malaria during 2020 to determine the presence of malaria in the LNG Plant site villages of Papa, Lea Lea, Boera and Porebada, and surrounding areas. The malaria mapping initiative concluded that the presence of malaria remained low in these communities.

*Community Infrastructure Trust Fund projects*

The Mineral Resources Development Company Limited (MRDC), which distributes landowner royalty payments derived from PNG LNG production, provided 25 new dinghies complete with outboard motors, life jackets and accessories worth PGK660,000 (USD188,100) to Central Province villages during 2020 for community and church use.

Boera Primary School also gained new teacher housing to accommodate four teachers, and a new school truck funded by landowner royalty payments derived from PNG LNG production. Papa Primary School received teacher housing for four teachers, also funded through landowner royalty payments.



**The new teacher’s housing for Papa Primary School**

Construction of the teacher housing for Boera and Papa primary schools, and the purchase of the new school truck for Boera Primary School, was facilitated through the MRDC and administered through the Community Infrastructure Trust Fund.

*5.1.2 Provincial programs*

EMPNG is working closely with the Hela Provincial Health Authority to improve long-term community healthcare outcomes through the construction of a new sterilisation building and the installation of two 400-litre steam sterilisation machines at Tari General Hospital.



**Tari General Hospital staff operate a new steralisation machine provided through EMPNG’s support**

Supporting up to 6000 patients each year, Tari General Hospital is relying on the new sterilisation machines to clean medical equipment used across surgical operations and the emergency department to improve infection control procedures. The new sterilisation building and steam sterilisation units are anticipated to increase the hospital’s capacity to treat more patients by speeding up the sterilisation process between procedures.

In addition to the new building and steam sterilisation machines, four large containers with cleaning chemicals, wheelie bins, portable toilets and folding beds were donated to the hospital. EMPNG has supported Tari General Hospital since 2013 with medical equipment and supplies, staff training, maintenance support and infrastructure upgrades; including water tanks, water and wastewater treatment plants and power generators.

*5.1.3 National programs*

The Port Moresby Nature Park has celebrated a milestone with the completion of the five-year Head Start conservation program funded by EMPNG and delivered in partnership with the University of Canberra in Australia, Kikori River Catchment Area landowners and relevant authorities, to protect pig-nosed turtles (*Carettochelys insculpta*), or *piku*. Refer to Section 6.1 Biodiversity Offset Program for further information.



**Endangered *piku* are given a better chance at survival through the Head Start conservation program**

In addition to finalising the pig-nosed turtle conservation program, the Port Moresby Nature Park has added a *dubu* to its collection of cultural exhibits. The *dubu* is a large platform built by the Motu Koita people to hold food and provide a place to perform dances during special occasions. During festivities, the *dubu* posts are decorated with sugarcane, yams, bananas, betelnut and meat for distribution to guests at the end of the occasion. EMPNG has provided more than PGK3.7 million (USD1 million) to support the Nature Park over the past decade.

Due to COVID-19 restrictions, EMPNG was unable to conduct its annual World Environment Day and World Wildlife Day community-based events in 2020.

To commemorate these days, EMPNG and the Port Moresby Nature Park were interviewed on Papua New Guinea’s popular FM100 radio program about environmental initiatives that are underway to help preserve the nation’s natural wonders for future generations.



**From left: EMPNG Senior Biodiversity Advisor, Banak Gamui; EMPNG Community Development Support Lead, Debbie Maraki; Port Moresby Nature Park Education Manager, Shirley Mogi and FM100 Host, Douglas Dimagi, talk about World Environment Day**

Forty students from the Hela, Southern Highlands, Gulf and Central provinces have been awarded scholarships as part of the 2020 Business and Professional Women’s Association PNG LNG In-Country Scholarships Program for Higher Education in Papua New Guinea. The students come from 23 educational institutions including high schools, vocational schools, technical colleges and universities. The Scholarships Program received 729 applicants.

During 2020, the first 11 scholarship recipients of the PNG LNG In-Country Scholarships Program graduated from their courses. Seven of these students graduated from high schools and four from tertiary studies. They will become founding members of the Business and Professional Women’s Association PNG LNG In-Country Scholarships Program alumni network.



**Student Alfy Pule graduates with a Diploma in Business Studies and becomes a founding member of the PNG LNG In-Country Scholarships Program alumni**

The Advancing PNG: Women Leaders Network, comprised of alumni from the ExxonMobil-supported Centre for Development and Population Activities Global Women

in Management (GWIM) program, is building women’s empowerment programs.

During 2020, the Network launched a member credit scheme in partnership with the Ambumangre Micro Credit Scheme. The Scheme will help more than 50 different communities access funds in support of women’s economic empowerment.

The Network has also partnered with the Helaro Hope Association to deliver Hiri Motu pottery workshops for women in coastal villages. The workshops are intended to keep this important culture alive for future generations and to create economic opportunities for women.

**HIGHLIGHT**

**RUTH JOINS OBAMA FOUNDATION SCHOLARS PROGRAM**

PNG Tribal Foundation Director of Development, Ruth Kissam, was one of 11 leaders selected from around 20,000 worldwide participate in the Obama Foundation Scholars Program in the United States.

An alumni of the GWIM program, Ruth was selected for inspiring positive change in Papua New Guinean communities.

She previously participated in the GWIM program held in Jakarta, Indonesia during the tenth anniversary of the program in Papua New Guinea in 2016. Ruth was among four GWIM alumni who were chosen to return to Washington DC, United States, in 2017 for follow-up training to build their skills and capacity to design and facilitate similar programs in Papua New Guinea. She is among only 13 GWIM alumni who have been selected from almost 900 alumni worldwide to attend this specialised training.

Ruth is an advocate for maternal health, education, women and gender issues in Papua New Guinea.



**PNG Tribal Foundation Director of Development, Ruth Kissam joins the Obama Foundation Scholars Program**



**Helaro Hope Association President and Co-founder, Dobi Isaiah (far left), with local women participating in a pottery workshop, which follows traditional Motuan practices in the village of Porebada**

A small business group called Diari Tailoring was awarded a PGK18,000 (USD5130) contract from Lanco, Laba Holdings Limited in 2020 to produce uniforms for ‘Meet and Greet’ workers. Women who were trained through EMPNG’s Sewing Machine Care and Advanced Tailoring program will help this small business fulfil the order.

EMPNG is maintaining ongoing support for Buk bilong Pikinini in its mission to increase literacy rates through the establishment of community-based libraries that give children access to reading materials.

During 2020, EMPNG and Buk bilong Pikinini launched an early childhood development app, which will be used by Buk bilong Pikinini’s library learning centres to help teachers use technology to support children’s learning.

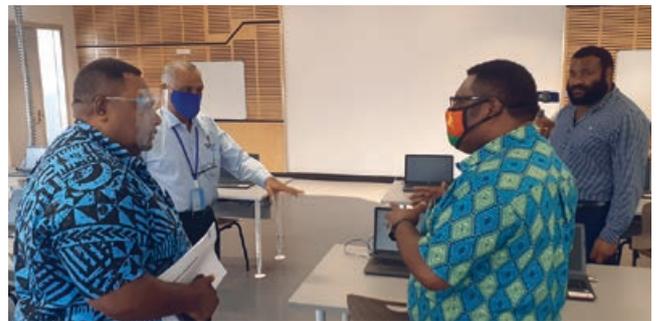


Image courtesy of Buk bilong Pikinini

**Children using Buk bilong Pikinini’s new early childhood development app**

EMPNG has supported Buk bilong Pikinini since 2011 with the donation of more than 15,000 books, construction of two library learning centres and many hours of EMPNG volunteer time to help the organisation grow and continue to build strong foundations for childhood learning in Papua New Guinea.

Forty laptop computers have been donated by EMPNG to the University of Papua New Guinea’s School of Business and Public Policy. The laptops will help students complete their studies and support e-learning.



**From left: University of Papua New Guinea representatives, Dr Lawrence Sause; Prof Lekshmi Pillai; and James Wapyer with EMPNG Public Policy and Issues Manager, Sam Koyama, taking a tour of the School of Business and Public Policy IT Lab**

In September, EMPNG conducted an online geology lecture for University of Papua New Guinea geoscience students. The program is held annually and normally conducted at EMPNG’s Port Moresby office. Due to pandemic restrictions, the 2020 session was hosted online. The lecture included a broad overview of ExxonMobil worldwide operations and the geoscience application of one of ExxonMobil’s discovery offshore locations.

To commemorate Daffodil Day in August, Papua New Guinea’s Cancer Foundation and EMPNG representatives delivered the Healthy Teens program to Grade 6, 7 and 8 students from Lea Lea Primary School.



**Health educator, Keith Gande, delivers the Healthy Teens program to Lea Lea Primary School students**

The Healthy Teens program teaches children about healthy dietary and lifestyle choices to reduce their risk of cancer. Students and educators wore face masks and complied with social distancing requirements during these sessions. EMPNG has supported the Healthy Teens program for more than four years.

## 5.2 Volunteering

Most EMPNG volunteer activities during 2020 focused on supporting Papua New Guinea’s pandemic response.



**EMPNG volunteers pack and load donated food items for Cheshire disAbility Services**

Despite the challenges presented by travel restrictions and lockdowns, more than 80 EMPNG workers contributed 300

volunteer hours during the year. This included supporting Papua New Guinea’s National Department of Health with sorting boxes of personal protective equipment for Papua New Guinean frontline health workers, and collecting food donations for health services.



**EMPNG volunteers support the National Department of Health with personal protective equipment packages for frontline health workers**

As part of National Literacy Week in September, EMPNG volunteers helped Buk bilong Pikinini library teachers build pretend computers made from cardboard and also read books to school students.

In December, Buk bilong Pikinini launched Digital Teacher Training, with 40 teachers participating in the program.



Image courtesy of Buk bilong Pikinini

**EMPNG volunteers assisted with Buk bilong Pikinini’s Digital Teacher Training program in December**

**HIGHLIGHT**

**SHARING THE CHRISTMAS SPIRIT**

On Christmas Day, a team of volunteers at the HGCP worked all day to build 29 school desks for Juni Primary School in the Hela Province. The volunteers also held a desk painting competition to deliver colourful and inspiring desks for the school students.



**EMPNG volunteers Elton Sekewa, Paul Oge and Jeremy Mogule, spend Christmas Day building school desks at the HGCP**



**EMPNG volunteers painting school desks for donation**

EMPNG volunteers assisted the trainer with responding to trainee questions about basic computer functions.

Also, in December, EMPNG volunteers from the Port Moresby office and HGCP visited Tari General Hospital to donate Christmas gifts and food hampers to patients.



**EMPNG volunteer, Tuem Narewec, at Tari General Hospital during the presentation of Christmas gifts for patients**

EMPNG continues to support the ExxonMobil Science Ambassador Program, which was introduced to Papua New Guinea in 2013 and encourages high school students to consider careers in science, technology, engineering and mathematics through interactive educational activities. The Program involves EMPNG volunteers visiting schools to conduct practical experiments and lessons on topics such as rocks and geology and the origins of oil and gas. Due to pandemic-related restrictions and lockdowns throughout 2020, the Program could not be delivered to schools during the year.

## CASE STUDY

## SUPPORTING PAPUA NEW GUINEA'S COVID-19 RESPONSE

Like all countries around the world, Papua New Guinea was significantly impacted by the COVID-19 pandemic. EMPNG worked with local authorities and non-government organisations to support the pandemic response efforts. This included:

- EMPNG donated life-saving medical equipment such as defibrillators and ventilators to the National Department of Health's National COVID-19 Preparedness Taskforce. The equipment was used for an isolation facility at Port Moresby General Hospital to manage confirmed coronavirus cases
- personal protective equipment was donated to support National Department of Health frontline workers, while EMPNG also disseminated more than 2000 messages and posters as part of COVID-19 prevention awareness-raising programs with communities in the Hela, Southern Highlands and Central provinces. In addition, EMPNG donated general medical supplies such as echocardiogram electrodes, syringes, nebulizer masks, snake anti-venom and scalpels to the National Department of Health
- EMPNG provided logistical support to transport medical supplies from Port Moresby into the Hela Province, as well as COVID-19 test samples to the Papua New Guinea Institute of Medical Research
- EMPNG and Chiyoda Oceania Proprietary Limited donated triage tents, infra-red thermometers and surgical masks to the Central Province Health Authority
- twenty infra-red thermometers and 2700 reusable face masks were donated to 19 schools in Papa, Lea Lea, Boera and Porebada, as well as surrounding communities. The masks were sewn by women from the LNG Plant site villages, who learned advanced tailoring skills through EMPNG sponsored courses. Hand washing stations were also donated to 17 LNG Plant site area schools
- EMPNG engaged nine local tailoring businesses to manufacture 10,000 face masks for its workers
- more than 10 tonnes of food supplies were donated to health clinics in the Hela Province to support frontline workers. The donation started as an employee-driven project and was bolstered by the Company. Another 250 boxes of food were donated to Bel isi PNG and Cheshire disAbility Services to support local communities.

As well as donations to local hospitals and communities, EMPNG followed guidance from the Papua New Guinea Government to implement safe workplace measures such as social distancing, enhanced hygiene practices and remote work.

EMPNG also worked with the Department of Foreign Affairs of Papua New Guinea, the Philippine Embassy in Papua New Guinea, and Air Niugini to repatriate citizens unable to travel home due to international border closures. A charter flight was organised to return 40 Philippine citizens to Manila. Passengers included PNG LNG contractors and a post-operative patient who was able to return home to continue their recovery. The return flight to Port Moresby repatriated 38 Papua New Guinean students and missionaries who underwent a mandatory 14-day quarantine at a government selected Port Moresby hotel before returning home to their families.



