

PNG LNG



Communities get long term help



Garden tools and vegetable cuttings are helping communities to cultivate their gardens again.

Recovering from a disaster the size of the Feb 26 earthquake, takes time and long term effort. An event of this magnitude can be devastating and extremely challenging for communities directly affected.

While we supported affected communities in Kutubu in the Southern Highlands Province, Hulia, Tari, Hayapuga and Komo in Hela Province, and Huiya in Western Province with initial deliveries of food and water supplies, tarpaulins for shelter and medical and hygiene kits after the earthquake – the greater challenge remains maintaining support for the long haul to help communities recover.

“ExxonMobil PNG is committed to supporting the long-term recovery of earthquake impacted communities around Hela, Southern Highlands and Western Provinces. For the longer term, health care and food supply is going to be important. We are also assisting the government to build infrastructure and key roads and bridges for Hela and Southern Highlands Provinces that were destroyed during the disaster,” said ExxonMobil PNG Managing Director Andrew Barry.

Together with our partners at ANU Enterprise (ANUE) and PNG Salvation Army, work has

started.

Based on a needs assessment conducted by PNG Salvation Army and ExxonMobil PNG, we redeployed PNG Salvation Army medical teams to Huiya in the Mt Bosavi in Southern Highlands Province, Habi and Wasowedu in Western Province and communities near Hides to provide much needed health services. We are supporting the re-establishment of food gardens in a number of our project area communities, with our partners from the ANUE, through our existing community livelihoods improvement program.

“We have been working with ExxonMobil PNG and target

communities in the Hides area since operations began in 2014 to address food security, vulnerabilities and income generation. To support the restoration of communities recovering from the earthquake, our teams are on site to assist communities with initial planting materials so they will be able to grow their food again,” said ANUE Project Manager Owen Hughes. Over 58,000 vegetable cuttings, 200 kilograms of seeds and 900 tools have been distributed and reached more than 900 households in communities living along the Pipeline Right of Way (ROW) at Benaria areas including

Yarale, Timu, Lau, Benaria, Mulako Tangi, Tamita and Pakale. Other distribution sites around Hides include the well pads, 3 Ways, Nigiria, Perapu and Kulu communities.

“Government officials and other companies find our place so remote and difficult to reach so we don’t get the assistance we need. A helicopter landing on our land to deliver the planting materials and garden tools is a story we will live to tell,” said Seventh Day Adventist Church Pastor Michael Mogolo of Mulako Tangi community in the Hulia LLG.

Message from Andrew Barry, Managing Director ExxonMobil PNG



The first half of 2018 has presented many challenges. We have worked together with our community partners to bring relief and help to communities affected by the earthquake and safely resumed production of liquefied natural gas (LNG) and exports after a temporary shutdown following the

earthquake. Our long term recovery plans in health, food security, education and infrastructure – in affected communities is ongoing. I am also extremely proud of the team of young Papua New Guineans at the Hides Gas Conditioning Plant, LNG Plant and Port Moresby office who

rose up to meet the enormous challenge thrown at them after the earthquake in February. Well done! As a company, we withstood the earthquake extremely well because of the world-class design and construction of the facilities and the quick response by our staff and contractors.

At ExxonMobil PNG, we are committed to contributing to the nation’s economic development. We achieve this by building human, social and economic capacity in a way that benefits people, communities and businesses over the long term. I hope you enjoy this issue of the PNG LNG Ties – happy reading!

Vickie breaks the mold in the control room

"When I applied for the program, my goal was to be a Control Room Technician. ExxonMobil PNG took me on board with no previous work experience and I undertook the training levels. I knew it would take about 8 years of operational experience before I could apply for a CRT role."

2 One thing Vickie Watch will remember for a long time - and which will no doubt be a highlight of her career with the PNG LNG project - is being in the hot seat on her first day at work as the first female Control

Room Technician (CRT) in Hides during the restart of the Hides Gas Conditioning Plant (HGCP) after the 7.5 magnitude earthquake forced the plant to shutdown. Vickie had successfully



First female Control Room Technician in Hides, Vickie Watch, at work at the Hides Gas Conditioning Plant.

completed the Operations Training Simulator (OTS) training program and was completing the CRT Live Training hours to be assessed as a competent Control Room Technician when the earthquake happened. "I was away on break when the earthquake hit and returned to site after the plant was shutdown. On my first day at work when I began my new role as CRT, the plant operations supervisor told me to get the G-wells ready - and I was still getting my head around the shut down and restart planning!" Vickie

recalled.