**Bogi Literacy School children receiving donations of face masks and other health and medical supplies**



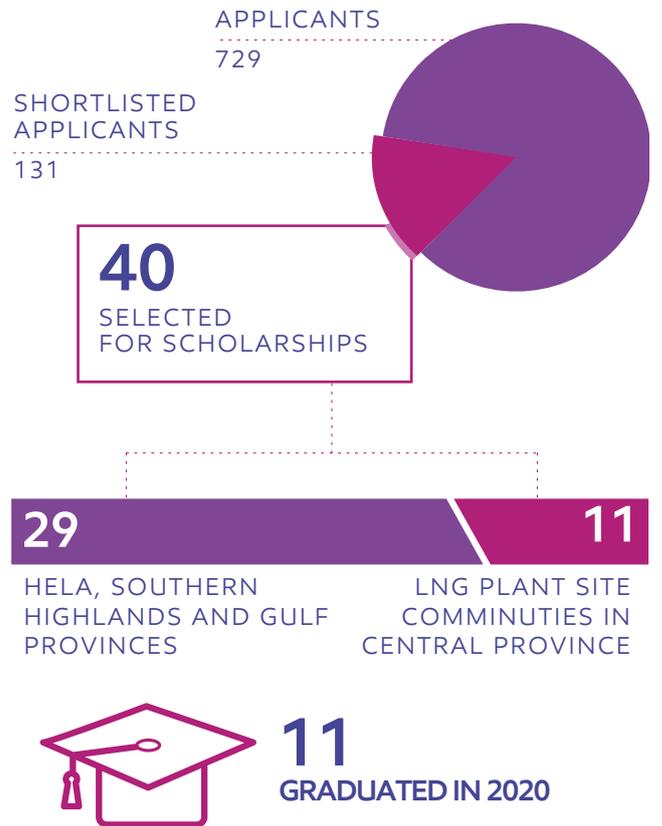
**EMPNG engaged local tailoring businesses to make face masks for workers during COVID-19**

2020 PERFORMANCE HIGHLIGHTS

COMMUNITY



2020 BUSINESS AND PROFESSIONAL WOMEN'S ASSOCIATION PNG LNG IN-COUNTRY SCHOLARSHIP



COVID-19 COMMUNITY SUPPORT

**10** TONNES OF FOOD DONATED TO HEALTH CLINICS IN THE HELA PROVINCE TO SUPPORT FRONTLINE WORKERS

**2000** COVID-19 POSTERS AND MESSAGES PRINTED FOR COMMUNITY AWARENESS

**2700** REUSABLE FACE MASKS SEWN BY WOMEN FROM THE FOUR LNG PLANT SITE VILLAGES WHO LEARNED ADVANCED TAILORING SKILLS THROUGH EMPNG-SPONSORED COURSES

**19** SCHOOLS

**38** REPATRIATED PAPUA NEW GUINEAN CITIZENS FROM MANILA



**40** RETURNED PHILIPPINE CITIZENS TO MANILA

**9** LOCAL TAILORING BUSINESSES MANUFACTURED



**10,000** REUSABLE FACE MASKS FOR WORKERS



**PART B**



## ENVIRONMENT

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

To achieve this, EMPNG operates in accordance with three EMPs and the Biodiversity Strategy.

The EMPs 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.

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 construction of PNG LNG with equivalent biodiversity gains.

6



# BIODIVERSITY

Through its over-arching Biodiversity Strategy, EMPNG works with local communities to conserve the unique biodiversity value of Papua New Guinea.

EMPNG's Biodiversity Strategy includes a Biodiversity Offset Program that consists of five components and a Biodiversity Implementation and Monitoring Program that outlines Programmed Monitoring Activities (PMAs) EMPNG is undertaking to achieve the Strategy's objectives.

## 6.1 Biodiversity Offset Program

The Biodiversity Offset Program components are:

- Component 1: Protected area planning
- Component 2: Support the National Biodiversity Strategy and Action Plan
- Component 3: Build conservation capacity
- Component 4: Enhance existing protected areas
- Component 5: Establish new protected areas.

Components 1, 2 and 3 focus on capacity building at both national and regional levels to enable the foundation for sustained conservation outcomes. Components 4 and 5 deliver conservation outcomes on the ground by enhancing the protection of existing conservation areas or by establishing new protected areas.

### *Component 1: Protected area planning*

Component 1 was completed in 2017 with the finalisation of a report developed through engagement with the Wildlife Conservation Society. The implementation of actions from the report are being progressed through the establishment of new protected areas under Component 5.



**Cover of the Wildlife Conservation Society report, which concluded Component 1 of the Biodiversity Offset Program**

### *Component 2: Support the National Biodiversity Strategy and Action Plan*

Component 2 aims to support the Papua New Guinea Conservation and Environment Protection Authority with its implementation of the National Biodiversity Strategy and Action Plan, which was launched in 2007. The National Biodiversity Strategy and Action Plan enables Papua New Guinea to meet its obligations under the *Convention on Biological Diversity* and other multilateral agreements.

This component has involved regular Communicating Conservation meetings with conservation representatives from the Papua New Guinean Government, local communities, non-government organisations and academia, as well as publication of the *Biodiversity Digest* newsletter by the Mama Graun Conservation Trust Fund. Due to COVID-19 restrictions, this component was unable to progress during 2020.

### *Component 3: Build conservation capacity*

Component 3 focuses on building the technical capacity of conservation professionals and enhancing community capacity in conservation through the Enhancing Conservation Capacity Program, which expands on Papua New Guinea's existing Strengthening Conservation Capacity Programme. During 2020, EMPNG worked on plans to engage additional Papua New Guinean business partners and academic institutions to further develop the Enhancing Conservation Capacity Program.

### *Component 4: Enhance existing protected areas*

Component 4 involves enhancing the management effectiveness of the Lake Kutubu Wildlife Management Area (WMA), which is managed by the Lake Kutubu WMA Committee. The Committee is comprised of community members, so this component focuses on building the Committee's conservation capacity.

Despite the challenges of the pandemic, most planned Component 4 activities were completed during 2020.

Three quarterly Lake Kutubu WMA Committee meetings were conducted and the Lake Kutubu livelihood development program, funded through the United Nations Development Programme small grants program, progressed during the year. Crop rotation training, chicken farming training, deforestation awareness and a tilapia and endemic fish species monitoring survey were completed by the Lake Kutubu WMA Committee as part of the livelihood program during 2020.

To commemorate World Environment Day in June, the Lake Kutubu WMA Committee raised awareness about waste management by erecting signs at Inu Station, Kaimari, Tugiri and Gesege villages. The signs conveyed the message *No ken tromoi pipia insait long Lake Kutubu WMA*, which translates to 'Do not litter within the Lake Kutubu WMA'.

The Lake Kutubu WMA Committee and local communities achieved a milestone during the year, with 22 Committee members completing the final two modules of conservation training delivered by mammal expert Enock Kale.



An EMPNG Village Liaison Officer conducting COVID-safe community engagement in the Lower Kikori region

The final two modules covered mammal and plant survey techniques.

**Component 5: Establish new protected areas**

Component 5 aims to help establish new community-based protected areas in the Upstream area that are representative of the biodiversity values impacted by EMPNG.

Due to the pandemic, EMPNG adjusted its community engagement program during 2020, which involved one extended community engagement activity across 13 communities over 20 days. During this process, EMPNG workers implemented COVID-safe practices to mitigate the risk of infection.

Through these engagements, 10 communities completed resource mapping and are now ready to establish conservation deeds for areas identified for conservation. These communities are: Goare, Bisi, Aidi'io, Kemei, Mubagovo, Dopima, Goro, Aimahe, Babeio and Doibo.

In July, a conservation committee was formed for the Lower Kikori region and involved community leaders from the Lower Kikori Delta, including representatives from the East and West Kikori local-level governments.

For the first time, communities that were not part of the Barging Route Waterways Memorandum of Understanding signed between EMPNG and eight Kikori River tribes in 2010, showed interest in dedicating their land to support conservation initiatives.

More than 500 Kerewo tribe members from Goare, Mubagovo, Aiedio, Aimahe, Goro, Dopima and Kemei communities participated in EMPNG engagements during

the year, with Aimahe and Goro villages undertaking community resource mapping. The Kerewo coastal area is a known barramundi breeding habitat, so community engagements included information about the need to conserve the local native fish population.

EMPNG conducted a focused high elevation montane biodiversity program at Hides Ridge during 2020, with initial community engagements in October. The engagements involved educating more than 150 EMPNG workers from the Hides Ridge area and eight communities, including eight primary schools, about local biodiversity values.

During 2020, pig-nosed turtles raised through the Port Moresby Nature Park's Head Start conservation program were returned to their original home at Wau Creek in the Lower Kikori region. The program involved raising some 45 turtle eggs at the Nature Park, which were rescued from Wau Creek, with the intention of returning them back to the creek as adult turtles.

Pig-nosed turtles are a freshwater species native to Northern Australia, Indonesian West Papua and Papua New Guinea. They are categorised as endangered on the International Union for Conservation of Nature Red List of Threatened Species due primarily to illegal smuggling and overhunting. Their ability to survive in the wild from birth is one percent because of their small size and abundance of predators, including humans. The Head Start program increases the turtle's chance of survival to 30 percent.

In August 2019, the first 15 turtles from the program were released back into the wild once they had reached a size of approximately 15 centimetres in shell length.



### Wau Creek community members officially welcome the return of the remaining *piku*

Following the release of the remaining turtles in 2020, Wau Creek residents expressed interest in creating their own in-situ turtle nursery to maintain ongoing protection of the *piku* species.



### Wau Creek landowner, Frank John (left), who dedicated land at his property to protect pig-nosed turtles, receives copies of the biodiversity survey report from EMPNG Biodiversity and Cultural Heritage Advisor, Julia Hagoria

## 6.2 Biodiversity Implementation and Monitoring Program

The Biodiversity Implementation and Monitoring Program is supported through four PMAs:

- PMA1 – Remote Sensing of Broad-scale Land Cover involves using remote sensing imagery to determine the extent of broad-scale changes to land cover as a result of natural or anthropogenic processes that include direct and indirect residual impacts from PNG LNG.
- PMA2 – Condition Surveys of Focal Habitats and Significant Ecological Features uses field surveys to collect data to monitor the condition of focal habitats and significant ecological features that had been avoided during construction.
- PMA3 – Biodiversity Surveys involves biodiversity field surveys that provide flora and fauna data to enable trending of abundance in and around the areas affected by PNG LNG.

- PMA4 – Efficacy of Biodiversity Offsets monitors progress of the five components of the Biodiversity Offset Program to enable EMPNG to evaluate whether Objective 4 of the Biodiversity Strategy (identify, measure and offset significant residual impacts) is being achieved.

Despite the impact of COVID-19, progress was made on most of the PMAs during 2020.

### *PMA1 – Remote Sensing of Broad-scale Land Cover*

Satellite imagery was acquired in 2019, and an analysis conducted in 2020, to understand the evolution of the landscape around PNG LNG since the previous review in 2017. The imagery indicated no notable trends in broad-scale forest degradation as a result of PNG LNG or other human activity.

Ground-truthing was completed for priority inspection zones and confirmed some disturbances had been caused by communities, such as the erection of a small dwelling and garden near Hides Wellpad B.

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

Due to travel and workplace restrictions caused by COVID-19, condition surveys planned for 2020 were postponed to 2021.

### *PMA3 – Biodiversity Surveys*

The biennial PMA3 monitoring survey was completed during 2019 and included the collection of imagery from camera traps in Hides Ridge and Moro. An analysis of the survey data was conducted in 2020 and found:

- thirty-seven known species of frogs at Hides Ridge and the Agogo Range near Moro, of which 15 were previously undescribed. Four new frog species recorded in 2015 and 2017 were formerly described and published in scientific literature during 2020
- more than 80 species of birds and mammals were documented by camera traps, of which six were new records for the survey areas. The Shaw Mayer's shrew mouse (*Pseudohydromys ellermani*) was recorded in the Kikori Basin for the first time. Since the start of production, EMPNG has documented at least 94 vertebrate species using camera traps, including: 59 bird species; 34 mammal species; and one reptile species in the Hides Ridge and Moro survey areas. In terms of small rodents; distance from the pipeline Right of Way (ROW), elevation and year of survey had no impact on the number of species and individuals recorded
- twenty bat species were recorded during the 2019 monitoring survey, which is consistent with previous surveys. Some 27 bat species have been recorded in the PMA3 study area since the start of these surveys in 2015. Records so far show that Moro has a significantly higher number of bat species than the Hides Ridge area.

**HIGHLIGHT****NEW FROG SPECIES UNCOVERED**

A new frog species found in Kikori during biodiversity monitoring has been named after EMPNG Socioeconomic Advisor, Anita Mosby, in recognition of her commitment to biodiversity in Papua New Guinea.

The new species, *Copiula mosbyae*, is located in low altitudes in the Gulf Province. It is medium-sized at 27 to 30 millimetres in length. The male frogs call during and after rain from hidden positions in leaf litter on the rainforest floor.

Anita said she felt honoured to have a frog named after her.

“Ensuring that we run effective environmental and socioeconomic programs is a core part of my role at EMPNG. Discovering a new species is simply thrilling.”

Anita recently changed roles from Biodiversity Advisor to Socioeconomic Advisor and is now working closely with communities to support their traditional connection to the environment.

“In Papua New Guinea, biodiversity and cultural identity are very closely linked,” Anita said.



The new frog species, *Copiula mosbyae*



Former EMPNG Biodiversity Advisor, Anita Mosby, is the namesake of the new frog species *Copiula mosbyae*

**PMA4 – Efficacy of Biodiversity Offsets**

Consistent with the continuous improvement process described in the Biodiversity Implementation and Monitoring Program and the Production ESMP, the PMA4 protocol was revised during 2020.

The revised PMA4 protocol places an emphasis on the trajectory of the accumulated biodiversity offset gains against offset targets, which enables intervention if offset gains are not accruing at a sufficient rate. It also recognises that offset gains will not be a linear function but a step function, driven by the addition of new protected areas to the Biodiversity Offset Program.

The PMA4 performance indicators were also expanded to better align with Biodiversity Offset Program component activities and a revised monitoring program approach.

The monitoring program has been refined to reflect both the institutional and community-based activities that are pre-requisites for an enduring offset program. The revised monitoring approach establishes performance indicators and metrics for key work activities, simplifies the approach to tracking progress and includes a method for determining whether the required offset outcomes are on target to achieve no net loss to biodiversity values in the Upstream area.

CASE STUDY

NEW WI-FI AND NEW FAMILY

EMPNG workers who were installing wi-fi at the LNG Plant made a surprise discovery of a nest full of Torresian crow (*Corvus orru*) eggs at the top of the LNG Plant. The Torresian crow is a large bird that commonly nests in developed areas. Eggs incubate for 20 days and the adult male helps the young for up to 40 days before they leave the nest.

The new wi-fi connection is allowing real-time communications between LNG Plant operators, plant supervisors and engineering specialists from around the world, while not impacting the Torresian crow's nesting location. All of the Torresian crow's eggs hatched safely.



The Torresian crow's eggs before and after hatching

2020 PERFORMANCE HIGHLIGHTS

BIODIVERSITY



**1** EXTENDED ENGAGEMENT



**13** COMMUNITIES ENGAGED



**20** DAYS OF ENGAGEMENT

TURTLE EGGS RAISED THROUGH THE HEAD START CONSERVATION PROGRAM AT THE PORT MORESBY NATURE PARK



**22** LAKE KUTUBU WMA COMMITTEE MEMBERS COMPLETED CONSERVATION TRAINING

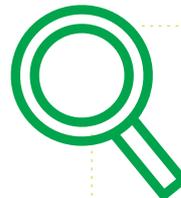
**3** LAKE KUTUBU WMA COMMITTEE MEETINGS HELD

**10** COMMUNITIES COMPLETED CONSERVATION RESOURCE MAPPING

**1** NEW CONSERVATION COMMITTEE FORMED

**500+** KEREWO TRIBE MEMBERS PARTICIPATED IN ENGAGEMENTS

PMA3 MONITORING SURVEY RESULTS



**80** SPECIES OF BIRDS AND MAMMALS IDENTIFIED

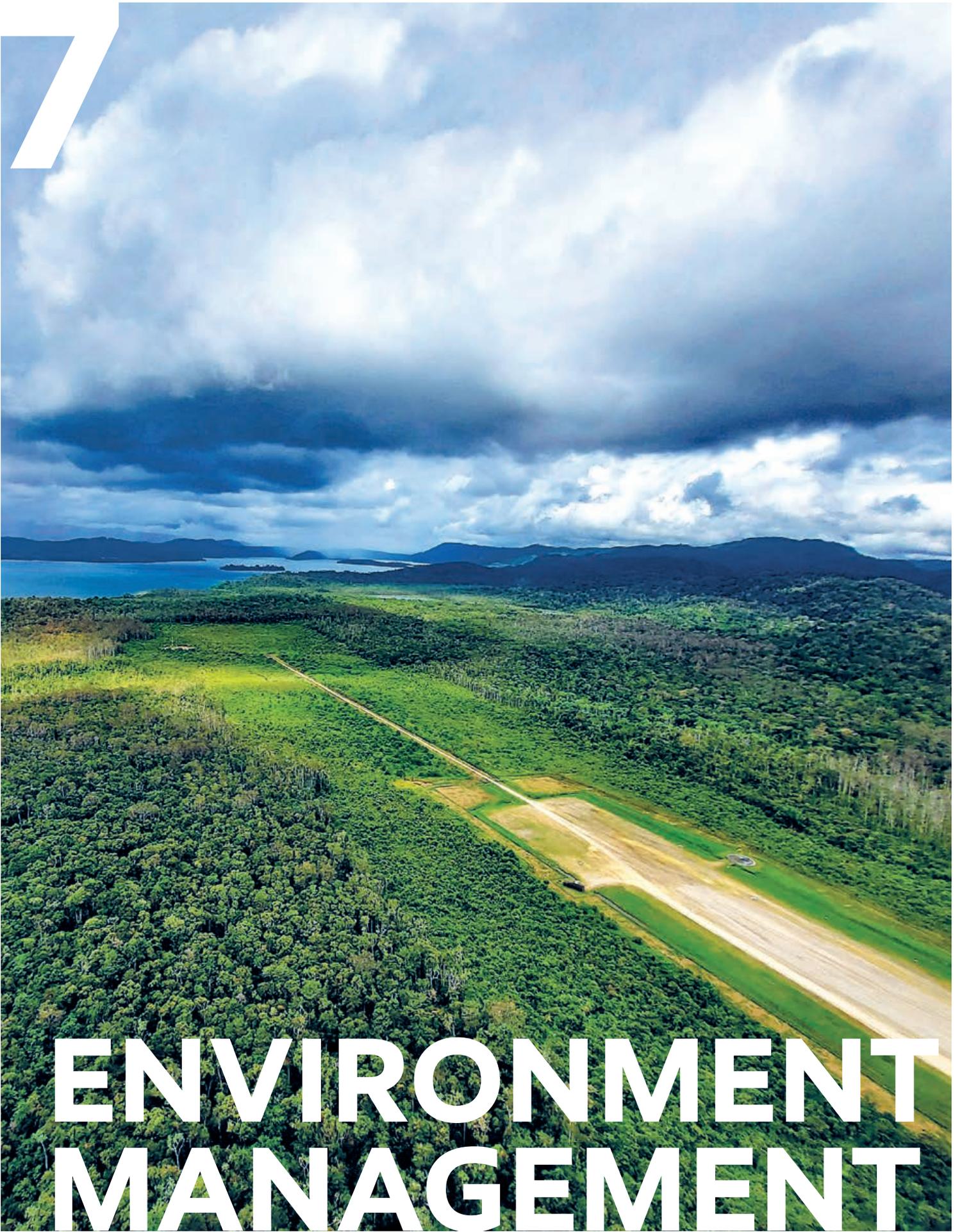
**37** KNOWN SPECIES OF FROGS IDENTIFIED, INCLUDING 15 SPECIES PREVIOUSLY UNDESCRIBED

**20** BAT SPECIES RECORDED

**6** NEWLY-IDENTIFIED SPECIES RECORDED

**4** NEW FROG SPECIES PUBLISHED IN SCIENTIFIC LITERATURE

**1** SHAW MAYER'S SHREW MOUSE DISCOVERED AT THE KIKORI BASIN FOR THE FIRST TIME



EMPNG is committed to continuous improvement in environmental management associated with its production facilities.

## 7.1 Air

During 2020, no air-related incidents were reported at any PNG LNG facility. Three near misses were recorded during the year.

Flaring emissions were reported at their lowest levels since the start of production because both the LNG Plant and HGCP maintained higher reliability performance that delivered operational efficiencies throughout the year. Hydrocarbon flaring volumes related to regular operations totalled 513 million standard cubic feet, which is a decrease of 60 million standard cubic feet compared to 2019.

EMPNG has approval from the Papua New Guinea Conservation and Environment Protection Authority to conduct the stack test program every three years if monitoring results are within criteria, or annually if not within criteria until the required criteria are met. A representative selection of stationary air emission sources is to be included in each stack testing program. Emissions sources tested include compressors, incinerators and power generators. Mobile emissions such as vehicles and heavy machinery are not included in the stack test program.

The planned 2020 stack testing program for three emissions sources was delayed due to COVID-19 restrictions. The stack testing program will be conducted once restrictions ease.

Total greenhouse gas emissions are calculated and reported on an annual basis. During 2020, PNG LNG generated approximately 2072 kilotonnes of carbon dioxide equivalent, which was primarily from gas turbine fuel consumption at the LNG Plant and HGCP.

## 7.2 Noise

No noise-related incidents or near misses were recorded at any PNG LNG facility during 2020.

EMPNG continues to conduct six-monthly noise monitoring during daylight and evening hours at worksites in the Upstream area and LNG Plant.



**Noise monitoring at the LNG Plant by trained EMPNG Field Environmental Advisors, Anzylyn Neil and Firman Aiyele**

All monitoring events showed that noise levels were within Environment Permit criteria.

## 7.3 Water

The amount of water extracted from groundwater, seawater and surface streams for production activities is monitored so that sustainable water use complies with permitted extraction volumes.

EMPNG regularly tests the quality of extracted water for consumption, in accordance with industrial hygiene requirements, and conducts wastewater testing to conform with Environment Permit requirements before discharge.

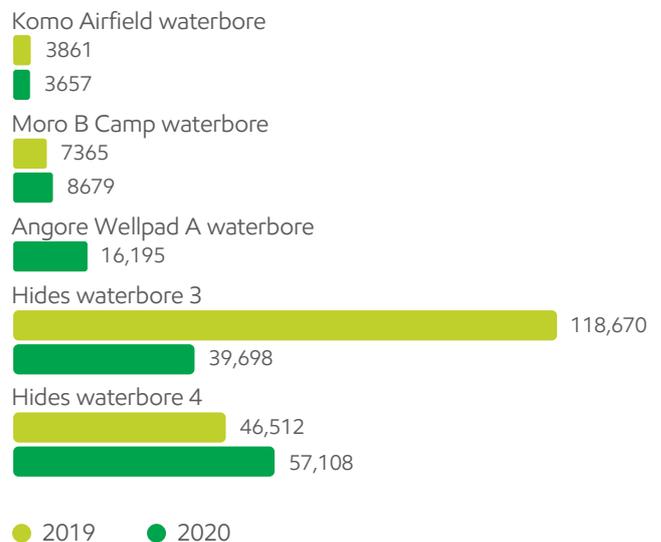
### 7.3.1 Consumption

Water is used for production process operations, worker camps, maintenance activities, dust suppression, safety showers and firewater systems.

EMPNG extracts freshwater from approved groundwater sources for Upstream area operations, while desalinated seawater is used for LNG Plant production activities. Freshwater volumes taken from each groundwater extraction source in the Upstream area during 2020 are shown in Figure 7.1.

**Figure 7.1 – Groundwater extraction**

VOLUME (KILOLITRES) BY EXTRACTION SOURCE



Approximately 125,330 kilolitres of groundwater was extracted for use in the Upstream area in 2020. This is a decrease of 51,070 kilolitres compared to 2019 due to a reduction in production activities associated with 'island mode' operations. No water was extracted from surface streams in 2020.

Approximately 581,400 kilolitres of seawater was extracted for the desalination plant at the LNG Plant, which generated almost 77,400 kilolitres of potable water for production use. This is consistent with 579,000 kilolitres extracted in 2019.

### 7.3.2 Water quality monitoring

Water quality of treatment plants and water retention systems form part of ongoing operational monitoring. Water is regularly tested to guide operational maintenance requirements and to monitor performance against EMPs. Where variations or exceedances are detected, a non-conformance is raised to enable identification and tracking through to the resolution of any issues and to assist operators in maintaining a balanced system.

During 2020, EMPNG recorded 20 Severity Level I water-related non-conformances and one Severity Level <0 incident. This is a decrease compared to the 27 Severity Level I non-conformances and four Severity Level <0 incidents recorded in 2019.

Water quality monitoring recorded two non-conformances for ammonia nitrogen exceedances at the Hides wastewater treatment plant. The first exceedance was due to a limitation with the plant's ability to efficiently process higher loads of wastewater. Permanent system improvements were completed in May, which included the replacement of an aeration pump and diffusers to increase the rate of denitrification required to process higher wastewater loads. The second exceedance occurred at the secondary Hides wastewater treatment plant, which was brought online in November 2019 to support processing of wastewater loads in the Upstream area. The secondary plant was taken offline in June after works were completed to boost the capacity of the primary Hides wastewater treatment plant.

Two non-conformances were recorded at the Moro B Camp wastewater treatment plant.



**Moro B Camp**

One of these was for an exceedance of oil and grease, and the other regarded elevated total suspended solids. An investigation into the oil and grease exceedance found it was due to a testing quality control issue. Subsequent testing showed levels were within Environment Permit criteria. The elevated total suspended solids exceedance was due to excess solids entering the wastewater treatment plant. These solids blocked the multi-media filtration unit and reduced the capacity of the unit to reduce solid content going into the final effluent discharge. The valve controller for the multi-media

filtration was damaged and limited the removal of total solids from the final effluent. Maintenance work was conducted at the wastewater treatment plant to rectify these issues and the system has returned to normal function.

The Angore wastewater treatment plant recorded one non-conformance for an exceedance of ammonia nitrogen at the end of pipe. This was caused by the wastewater treatment blower malfunctioning at the time samples were taken during scheduled monitoring. After corrective maintenance was conducted on the blower, follow-up sampling showed results were within discharge criteria.

Extensive works have been conducted since 2018 on sedimentation control measures to effectively manage exceedances of turbidity and total suspended solids at stormwater monitoring sites around the HGCP. This long-standing non-conformance was closed during 2020 when sampling showed all levels to be within stormwater discharge criteria. Internal performance monitoring in 2020 revealed that the initial sedimentation controls put in place required ongoing maintenance, resulting in a new non-conformance. Follow-up sampling after maintenance work recorded that all total suspended solids and turbidity levels had reduced for most stormwater sampling locations, except one. Further sampling will be conducted to monitor levels after the latest sedimentation control upgrade works have had time to settle.

As a result of a spill incident that occurred at the HGCP and caused elevated mercury levels in the retention pond in 2019, EMPNG is conducting ongoing monthly testing to monitor mercury levels in the process area.

One non-conformance for turbidity and total dissolved solids was recorded at the Hides Waste Management Facility stormwater pond during the year. An investigation of waterways linked to the pond showed the need for additional sedimentation controls. Follow-up sampling conducted after additional sediment controls were put in place showed results to be within stormwater discharge criteria.

Water quality monitoring at the LNG Plant dissolved air flotation unit found six non-conformances for oil and grease, total suspended solids and ammonia nitrogen exceedances. The elevated oil and grease, and total suspended solids were due to the unit's sand filter not functioning as normal. Maintenance was conducted to clear and flush the lines, which returned the unit to normal operations. A second issue was identified when one of two oily waste processing systems in the dissolved air flotation unit was offline for maintenance and insufficient time was given for recirculation to allow adequate filtration through a single operating system within the unit. The issue was corrected by allowing sufficient recirculation time prior to wastewater discharge to the retention pond while the second processing unit was undergoing maintenance. The elevated ammonia nitrogen levels were caused by issues with the unit's recycle pump, which were corrected with maintenance works. Follow-up sampling showed results were within oily wastewater discharge criteria.

Three non-conformances were reported for exceedances of oil and grease, pH and potassium at the LNG Plant's retention pond. The elevation in oil and grease was attributed to insufficient recirculation time given for oily waste in the dissolved air flotation unit to allow for sufficient filtering prior to discharge. The pH exceedance was caused by stagnant water inside the retention pond when the pond gates were closed, resulting in a build-up of algae. Corrective measures were undertaken to continuously adjust the pond gate and maintain an underflow without needing to completely close the gate. Following these adjustments, numerous sampling events showed pH levels to be within discharge criteria.

The potassium exceedance was caused by a build-up of potassium chloride inside the retention pond. Potassium chloride naturally occurs in seawater. The elevated potassium levels in the retention pond were most likely attributed to low rainfall that resulted in less dilution and a high evaporation rate of water from hot and dry weather. Compliance and verification monitoring conducted later in the year found elevated potassium, boron, selenium and chemical oxygen demand levels. Retention pond monitoring will continue in early 2021.

One Severity Level <0 incident was recorded at the LNG Plant mixing pit for an exceedance of potassium. This occurred because higher potassium levels from the retention pond discharged into the mixing pit. The retention pond gate was closed, and the mixing pit only received brine discharge. Compliance and verification monitoring conducted at the receiving environment in Caution Bay showed potassium results were within Environment Permit criteria. Subsequent compliance and verification monitoring of the mixing pit found that potassium levels had returned to below criteria.



**EMPNG Field Environmental Specialist, Firman Aiyele, conducts water sampling at an LNG Plant retention pond**

Exceedances of ammonia nitrogen, and oil and grease were recorded as three non-conformances for the LNG Plant site's

wastewater treatment plant during the year. An ammonia nitrogen exceedance was due to the presence of rainwater, which entered low-lying lift stations and impacted the denitrification process. This was corrected by building raised concrete berms to prevent further rainwater ingress.

Follow-up monitoring showed ammonia nitrogen results to be within discharge criteria. Another ammonia nitrogen exceedance was caused by an increase in effluent load, which was closely monitored to avoid causing an overload to the wastewater system. The oil and grease exceedance was the result of kitchen waste from a grease trap that had higher concentrations than normal. Compliance and verification monitoring in the receiving environment at Vaihua Creek showed all results to be within Environment Permit criteria.

One exceedance of turbidity was recorded as a non-conformance during annual stormwater monitoring at the LNG Plant. Extensive cleaning activities were in progress upstream of the drainage system during the sampling event. Follow-up sampling was conducted after the completion of soil stabilisation, with results from an approved third-party laboratory showing it was within criteria.

Groundwater monitoring was conducted at six-monthly intervals. Monitoring at the HGCP and Hides Waste Management Facility showed results were stable and within Environment Permit criteria, with no significant increase above applicable freshwater guidelines or baseline values. Planning progressed for the installation of two downgradient wells at the Hides Waste Management Facility.

Groundwater sampling at the LNG Plant showed inconsistent exceedances of barium and dissolved metals. A third-party expert has been engaged to analyse the inconsistent results and confirm the cause.

## 7.4 Materials management

EMPNG regularly reviews how it sources raw materials for production-related activities. With most projects deferred or cancelled due to COVID-19, the volume of raw materials sourced in 2020 significantly decreased compared to previous years.

During 2020, EMPNG purchased and used a total 2324 cubic metres of aggregate and gravel, 443 cubic metres of sand, 35 cubic metres of concrete, 125 cubic metres of timber, 14 cubic metres of rock and 30 cubic metres of road base.

Ninety-two percent of the aggregate and gravel was used for various activities in the Upstream area, including sinkhole repairs as part of Komo earthquake recovery works and maintenance and road upgrade works in the Hides area. The remaining eight percent was used at the LNG Plant site for the Dirio Gas & Power tie-in project and for surface irrigation works.

Other raw materials used in the Upstream area were purchased from third party suppliers and sourced from three previously approved quarries at Timalia, Mana/Hegero and Para. The Timalia and Mana/Hegero quarries are operated by Lancos under their own environment permits.

## 7.5 Waste management

EMPNG maintains an ongoing commitment to improving waste management processes and developing long-term waste management solutions at production facilities.

During 2020, a small general waste incinerator was procured for Moro B Camp and will be brought online in 2021. In the interim, incinerable non-restricted waste from the camp is being managed through Oil Search Limited under the existing southern waste synergy arrangement.



**Incinerator at Total Waste Management’s Roku facility**

Soil debris mixed with decomposed algae collected during cleaning of the LNG Plant retention pond in 2018 recorded levels of total petroleum hydrocarbons and zinc slightly above landfill criteria.

To reduce total petroleum hydrocarbons, the soil was aerated for more than 12 months. Follow-up sampling showed the soil met landfill and incineration requirements, so it will be progressively incinerated at an EMPNG approved third party facility.

Through waste reduction initiatives, including recycling, as well as a decrease in Angore Gathering System and earthquake recovery works, EMPNG achieved a 20 percent reduction in waste during 2020 compared to the previous year. More than 60 tonnes of used batteries from both the HGCP and LNG Plant site were sent to an approved Papua New Guinean facility for recycling in 2020. Another 200 tonnes of waste from the LNG Plant site, including scrap metal, was recycled during the year.

Approximately 160 tonnes of restricted waste is securely stored at the LNG Plant site, and some 350 tonnes of restricted waste securely stored at the Hides Waste Management Facility, while awaiting appropriate disposal at an approved third party facility. This waste predominantly consists of oily rags, hazardous waste, batteries, waste oil and fuel.

Approximately 215 tonnes of waste oil has been sent to an approved Papua New Guinean specialist contractor for recycling through their waste oil processing unit. Almost 60 tonnes of oily wastewater was treated through the LNG Plant’s dissolved air flotation unit during the year, with no impact to the quality of discharge water.

Approximately 180 tonnes of wastewater generated from the washdown of production equipment during maintenance activities was treated and disposed at an approved third-party facility in Australia during 2020. A biohazard incinerator at the Hides Waste Management Facility is used to safely dispose of medical waste. In 2020, almost 20 tonnes of medical waste was processed through the incinerator.

The installation and commissioning of a new industrial incinerator was deferred to 2022 due to the unavailability of resources as a result of COVID-19 restrictions. In the meantime, all incinerable non-restricted waste is sent to the Hides Waste Management Facility landfill for disposal.

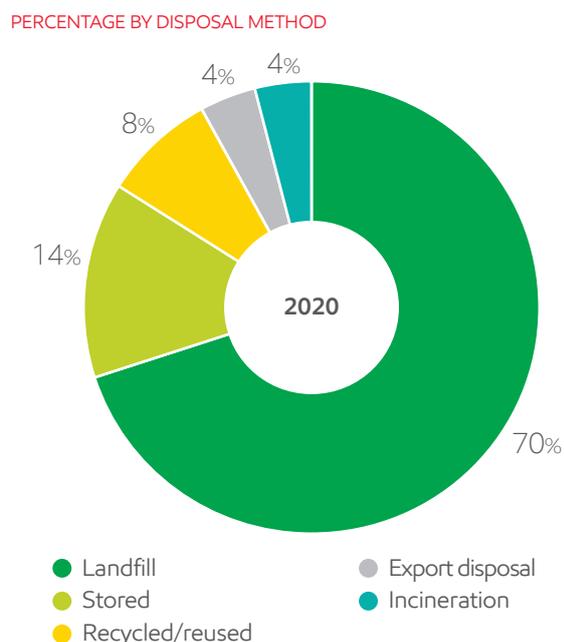
The Hides Waste Management Facility landfill received approximately 3100 tonnes of non-restricted waste during 2020. The LNG Plant landfill received approximately 235 tonnes of non-restricted waste during the year.

Liquid food composters are used to process food waste at the HGCP and LNG Plant. The composters are fully enclosed automatic commercial bio-digesters that compost solid and liquid food waste within 24 hours into greywater that is safely released into the wastewater system for further treatment.

The HGCP composter was taken offline during the year because its effluent contributed to high ammonia nitrogen levels that exceeded discharge criteria at the HGCP wastewater treatment plant. Before being taken offline, the HGCP composter processed almost 7.5 tonnes of food waste. The composter will be brought back online as soon as the issue is resolved. The LNG Plant liquid food composter processed almost 27 tonnes of food waste during the year.

In 2020, waste predominantly consisted of waste oil, food waste, general office and accommodation refuse, cardboard and paper. Most non-restricted waste was disposed of in landfill, as shown in Figure 7.2.

**Figure 7.2 – Waste disposal**



## 7.6 Spill prevention and response

Fifty-three low-level spill incidents consisting of six wastewater spills, seven chemical spills and 40 hydrocarbon spills were recorded during 2020. All spills were contained within EMPNG site boundaries. EMPNG and its contractors responded quickly and appropriately to all spills, resulting in no significant environmental impact.

Of the six wastewater spills, one occurred when approximately 500 litres of sewage spilled at the Angore wastewater treatment plant due to a faulty floater indicator. The second occurred at the LNG Plant when approximately 300 litres of suspended solids leaked from an external recirculation pump. A third spill was recorded at Moro when approximately 3450 litres of sludge was released from a damaged anaerobic digestion tank base.

Other wastewater events involved two sewage spills of less than 50 litres each and a spill of approximately 120 litres of partially treated wastewater.

Chemical spills included: 400 litres of polymer that was emptied onto soil at the Hides Waste Management Facility during the theft of a container in which the polymer was kept; 100 litres of cement additive that leaked through a cement wall fence; and between 50 and 100 litres of foam that discharged onto surface soil inside the Kutubu Central Processing Facility metering skid. The remaining four chemical spills and most of the hydrocarbon spills were less than 10 litres.

Thirty-six near misses were recorded during the year, involving potential spills to impermeable surfaces. EMPNG and its contractors are maintaining regular spill prevention toolbox talks with contractor work teams.

Spill response drills conducted in 2020 included a shoreline response practical exercise at Manubada Island, off the coast of Port Moresby, that involved the assembly and deployment of shoreline booms, the skimmer system, water pumps and temporary waste storage equipment. Participants also had to establish work zones on a shoreline environment and access applicable oil spill response equipment. A desktop response scenario in the Upstream area focused on the process involved to control, contain and collect a spill to prevent environmental impact.

Education was also conducted about the types of oil spill response equipment and their appropriate application on land or water. A practical spill response scenario was conducted for a mono-ethylene glycol spill and included safety management, hazardous substance management and spill clean-up procedures. Further practical exercises included a land-based simulation of skimmer deployment that involved mooring points and suction hose connection to the pump. An exercise was also conducted on the practical use of a pump to recover waste diesel and transfer it to containment.

## 7.7 Reinstatement, erosion and sediment control

Repairs of erosion and sediment control measures impacted by the 2018 earthquake continued during 2020. Projects included drainage and micropiling works at Kilometre Point 6, preparation for ROW works at Moro and runway and infrastructure repairs at Komo Airfield. Works involved monitoring and maintenance of site drainage, clearing sediment from drains and stormwater culverts, maintaining vegetated drainage areas, constructing drainage, replacing sandbags, installing silt fencing and checking dams as needed. Revegetation monitoring also continued at the southern end of Komo Airfield.

Erosion and sediment control works at the HGCP involved additional control measures installed at stormwater monitoring sites and upgrades to the stormwater channel and sediment control measures for the Hides Waste Management Facility stormwater pond. Refer to *Section 7.3.2 Water quality monitoring* for further information.

Erosion and sediment control plans were developed for Angore during the year.

Monitoring of temporary erosion and sediment control measures installed along the greenfield section of the pipeline ROW associated with the Angore Gathering System project continued.



**Sediment control devices installed in the stormwater drain at the HGCP**

## 7.8 Invasive species, pests and plant pathogens

EMPNG aims to prevent invasive weeds, pest species and plant pathogens from entering or establishing near production facilities and to contain invasive species that were already present prior to PNG LNG construction.

Through the effective management of invasive species and plant pathogens, the company aims to preserve unique ecosystems and critical habitats for native flora and fauna.

The annual weed survey conducted by the New Guinea Binatang Research Centre was unable to proceed during 2020 due to travel restrictions caused by COVID-19. However, invasive species and plant pathogen control and management continued at PNG LNG facilities and along the pipeline ROW. Data collected from the 2019 annual weed survey was analysed during 2020. Results showed a 15 percent decline in the overall number of weed species between 2018 and 2019. There was no significant weed population increase detected and no presence of new Priority 1 weed species found during the 2019 survey.

EMPNG continues to educate workers and communities about priority weed and pest species, and the actions they can take to help protect native flora and fauna. For example, three Goare youths in the Lower Kikori region released a *piku* that was trapped in a fishing net back into the Kikori River after learning about invasive species management and native fauna protection through EMPNG.



**A trapped *piku* being released back into the Kikori River by three Goare youths**

Following the identification of cane toads (*Rhinella marina*) at the HGCP in 2018, EMPNG is maintaining appropriate mitigation measures to control the spread of this invasive species within the Hides Ridge area. The company now has more than 10 dedicated cane toad inspectors and three supervisors who monitor grounds, vehicles and cargo for cane toads. Cane toads are dangerous to local predatory fauna that are poisoned by toxin in the toad’s skin during ingestion.



**Bisi community members in the Lower Kikori region with invasive species education materials provided by EMPNG**

Additional sightings of carp and tilapia occurred in June, following the identification of these invasive species at the HGCP wastewater treatment plant effluent ponds in September 2019, resulting in a Severity Level <0 incident.

During 2020, maintenance crews reinforced the bases of existing silt curtains around the effluent ponds, and installed additional screens where water exits to the external environment, to prevent the fish exiting the ponds and facilitate their removal.

Additional control measures included: regular removal of vegetation around the ponds; development and implementation of an inspection protocol; and installation of camera traps for ongoing monitoring.

EMPNG has distributed information to site teams about regulatory and lender requirements regarding the introduction or occurrence of invasive species in and around PNG LNG facilities.

**HIGHLIGHT**

**TALKING POSTER HELPS CONTROL CANE TOADS**

EMPNG has found an innovative way to educate Upstream area communities about the impact of cane toads on the local environment by using a talking poster.

The new cane toad awareness poster has an audio recording in three different languages: English, Tok Pisin and Huli, which is activated when red buttons are pressed that correspond to text on the poster.

The talking poster is part of EMPNG’s approach to the management of cane toad populations in the Upstream area. Cane toads are an invasive species that impact local wildlife, including causing population declines in predator species that are poisoned when the predator tries to eat the toad.

EMPNG’s cane toad management program includes raising awareness through training and education of Upstream area workers and local communities, preventing the establishment of cane toad colonies at EMPNG sites and at Hides Ridge and controlling cane toad numbers at all EMPNG facilities.



**EMPNG Environmental, Regulatory and Biodiversity Planner, Fiona Inina, showing the buttons on the cane toad talking poster**



Vegetation regeneration progresses at Kilometre Point 284 near the Omati landfall

## 7.9 Regeneration monitoring

Regeneration monitoring surveys are conducted every two years in the Upstream area to evaluate natural revegetation performance and the condition of the forest. Survey areas cover elevation zones from 24 to 2721 metres above sea level along the entire pipeline ROW.

The most recent survey was completed in March 2019. Survey areas covered low, medium and high elevation zones. An analysis of the 2019 regeneration survey was completed during 2020.



### New Guinea Binatang Research Centre scientist conducts regeneration monitoring during the 2019 survey

The analysis showed that the pipeline ROW vegetation regeneration is progressing well toward natural secondary and primary forest. Two areas at the low- and mid-elevation survey plots were identified for further monitoring due to high grass cover following vegetation clearance and impacts from the 2018 earthquake.

EMPNG is continuing to raise awareness on vegetation management requirements with Upstream area workers so that biodiversity values are protected.

Mangrove monitoring at the LNG Plant site showed good progression of mangrove regeneration.

To reduce community harvesting of mangroves, EMPNG continues to monitor mangrove areas, promote awareness with community members, and maintain control measures to prevent vehicular access to the mangroves – refer to *Section 7.10 Access control* for further information.

## 7.10 Access control

Security checkpoints are used to manage EMPNG's access control system, which involves collecting data about the number and types of vehicles that use EMPNG-controlled roads, as well as reasons for the road use.

Due to pandemic-related restrictions and suspension of the Angore Gathering System project, there was a decline in the number of vehicles that used EMPNG roads during 2020 compared to previous years. This included less traffic on the Southern Logistics route because of reduced EMPNG work activities along the pipeline ROW.

As shown in Figure 7.3, work was the primary reason for access. The types of vehicles using EMPNG-controlled roads are shown in Figure 7.4.

Aerial monitoring conducted along the entire pipeline ROW during 2020 reported no signs of logging adjacent to the pipeline ROW infrastructure and no bypassing of access control measures such as gates.

**HIGHLIGHT**

**EYE IN THE SKY**

Managing and monitoring LNG operations across some 700 kilometres requires large teams of people and equipment, including helicopters. EMPNG uses helicopters to transport workers and cargo, and to conduct aerial surveys along the pipeline ROW.

For production activities, the company uses two Bell 412 helicopters, which are specifically designed to reliably perform in extreme climates and locations such as the Upstream area of Papua New Guinea.

During 2020, the helicopters performed more than 1500 flights, transported approximately 3000 workers and moved some 65 tonnes of cargo to support Upstream area operations.



**Cockpit of one of the Bell 412 helicopters during a pipeline ROW aerial survey**

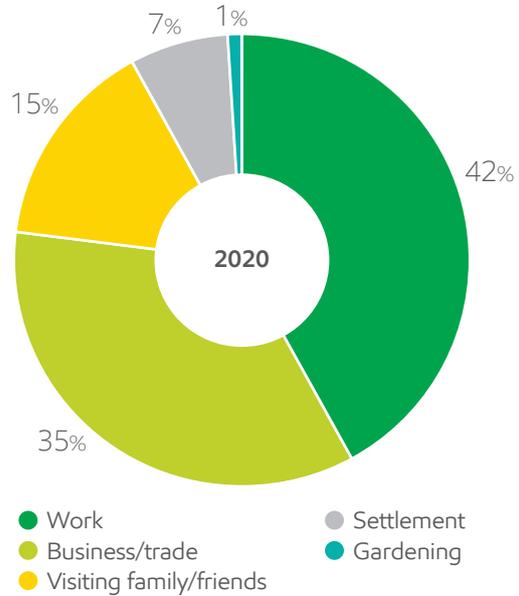
EMPNG has installed large concrete barriers to block vehicular access into mangrove areas at the LNG Plant and pipeline ROW to mitigate the risk of mangrove harvesting by local communities. The pipeline ROW is routinely inspected using drone and CCTV footage. This is supported by ongoing education with workers and communities about the need to protect the mangroves. These measures have resulted in fewer people accessing the area and a reduction in mangrove harvesting.

A boom-gate that may have been removed by community members along the pipeline ROW was not reinstalled due to security issues. Ongoing surveillance shows that other mitigation measures, such as awareness-raising with communities, are working because there has been no community encroachment into the controlled area. Boom gates that have been installed to control access to Angore worksites are routinely monitored and include manned security checkpoints.

EMPNG has completed a review of how access control data is captured and reported, with the aim of obtaining further insights into the use of EMPNG-controlled roads. The review involves developing a simplified and standardised categorisation of data, which will support improved data analysis and interpretation of historical trends.

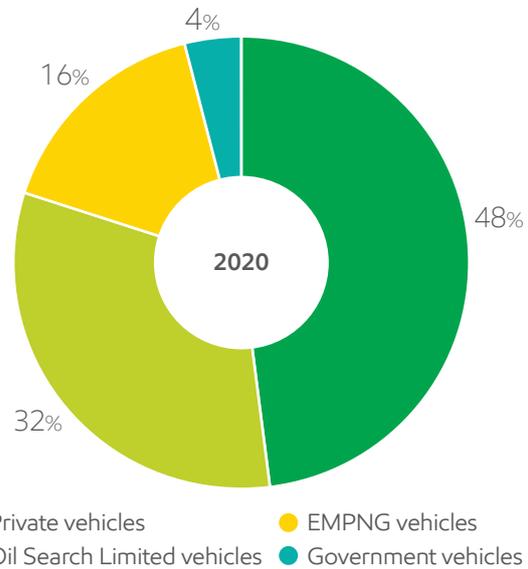
**Figure 7.3 – Purpose of access**

PERCENTAGE OF TRAFFIC USING EMPNG CONTROLLED ROADS BY PURPOSE



**Figure 7.4 – Vehicle types**

PERCENTAGE USING EMPNG ACCESS POINTS



Technical issues were encountered with the software program used for data automation during 2020, with work progressing to resolve these issues.

## 7.11 Quarantine management

All freight imported into Papua New Guinea by EMPNG and its contractors must comply with National Agriculture Quarantine and Inspection Authority procedures and regulations.

In 2020, EMPNG received 878 shipments, with three requiring re-fumigation to comply with the Authority's standards. The number of shipments received during 2020 decreased by 32 percent compared to 2019 because of decreased demand and shipping delays caused by COVID-19.

Since the start of production, EMPNG has received 7108 shipments, of which 1032 have been inspected by the National Agriculture Quarantine and Inspection Authority, with 117 requiring re-fumigation.

## 7.12 Cultural heritage

The cultural identity, traditional knowledge and oral histories of Papua New Guinea are maintained through the use of, and relationships with, land and natural resources. Cultural heritage is expressed in environmental features such as caves, trees, waterholes and many habitat features that are intertwined with biodiversity.

As part of its commitment to preserving Papua New Guinea's unique biodiversity, EMPNG aims to preserve the culture and history of environments located near production facilities.

PNG LNG crosses the Hela, Southern Highlands, Gulf and Central provinces of Papua New Guinea. Each province has its own diverse range of environments along with many languages and cultural groups. These provinces can be grouped into four cultural heritage regions as shown in Figure 7.5.

Measures were taken during the construction of PNG LNG to manage known cultural heritage resources, as well as chance finds, such as unknown archaeological sites. EMPNG's Chance Finds protocol has guided the salvage and preservation of artefacts, many of which are kept at the Papua New Guinea National Museum and Art Gallery.

Since 2018, Component 5 of EMPNG's Biodiversity Offset Program, which involves the creation of new protected areas, has incorporated cultural heritage in the community engagement and resource mapping process. The inclusion of cultural heritage has attracted more community members from the Lower Kikori region to participate in conservation activities.

During 2020, Lower Kikori region community members provided details of their oral histories and historically significant sites were documented and proposed for preservation as part of the protected area network.



Lower Kikori region community members share their oral history, which includes the skill of wood carving at Babaguina Village

Figure 7.5 – Cultural heritage regions of PNG LNG





Local company, Total Waste Management, provides waste management services to PNG LNG

2020 PERFORMANCE HIGHLIGHTS

ENVIRONMENT MANAGEMENT

**100%** NOISE WITHIN CRITERIA | 
 **878** FREIGHT SHIPMENTS | 
 **60M** STANDARD CUBIC FEET LESS FLARING

**51,070kL LESS** GROUNDWATER EXTRACTED

**581,400kL** SEAWATER EXTRACTED **77,400kL** POTABLE WATER PRODUCED

**INCIDENTS**  
**0** SEVERITY LEVEL 0, 1, 2 AND 3 INCIDENTS  
**55** SEVERITY LEVEL <0 INCIDENTS  
**39** NEAR MISSES

**INCIDENTS**  
 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.

NON-CONFORMANCES AND FIELD OBSERVATIONS

**0** SEVERITY LEVEL II AND III NON-CONFORMANCES  
**20** SEVERITY LEVEL I NON-CONFORMANCES  
**135** NEEDS IMPROVEMENT FIELD OBSERVATIONS  
**48** POSITIVE FIELD OBSERVATIONS

**NON-CONFORMANCES**  
 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.



# PART C



**SOCIAL**

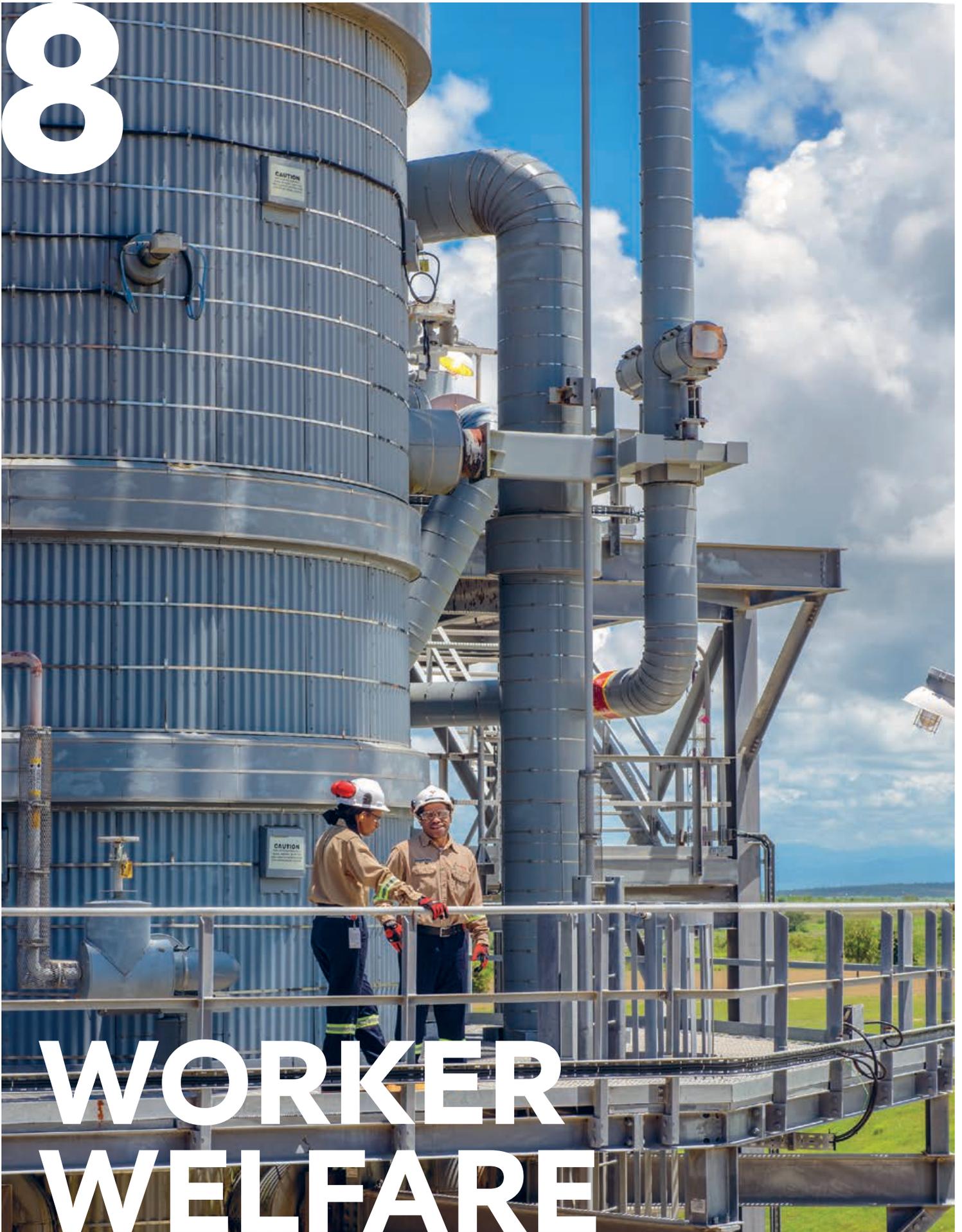
# **The welfare of EMPNG workers and communities impacted by production activities is paramount.**

To support the welfare of its workforce and communities, EMPNG implements dedicated SMPs covering health, safety, security, emergency preparedness, labour and working conditions, land access, resettlement and livelihood restoration.

Through two-way communication and ongoing engagement with all levels of government and Papua New Guinean communities, EMPNG also monitors the welfare of communities near production facilities.

This allows the company to work with many stakeholders with the aim of delivering the value derived from LNG production back to local communities.

# 8



# WORKER WELFARE

EMPNG promotes a safe and healthy workplace through fair and equitable labour practices, along with processes and procedures that protect the safety, health and wellbeing of its workforce.

## 8.1 Safety

EMPNG is maintaining an industry-leading workplace safety culture and upholding its objective of ‘Nobody Gets Hurt’, by achieving the best safety performance since the start of production.

The LNG Plant achieved more than seven years of work without a Lost Time Incident and one year without a restricted work incident. The LNG Plant ground transport team also reached a milestone of one year without a recordable motor vehicle accident.



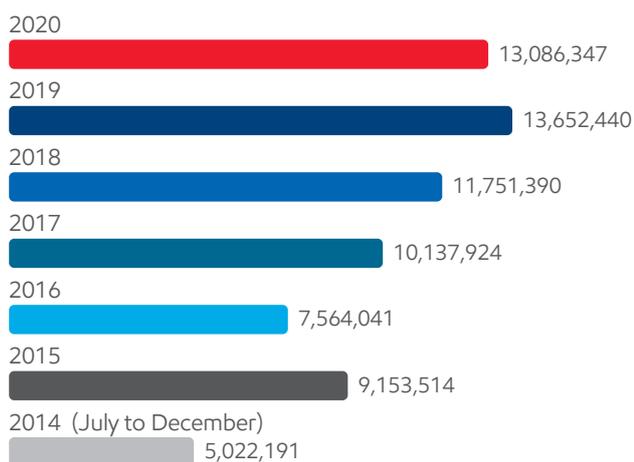
**LNG Plant workforce celebrates seven years without a Lost Time Incident**

In the Upstream area, more than three years of work has been completed without a Lost Time Incident. EMPNG’s waste contractor and HGCP Camp services contractor each achieved six years of work without a Lost Time Incident during 2020.

More than 70 million hours have been worked since production began, as shown in Figure 8.1.

**Figure 8.1 – Production work hours**

NUMBER REPORTED BY PERIOD FOR THE TOTAL PNG LNG WORKFORCE



### Core safety processes

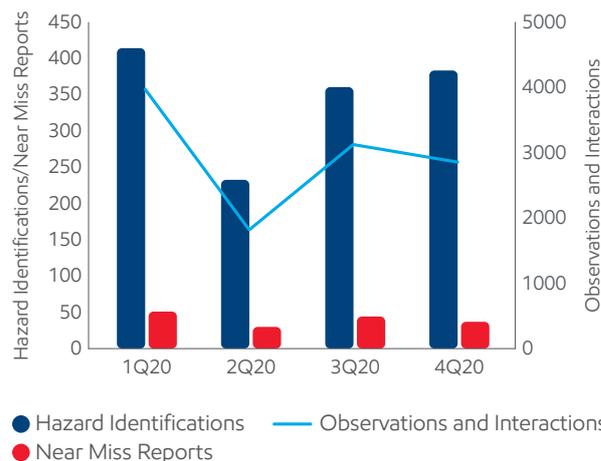
EMPNG’s core safety processes are based on indicators that determine the health of safety systems and are defined in OIMS. Leading indicators measure the effectiveness of EMPNG’s safety programs, while lagging indicators measure actual incidents, consequences and overall safety performance. Key leading safety indicators, as shown in Figure 8.2, include Observations and Interactions, Hazard Identifications and Near Miss Reports.

During 2020, more than 13,100 ‘Nobody Gets Hurt’ cards were submitted, reporting more than 11,700 Observations and Interactions and almost 1400 Hazard Identifications. Additionally, more than 160 Near Miss Reports were submitted during the year. This is a decrease compared to 2019 due to ‘island mode’ operations.

Key lagging indicators for EMPNG are Lost Time Injury 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.

**Figure 8.2 – Core safety processes**

NUMBER REPORTED BY QUARTER



EMPNG had a Total Recordable Incident Rate of 0.06 in 2020 compared to 0.10 in 2019.

The continued decline in injury rates is the result of EMPNG’s investment in workforce competency and field leadership. EMPNG has had no Lost Time Incidents for more than three years and no significant process safety events for almost seven years.

### Safety initiatives

Throughout January and February, the 2020 Safe Start campaign was held with workers in the Upstream area, LNG Plant and Port Moresby office. The theme was ‘Safety starts with me’. Workers translated the theme into their own languages, including Papua New Guinean dialects and international languages such as Hindi, Malay, Thai, Arabic, Spanish, African and German to make sure the message was clear throughout the organisation.

EMPNG held a Contractor Safety Leadership Workshop in October. The theme of the workshop was ‘Sustaining Safety Leadership in times of COVID-19’.

During the workshop, Laba Security Services and PNG Mining and Petroleum Hospitality Services received the Safety, Security, Health and Environment contractor award for outstanding safety performance.

A buddy management program that was introduced at the 2019 workshop was maintained in 2020 despite the challenges presented by COVID-19. The program involves EMPNG managers partnering with contractor managers from areas not associated with their scopes of work for mutual mentoring and to work together on enhancing safety, security, health and environmental matters in the field.

EMPNG completed 11 process safety scenario workshops during 2020 to review and assess PNG LNG major hazards. As part of the company's Enhancing Process Safety initiative, these workshops aim to review higher consequence scenarios and confirm critical safeguards that protect EMPNG's workforce, assets and communities surrounding production facilities.



**A process safety scenario workshop**

EMPNG's Safe Choice program, which was introduced in 2019, is empowering workers to make safer choices in the workplace. There are now 179 Safe Choice coaches, consisting of workers who have completed training to mentor, support and encourage their colleagues to make safe choices at work.

## 8.2 Health

EMPNG provides high quality medical, public health and industrial hygiene programs at all worksites to support and maintain the health of its workforce.

During 2020, medical activities focused on maintaining the physical and emotional health and wellbeing of workers during COVID-19 restrictions.

### Medical

Some 8700 patient consultations were conducted across camp clinics during the year, with more than 5700 people treated in the Upstream area and almost 3000 patient consultations at the LNG Plant site clinic.

COVID-19 restrictions presented a challenge with conducting tuberculosis and random alcohol and drug screening for LNG Plant community-based contract workers. To address this challenge, the Medical and Occupational Health team conducted testing at the LNG Plant site gate so that contract workers did not need to enter the site clinic. Approximately 1100 workers received tuberculosis screening and no active tuberculosis cases were recorded.

Four medical evacuations were conducted during 2020. All of these were non-work-related. To manage potential issues for medical evacuations to Australia during COVID-19 border lockdowns, an international medical evacuation procedure was implemented, which complies with Australian Government requirements.

Both the LNG Plant site and HGCP clinics are equipped with negative pressure isolation pods to safely transport patients with infectious diseases during the COVID-19 pandemic.

EMPNG did not record any workplace acquired COVID-19 cases during 2020.

The Culture of Health program introduced in 2019 continued during 2020, with a focus on worker biometric screening as well as mental health and wellbeing.

In recognition of the impact that COVID-19 had on EMPNG workers and their families, an e-book titled *Staying physically well during quarantine* was provided to workers to inform them about how to stay physically and mentally well during isolation and quarantine.

To commemorate Mental Health Week in October, more than 170 workers attended a 'Creating a Resilient Mindset' webinar. The webinar featured a qualified counsellor who provided guidance on how to develop and maintain a resilient mindset during times of fear and challenge. Workers also wore odd and colourful socks on Odd Socks Day to support *Wantok bilong lukautim tingting* meaning 'a friend who takes care of mental health' and the Yu OK? or 'Are you OK?' program.



**Workers proudly display their odd socks for Odd Socks Day in support of mental health**

Due to social distancing requirements, face-to-face employee counselling was replaced by telephone counselling. Telephone counselling services were available to workers 24 hours a day, seven days a week during 2020.

More than 300 workers participated in biometric screening during the year that consisted of blood pressure, weight and blood sugar testing at site clinics to help identify and address any underlying health issues.



**Laboratory Technician, Martin Kirara, collects a blood sample for tuberculosis screening**

### Public health

To prevent the transmission of COVID-19, numerous safeguards were implemented such as quarantining workers coming onto worksites, supporting business lines with return-to-work assessments for workers who developed flu-like symptoms and conducting contact tracing for suspected COVID-19 cases as part of a COVID-Safe Plan.

EMPNG also implemented enhanced food handling practices at worker dining halls and conducted COVID-19 screening for workers as they arrived at camps.



**Temperature screening before entering the Port Moresby office**

### Industrial hygiene

EMPNG's industrial hygiene program protects workers through the assessment, control and communication of potential health hazards in the workplace.

During 2020, camp and aircraft sanitisation work was conducted as part of EMPNG's COVID-19 response. Exposure monitoring, assessment reviews and health inspections were undertaken at camps and worksites throughout the year. This included noise exposure assessments, with high-risk noise tasks identified.

A baseline mercury exposure monitoring survey was completed at the HGCP ahead of work activities for the installation of a temporary filtration skid at the low-pressure flare drum. The survey aimed to provide a base from which EMPNG could determine the level of worker exposure to mercury in the product stream.

Crystalline silica, benzene and noise exposure monitoring was completed to support the LNG Plant's molecular sieve change-out activities during 2020. A review of water quality was also conducted as part of commissioning activities for the new Moro B Camp water treatment plant to make sure potable water health specifications were met.

### Other strategic initiatives

World AIDS Day was commemorated in December with a webinar featuring guest speakers from the Joint United Nations Programme on HIV/AIDS.

## 8.3 Camps

Hand sanitiser stations, quarantine facilities and 'island mode' operations were among measures EMPNG took during 2020 to mitigate the risk of COVID-19.

'Island mode' began in early May at the LNG Plant Site and Upstream area camps, with the introduction of a quarantine period for new workers coming into camps. Social distancing protocols were also implemented at all office areas including conference rooms, cafeterias, and in EMPNG transport vehicles.

To expedite the process of checking in at worker camps and comply with social distancing requirements, an online camp check-in tool was introduced in September. It allows travellers to complete camp check-in remotely, prior to arriving at the camp. The tool is accessible from web-enabled EMPNG personal devices or fixed devices provided at the APEC Charter Terminal in Port Moresby, as well as at each of the EMPNG camps.



**EMPNG Managing Director, Andrew Barry, using the online camp check at the APEC Charter Terminal prior to travelling upstream**

The HGCP Camp catering contractor continues to purchase fresh produce from local suppliers for camp menus. During 2020, more than PGK197,000 (USD56,145) was spent on local produce provided by the Pajja Iba Women's Agri Business Group Inc. in the Upstream area. The women's group provides 2000 kilograms of fresh produce each week to the HGCP Camp catering contractor.



**Members of the Women in Energy Network with EMPNG leaders in support of International Women’s Day**

### 8.4 Labour and working conditions

Employee resource groups such as the Women in Energy Network and Wanwoks Initiative, which supports Papua New Guinean workers, continue to deliver mentoring and coaching to enhance employees’ personal and professional development.

In March, the Women in Energy Network commemorated International Women’s Day with online videos that featured professional women sharing their life and work experiences. In support of the International Women’s Day theme ‘each for equal’, members of the EMPNG leadership team pledged to be champions of workplace equality, with each senior leader committing to an individual action to encourage equality in the workplace.



**EMPNG workers wear black to say no to gender-based violence**

EMPNG has strengthened its partnership with the Business Coalition for Women to address sexual and family violence in Papua New Guinea.

In July, EMPNG’s Women in Energy Network invited workers to wear black to say no to domestic violence.

More than 180 EMPNG workers joined a webinar to hear about work that the Papua New Guinea Business Coalition for Women and Bel isi Papua New Guinea were doing to end gender-based violence.

A financial planning personal finance seminar was held during the year to support Papua New Guinean workers with their financial planning.

Standards of Business Conduct training continues to be provided for new employees as part of EMPNG’s induction process. Periodic refresher training is also provided for the existing workforce. The Standards of Business Conduct training covers topics including ethics, conflicts of interest, anti-corruption, health, safety, environment, alcohol and drug use, equal employment opportunity and harassment. The Standards also explain EMPNG’s open door communication procedures, which encourage employees to ask questions, voice concerns, escalate issues to senior levels of management when needed and make appropriate suggestions regarding the company’s business practices.

### 8.5 Security

EMPNG security personnel continue to support operations, including the implementation of COVID-19 lockdown requirements.

In early 2020, 10 national EMPNG security personnel completed an Australian-based training program and achieved internationally recognised security accreditation. Another 12 obtained remote pilot licence qualifications from an accredited training facility in Australia and piloted regular drone flights over EMPNG facilities.



### **A Memorandum of Understanding to support the Justice Services and Stability for Development Program in Hela Province was extended during 2020**

A Memorandum of Understanding, which was renewed in 2019 with the Australian Department of Foreign Affairs and Trade to support the Justice Services and Stability for Development Program in Hela Province, was extended to 2022. Through this Program, the Community Law and Justice Adviser works with the Hela Provincial Government to coordinate community-based law and justice initiatives, including family and sexual violence prevention strategies.

Under the terms of a Memorandum of Understanding between the Royal Papua New Guinea Constabulary and EMPNG, police officers and contracted security personnel deployed to EMPNG sites are required to complete Voluntary Principles on Security and Human Rights training. A revised training package for members of the Royal Papua New Guinea Constabulary was developed by EMPNG and endorsed by the Constabulary during 2020.

## **8.6 Emergency preparedness**

Preparedness is critical to reducing the likelihood and consequence of an emergency event. It also gives EMPNG workers the competency to appropriately respond should an emergency situation occur.

In 2020, EMPNG conducted 96 emergency response drills across all facilities. This included country emergency evacuation and cyber security drills.

An EMPNG Emergency Support Group and three Incident Management teams were formed to respond to COVID-19 impacts. The Emergency Support Group and Incident Management teams established site-specific Critical Safeguards to prevent and mitigate the risk of COVID-19 at all worksites.



**Emergency response drill at the LNG Plant**



**Person overboard drill at the LNG Plant Marine Terminal**

The Critical Safeguards included protocols such as: the use of masks; increased hygiene standards, including the use of hand sanitisers; social distancing; visitor restrictions; the requirement to notify work and stay home if unwell; virtual meetings and work from home arrangements; revised shift rotations to accommodate quarantine procedures; and COVID-19 testing. The Critical Safeguards were assigned to specific contact points for stewardship and reporting.

At the LNG Plant, emergency drill scenarios conducted during the year included a road accident rescue, fire and explosion, confined space rescue, hazardous materials incidents, wildfire suppression, first aid and emergency medical care, missing



**Medical emergency response drill at the HGCP**

persons, and a helicopter emergency landing. A person overboard scenario was also conducted at the LNG Plant Marine Terminal.

In the Upstream area, scenarios included desktop tactical response exercises, fire and muster drills, a condensate liquid release, an aviation hard landing with a person injured drill, and a helicopter fuel fire scenario.

In addition, a practical drill was undertaken at the HGCP simulating an explosion in the mono-ethylene glycol vent gas incinerator with multiple casualties and a community response.



**Fiona Simon has become the first Papua New Guinean woman to join PNG LNG's Fire and Rescue team. Fiona is among 38 active firefighters who cover Upstream and LNG Plant operations. The team responds to emergencies such as grass fires, motor vehicle accidents, building fires and confined space rescues**

2020 PERFORMANCE HIGHLIGHTS

WORKER WELFARE



NO PROCESS SAFETY EVENTS IN 6.5 YEARS



NO LOST TIME INCIDENTS IN 3.5 YEARS



>70M HOURS WORKED



13,100 'NOBODY GETS HURT' SUBMISSIONS



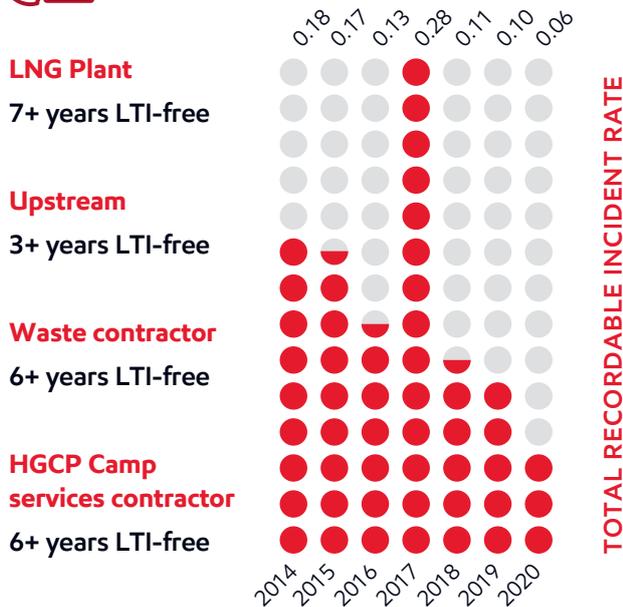
96 EMERGENCY RESPONSE DRILLS AND EXERCISES



- Cyber attack
- Road accident
- Fire and explosion
- Missing persons
- Wildfire
- Person overboard
- Helicopter emergency
- Medical emergency
- Confined space rescue



SAFETY PERFORMANCE



Total Recordable Incidents Rate is the frequency rate of total recordable incidents within a given period, relative to the total number of hours worked in that period by a constant of 200,000 hours, which represents 100 workers working 8 hours per day for a year (250 working days). It is a proxy measurement for safety performance with lower rates indicating better safety performance.



0 LOST TIME INCIDENTS



4 NON-WORK-RELATED EMERGENCY MEDICAL EVACUATIONS

1100 TUBERCULOSIS SCREENINGS

300 BIOMETRIC SCREENINGS

170 ATTEND 'CREATING A RESILIENT MINDSET' WEBINAR

0 WORKPLACE ACQUIRED COVID-19 CASES

8700+ PATIENT CONSULTATIONS



9



# STAKEHOLDER ENGAGEMENT

Open and inclusive two-way communications and engagement activities are maintained to keep stakeholders informed about production activities and to address community issues in a timely manner.

## 9.1 Community engagement

During 2020, 5408 engagements were conducted with communities throughout the PNG LNG area of operations. These were held through almost 2000 formal and some 3400 informal engagements with 36,650 stakeholders.

Community engagements were held in accordance with COVID-19 safe practices with most engagements focused on raising awareness about COVID-19.



**EMPNG Land and Community Affairs Officers conducting a community engagement at Papa Preschool**

In the Upstream area, engagements also covered resettlement and landowner compensation activities in Angore, and Clan Caretaking Agreements.

Engagement with LNG Plant communities covered safety issues such as road and marine terminal exclusion zone safety as well as snake awareness and community development support projects.

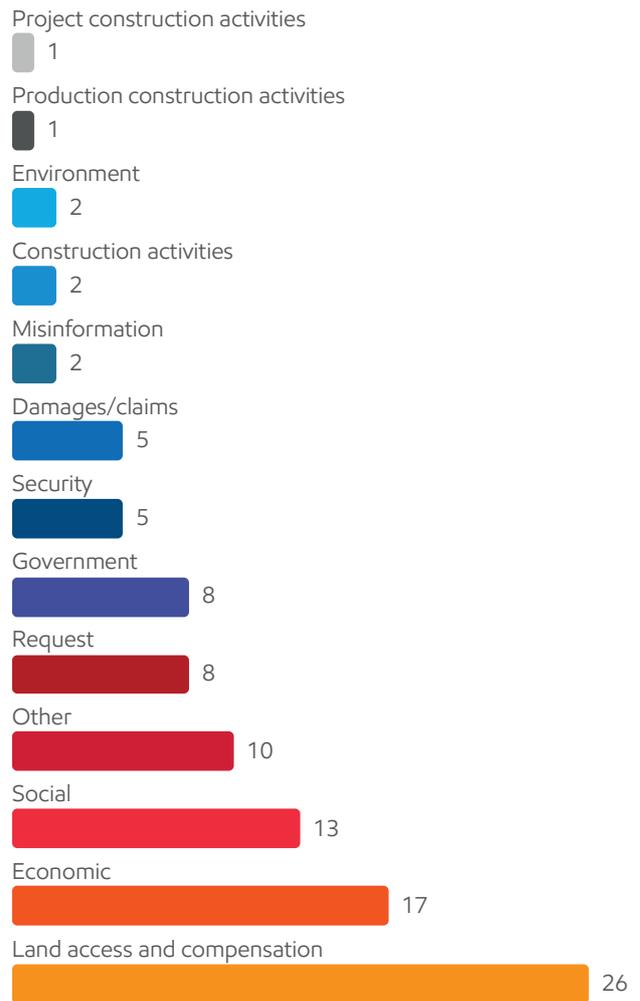
### Issues identification

During 2020, 513 issues were received and categorised. As shown in Figure 9.1, land access and compensation-related issues accounted for 26 percent of issues raised.

Most of these issues were in relation to payments for Clan Caretaking Agreements and landowner compensation for resettlement.

**Figure 9.1 – Issues**

PERCENTAGE RECEIVED BY CATEGORY



Economic issues comprised 17 percent and were in relation to employment and local business development opportunities.

Thirteen percent of issues raised were for social concerns and mainly regarded community health.

Other issues accounted for 10 percent and were mostly industrial relations concerns with other companies.



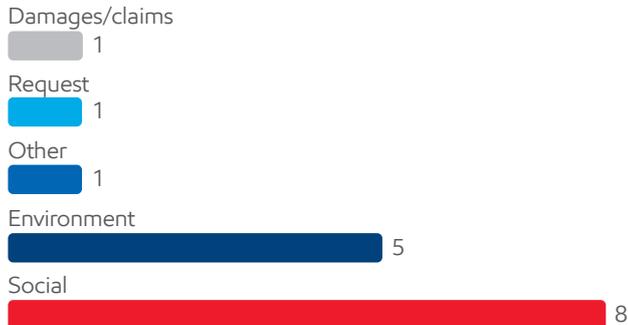
**Former EMPNG Community Affairs Officer, Lovelyn Kila, posting COVID-19 awareness information in Lea Lea Village**

## 9.2 Community grievance management

In 2020, 16 grievances were registered and categorised compared to 18 grievances in 2019. The number of grievances registered during 2020 is shown by category in Figure 9.2.

**Figure 9.2 – Grievances**

NUMBER OF ACTIVE GRIEVANCES BY CATEGORY



Eight of the 16 grievances recorded were for landowner claims regarding resettlement activities in Angore. These claims were predominantly about livelihood impacts, specifically to identify and confirm crops and livestock that could be affected by resettlement.

Five environmental-related grievances were recorded during the year. Three of these grievances regarded claims about waterway and environmental pollution from drilling activities in the Upstream area. Investigations, which included site inspections and testing, confirmed that works were undertaken within Environment Permit requirements and no environmental harm had been caused by drilling run-off. As a result of these investigations two of the grievances were closed. The third environmental grievance was found to be unsubstantiated and was closed.

The fourth environmental grievance regarded a potential hydraulic oil spill at a pond in Hides, but the investigation concluded this was unrelated to EMPNG activities. The fifth environmental grievance was a compensation claim for environmental damage and land access but was found to be non-genuine and was closed.

The remaining three grievances regarded a request for sponsorship, resettlement at Angore Wellpad C and an incident with a contractor vehicle.

Fifteen grievances were addressed and closed, with only one remaining open at the end of the year. A grievance that was raised in December 2019 and remained open in 2020 was also closed during the year.

## 9.3 Resettlement

EMPNG tries to avoid resettlement as a result of construction activities. In situations where resettlement is unavoidable, the company aims to improve, or at least restore, the standards of living and livelihoods of displaced persons.

During 2020, two households were added to the nine impacted households recorded in 2019.

### HIGHLIGHT

#### SHARRYL SHARES HER RESETTLEMENT EXPERIENCE

EMPNG Resettlement Advisor, Sharryl Ivahupa, has been sharing her extensive resettlement advisory experience with EMPNG workers and communities to provide more understanding about the level of empathy and knowledge needed for resettlement projects.

Sharryl, who has more than 16 years of experience in Papua New Guinea’s agriculture industry, began her career with ExxonMobil in 2009 when she was a geography assistant on an Australian National University pre-construction survey for PNG LNG. After joining PNG LNG, she was involved in the development and implementation of PNG LNG’s resettlement manual. During production, Sharryl has continued implementing resettlement initiatives while sharing her experience with workers and communities, and presenting on EMPNG’s resettlement and livelihood restoration activities at events such as the International Association for Impact Assessment conference in Brisbane, Australia.

“Resettlement is a sensitive subject, so training is a big must for anyone who wants to be involved. It’s not as simple as going into communities and explaining the steps to resettlement. You do the first step and then review the process. My advice for anyone in resettlement is to always go through the process correctly,” Sharryl said.

“I want to share my experience so that wherever there may be another resettlement project, people know the approach to take based on lessons learned from PNG LNG. Not only following the guidelines they have but also having the heart for the community, which is empathy,” she said.



EMPNG Resettlement Advisor, Sharryl Ivahupa (second from right), during a community engagement in the Upstream area

These 11 households were identified for resettlement because of land access required for Angore Wellpad C.

Ten of the 11 households received livelihood restoration assistance from EMPNG. The eleventh household was not eligible for livelihood restoration support, so received compensation only.

The first outcome evaluation of the resettled households conducted six months after relocation concluded that 10 households had improved standard of living. The eleventh household chose to relocate to a previously established area outside the general Angore project impact area, so was considered as having an improved standard of living. EMPNG continues to monitor the 10 households remaining in the area to confirm their livelihoods are maintained.

A pre-construction survey was conducted along the Hides Spine in 2020 to assess households at risk of landslips. During the survey, 17 gardens associated with three households were identified as being located within the Hides Spine exclusion zone. The exclusion zone was determined during routine inspections along the pipeline ROW, which found the potential for landslips at certain locations of the Hides Spine. While no immediate safety risks have been identified, if a landslide occurred it could impact nearby communities. The Hides Spine exclusion zone consists of five areas, four of which are outside the PNG LNG area of operations, and are used primarily for gardens. During 2020, the 17 garden owners identified within the exclusion zone were asked to relocate for safety reasons. Compensation payments will be made to these garden owners in 2021.

## 9.4 Compensation

Seven Clan Agency Agreements were signed with landowning clans during 2020 for land access along two kilometres of the pipeline ROW from Dagia River to the HGCP. This allowed for ROW extension works and ongoing earthquake repair works along the ROW.

By the end of the year, 98 percent of deprivation payments were completed, with five payments outstanding due to internal clan disputes. Seventeen clans have been involved in compensation disputes since the start of PNG LNG construction, with seven clans resolving disputes during 2020.

This has allowed EMPNG to settle 41 percent of disputed clan payments to date.

## 9.5 Government engagement

EMPNG keeps all levels of government engaged and informed about production activities and works with government to support community-based initiatives.

### 9.5.1 Infrastructure and government support

EMPNG continues to support the Papua New Guinean Government with infrastructure programs, as well as maintenance and upgrade works to the Highlands Highway between Mendi in the Southern Highlands Province and Komo in the Hela Province.

Highway upgrades during 2020 included a chip-sealed road surface, improved drainage and road shoulders. Infrastructure support included the construction of a four-story office complex in Tari for the provincial government's administration, which is scheduled for completion during 2021.

These PNG LNG infrastructure tax credit projects provide employment for people living in nearby communities, as well as business opportunities for local suppliers.

### 9.5.2 Advocacy

EMPNG's advocacy workshops provide participants with information about EMPNG operations, as well as national content and community development programs. During 2020, three advocacy workshops were held with 63 participants before the program stopped for the year due to COVID-19 restrictions.

Participants included representatives from the Central Provincial Government, Papua New Guinea's Department of National Planning and Monitoring, and PNG Air Services Limited.



**PNG Air Services Limited representatives touring the LNG Plant site following an advocacy workshop in January**



**Central Provincial Government Deputy Provincial Administrator, Glen Gani (left), attending an EMPNG advocacy workshop**

In early March, a United Nations delegation that included Deputy Secretary General, Madam Amina Mohammed, visited Hela Province with the Hela Governor, Philip Undialu and Prime Minister, the Honourable James Marape. Logistics for the United Nations visit were supported by EMPNG.

EMPNG commemorated Papua New Guinea's 45<sup>th</sup> Independence Day in September with a webinar featuring local dignitaries talking about the petroleum industry's contribution to nation building. The webinar was opened by Papua New Guinean Prime Minister, the Honourable James Marape, who said PNG LNG was one of the greatest success stories of the country's young economy. He also commended the EMPNG workforce for their contribution and service to the country.

In November, EMPNG presented to University of Papua New Guinea School of Business and Public Policy Executive Master of Business Administration students undertaking the 'PNG and Pacific Business Environment' course. Members of EMPNG's National Content, Corporate Social Responsibility, and Public and Government Affairs teams spoke about EMPNG's approach to corporate social responsibility and national content initiatives in Papua New Guinea. The students were managers and senior professionals from government, statutory organisations and private sector companies in Papua New Guinea.

### 9.5.3 Benefits assurance delivery

EMPNG is maintaining monthly landowner royalty payments and annual Provincial and Local Level Government Development Levy payments to the Papua New Guinean Government in accordance with the *Oil and Gas Act 1998*. These funds are distributed by the Department of Petroleum and Energy and the State-owned MRDC on behalf of the Papua New Guinean Government. They are managed through government trust accounts at the Bank of Papua New Guinea, with the Department of Finance as custodian of the accounts.

In the early stages of PNG LNG, landowners requested that the Papua New Guinean Government give more granularity regarding royalty apportionment than had been provided in the Licence Based Benefits Sharing Agreements. The government agreed to this request and conducted a detailed review of landowner identification, starting in 2011. This process is known as Landowner Beneficiary Identification. This in turn was subject to litigation by some landowners in the Hides area, which resulted in additional administrative steps for the distribution of royalties from oil and gas production by court annexed mediations.

During 2020, Landowner Beneficiary Identification was completed for landowners in the Petroleum Development Licence PDL9 area and is awaiting ministerial determination regarding the identified beneficiary clans.

With Papua New Guinea's National Court closed in response to COVID-19 restrictions, the Department of Petroleum and Energy, Prime Minister's office and provincial governors have been working together to progress work and resolve issues until courts resume.

Bank account opening has been completed for identified beneficiary clans from all PL4 pipeline segments and payments commenced in March. Royalty payments will commence for segments 1 to 3 following completion of the government-led peace accord signing for the Benaria area.

Beneficiary clans at the LNG Plant site villages of Papa, Boera, Porebada and Lea Lea continue to receive payments through the MRDC, with the next payment due in early 2021.



**Papua New Guinea's Prime Minister, the Honourable James Marape, joins industry leaders at a webinar to commemorate the nation's 45<sup>th</sup> Independence Day**

EMPNG has made its fifth Development Levy payment to the Papua New Guinean Government as required by the *Oil and Gas Act 1998*. The Development Levy is held in the Department of Petroleum and Energy trust account for payment to impacted provincial and local-level governments in response to their developmental needs.

### 9.5.4 Revenue management

The Extractive Industries Transparency Initiative (EITI) is a voluntary initiative intended to improve governance in resource-rich countries through disclosure and verification of company payments and government revenues from oil, gas and mining projects. Papua New Guinea is preparing for its second EITI validation.

During 2020, the EITI International Board commended Papua New Guinea’s efforts for making meaningful progress in implementing the EITI global standard by addressing weaknesses in government systems and improving the level of transparency in the country’s extractive sector. The Board also recognised the nation’s efforts to produce EITI data in a timely manner, as well as the government’s ongoing commitment to using the EITI process as a diagnostic tool to support reforms.

The EITI International Board has allowed 18 months since the first validation in 2018 for Papua New Guinea to take corrective actions in 14 identified areas to meet the EITI standard before a second validation is undertaken. These include: a comprehensive assessment of transactions between State-owned enterprises (and their subsidiaries) and mining, oil and gas companies; establishing whether direct subnational payments to government entities by State-owned enterprises are material; and clarifying which extractive revenues are recorded in the national budget.

Lockdowns and restrictions to normal operations due to COVID-19 severely affected Papua New Guinea’s ability to address all the identified areas before the scheduled second validation assessment in 2020. Therefore, the EITI International Board has deferred the country’s validation.

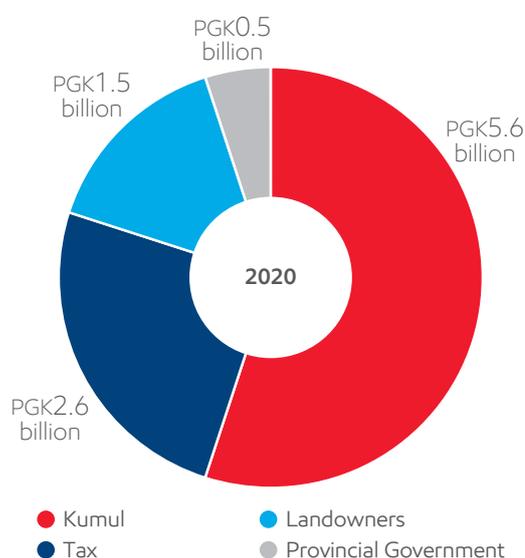
In the interim, the Papua New Guinea EITI National Secretariat has asked the government, mining, and oil and gas developers to start making provisions for contract transparency so that Papua New Guinea can comply with EITI requirements from January 2021. The EITI International Board has clarified requirements regarding contract transparency as well as the disclosure of various project agreements that entail benefits for landowners, the government and the citizens of Papua New Guinea. This includes: a better understanding by all parties in project agreements about the terms upon which resources are extracted and sold; a better understanding about how revenue such as royalties, dividends and taxes flows to all levels of government and landowners affected by extractive operations; enabling the government and its citizens to see what subsidies and tax incentives are awarded to industry companies or resource developers; and a better understanding of the obligations that project developers are required to meet to protect impacted communities.

Papua New Guinea progressed three main EITI reports during 2020. These were: the State-Owned Enterprise Scoping Study, the Beneficial Ownership Disclosure Report and the seventh Papua New Guinea EITI Report covering 2019 activities. Due to delays with receiving data from some reporting entities, completion of the 2019 EITI Report was deferred to 2021. Reports covering previous years are published on the Papua New Guinea EITI National Secretariat website.

ExxonMobil has served continuously on the EITI International Board as either a full or an alternate member since its inception in 2002. EMPNG is among 21 members of the EITI multi-stakeholder group.

Since the start of production in 2014, PGK10.2 billion (USD2.9 billion) in revenue from PNG LNG has been distributed to landowners and the Papua New Guinean Government, as shown in Figure 9.3.

**Figure 9.3 – PNG LNG distributions**  
PERCENTAGE OF REVENUE DISTRIBUTED BY RECIPIENT



### 9.6 Media

Media activities during 2020 focused on EMPNG’s partnership with all levels of government and local communities in the fight against COVID-19.

At the beginning of the pandemic, communications centred around measures taken by EMPNG to maintain operations while ensuring the safety of its workforce. It also focused on the donation of critical life-saving medical equipment and personal protective equipment to national and provincial health authorities. As the year progressed, communications highlighted EMPNG’s pandemic response with local communities.

In June, Papua New Guinea’s Rugby Football Association held a media conference to announce PNG LNG’s renewal as the Naming Rights Sponsor for the PNG LNG Kumuls. The announcement included the continuation of coaching clinics for the Komo Rugby League Association in Hela Province and Dabary Rugby League Association in the Central Province.



**EMPNG Executive Director, Keith Killian (centre right) and External Affairs Executive General Manager, Hitesh Lal (centre left), proudly display the new sponsorship agreement for the PNG LNG Kumuls**

EMPNG had six appearances on FM100’s talk back radio show during the year about its national content initiatives. Each radio show appearance included partners such as the National Department of Health, the Port Moresby Nature Park and Lancos, HGDC and Laba Holdings Limited.

EMPNG also invited the Australia National University Enterprise, Advancing PNG: Women Leaders Network, Pacifika Women’s Network and PNG Rugby Football Association to share their achievements with successfully implementing community development programs.

In addition, the company participated in numerous podcast interviews throughout the year to highlight its national content initiatives, community development programs and production activities.



**FM100 Host, Douglas Dimagi; EMPNG National Content Manager, Sisa Kini; HGDC Chair, Libe Parindali; and Laba Holdings Limited Chair, Raho Kevau, discuss national content initiatives on FM100’s talk back radio show**

In November, EMPNG Managing Director, Andrew Barry and National Content Manager, Sisa Kini presented at the Chamber of Mines and Petroleum’s fourth webinar series.

The theme was ‘One Team moving Forward PNG’ and presenters spoke about the benefits that PNG LNG has brought to Papua New Guinea through partnerships with government, landowners and communities.

Representatives from the MRDC and the Kumul Petroleum Academy also spoke at the webinar, which attracted more than 450 online attendees.

At the end of the year, EMPNG hosted a media tour of PNG LNG facilities.

As well as visiting the facilities, journalists interviewed local community members and community-based organisations about PNG LNG’s role in furthering the local economy and community development.

The PNG LNG Environmental and Social Report – Annual 2019 was published in July. More than 63,000 printed copies of the Report’s Executive Summary were published in English and Tok Pisin in national newspapers. The 2019 Report, along with previous Environmental and Social Reports, are available on the PNG LNG website.

Two editions of PNG LNG TIES were distributed to stakeholders during the year, including EMPNG workers, government, media and local communities. This eight-page pictorial broadsheet-sized newsletter covers production and business updates, and stories about PNG LNG’s interactions with local communities. PNG LNG TIES is also published on the PNG LNG website.

Visit the website at: [www.pnglng.com](http://www.pnglng.com)



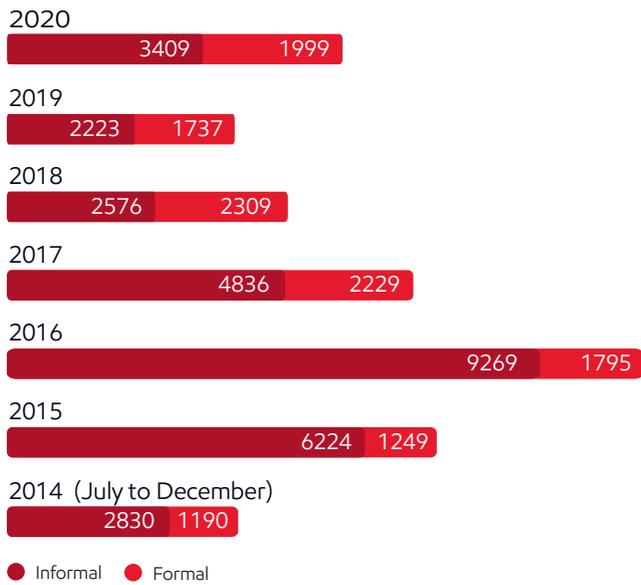
EMPNG achieved almost 1.2 million engagements on its Facebook and Twitter accounts, with the most popular topics being health, fostering workforce skills, environment and community empowerment.

2020 PERFORMANCE HIGHLIGHTS

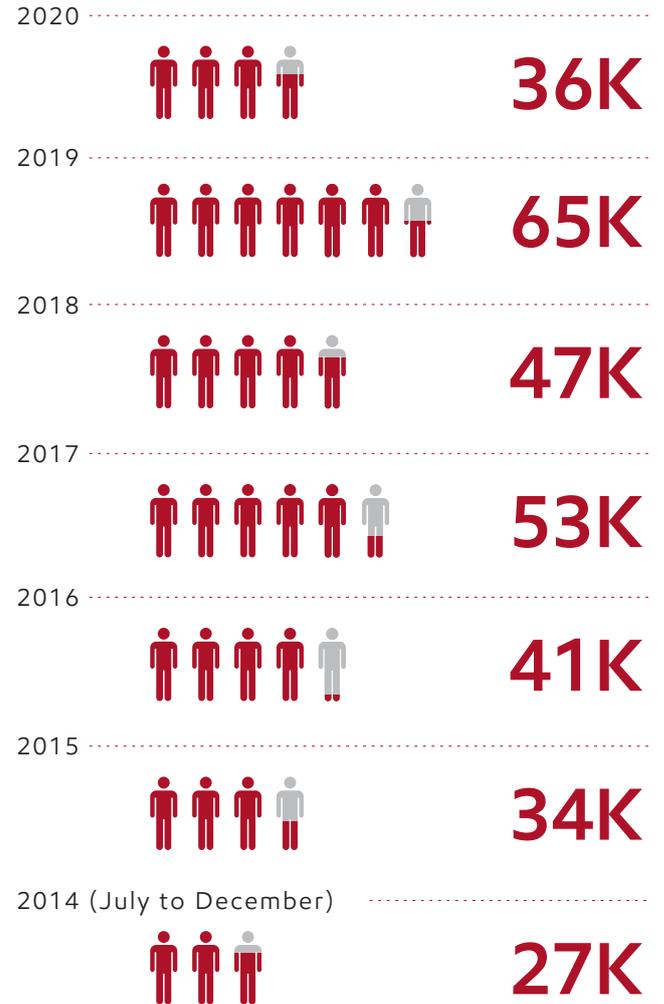
STAKEHOLDER ENGAGEMENT


**5408** ENGAGEMENTS | 
 
**PGK10.2B** REVENUE DISTRIBUTION | 
 
**5<sup>TH</sup>** DEVELOPMENT LEVY PAYMENT MADE

NUMBER OF ENGAGEMENTS SINCE THE START OF PRODUCTION



ENGAGEMENT PARTICIPANTS SINCE THE START OF PRODUCTION




**94%**  
 GRIEVANCES  
 CLOSED


**3**  
 ADVOCACY  
 WORKSHOPS


**513**  
 ISSUES  
 RESOLVED


**63**  
 ADVOCACY  
 ATTENDEES

**2**  
 EDITIONS OF  
 PNG LNG TIES  
 NEWSLETTER  
 PUBLISHED



  
**1.2M**  
 SOCIAL MEDIA  
 ENGAGEMENTS



**63,000**  
 PRINTED COPIES OF  
 PNG LNG E&S REPORT –  
 ANNUAL 2019  
 EXECUTIVE SUMMARY

*Image captions:*

<b>Cover</b>	EMPNG Field Operations Technician, Petrus Paul and OIMS Coordinator, Wesley Spinder at the HGCP
<b>Executive Summary</b>	The LNG Plant at dusk
<b>Chapter 1</b>	The Hides Gas Conditioning Plant at night
<b>Chapter 2</b>	EMPNG Operations Technician, Christopher Presbitero at the LNG Plant
<b>Part A</b>	EMPNG Operations Technician, Grace Yandi at the HGCP
<b>Chapter 3</b>	EMPNG Operations Technician, Moale Bae (back left) with Surveillance Engineer, Kimberly Sabarei (centre front) and Instrument and Controls Engineer, Naomi Kenny (back right) at the LNG Plant Control Room
<b>Chapter 4</b>	Kitchenhand, Eunice Mowi from contractor PNG Mining and Petroleum Hospitality Services Limited working at the Port Moresby office
<b>Chapter 5</b>	Women from the Paija Iba Women's Agri Business Group Inc.
<b>Part B</b>	The New Guinea dainty treefrog ( <i>Litoria auae</i> ) found only in the forested lowlands and foothills of southern New Guinea
<b>Chapter 6</b>	The montane environment surrounding Hides Wellpad G. Photo by EMPNG Electrical Technician, Simon Koila, winner of the November 'Photo of the Month' competition
<b>Chapter 7</b>	Moro Airstrip looking towards Lake Kutubu
<b>Part C</b>	Children from Para Primary School in the Hela Province
<b>Chapter 8</b>	EMPNG Surveillance Engineer, Kimberly Sabarei, and Geotechnical Engineer, Solomon Sova at the LNG Plant Main Cryogenic Heat Exchanger
<b>Chapter 9</b>	Porebada Primary School Head Teacher, Jack Mario, and student, Billy Richard, with COVID-19 awareness posters that were provided to the school by EMPNG

*Project headquarters*

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Eneji Bilong Wol. Luksave Bilong Papua Niugini.*