"I was under pressure. This was no simulation - it was live. Working in co-ordination with spine-liners (technicians at the well pad), I had to get the wells ready to flow." Wellpad G is the furthest away from the Hides Gas Conditioning Plant. To safely flow gas, Vickie had to ensure pressure in the well was equalised with the pressure of the gas field below so that the valve could be safely opened.

Vickie added that her mentor and Hides Competency Assurance Standard

Trainer/Assessor Bill Baker, Control Room Technician Alex Oki and Hides Operations Supervisor Jay Lavapo were all hands on deck and monitored the process live together from the control room instrument panels.

"It was team effort. Knowing I had the support of my mentor and colleagues, I was able to concentrate," said Vickie. Bill said: "During the restart, Vickie was still under 'live training'. This means she was in charge of daily operations on the board with myself as mentor - taking the back seat and overseeing her role. I was also covering start-up and commissioning of equipment being brought back online after the earthquake. This gave Vickie a chance to oversee new start up activities while keeping what we had online at the time, within operating parameters.

"The CRT is the driver of the shift. The role is not just about knowing and controlling the process safely, it is also about leadership, giving directions to operators, maintenance and contract personnel to ensure work is carried out safely and the plant is operating efficiently and at maximum output."

Vickie and other PNG women that work with the PNG LNG project, currently make up 22% of the workforce.

Tapping local talent and our efforts to build a strong national workforce through investment in training and development remains central to our workforce strategy. Vickie had studied to be a teacher but decided to apply for the Operations and Technician trainee program with ExxonMobil PNG in 2012. "When I applied for the program, my goal was to be a Control Room Technician. ExxonMobil PNG took me on board with no previous work experience and I undertook the training levels. I knew it would take about 8 years of operational experience before I could apply for a CRT role," said Vickie.

Bill added: "Selection for Control Room Technicians training is very complex and expectations for this role are high. As her mentor, I am proud to see her dreams come to fruition and it makes me very proud for not just Vickie but also Noah Pingin and Alex Oki who have all successfully become CRTs."

Vickie's role as Control Room Technician is to lead the Operations Team for the shift and to maintain production operations of the well pads, Hides Gas Conditioning Plant process, Kutubu and Gobe gas production rates to the pipeline and maximising gas production for the LNG plant near Port Moresby.



From left to right: Pipeline Operations Supervisor Noah Pingin, HGCP CAS Trainer/Assessor and OTS Instructor Bill Baker and Control Room Technicians Alex Oki and Vickie Watch.

The road to recovery

“With the support from ExxonMobil PNG – we were able to visit these communities to provide much needed medical services as well as pastoral support.”



On a warm Friday afternoon, a team of medical health workers and pastoral workers returned from the Hela and Southern Highlands Provinces, after spending two weeks in earthquake affected communities. “Our biggest challenge was bringing in medical supplies to remote communities who were affected by the earthquake,” said PNG Salvation Army Territorial Director of Health Services, Christine Gee. “With the support from ExxonMobil PNG – we were able to visit these communities to provide much needed medical services as well as pastoral support,” she added. Teams of health workers and pastoral workers visited

communities in Huiya in the Mt Bosavi area in Southern Highlands Province and communities in Para, Eduawi, Mananda, Komo, Benaria and Juni communities in Hela Province. The team also visited Habi and Wasowedu in the Western Province. ExxonMobil PNG is providing support for the restoration of health care facilities and education services and re-establishing food gardens as part of its long term recovery plan. The company is also assisting the government to build infrastructure and key roads and bridges for Hela and Southern Highlands Provinces that were destroyed during the disaster.



A baby receives immunisation from the PNG Salvation Army medical team.

Women’s group assists in recovery plans

Food gardens provide nutritious meals for families and surplus food is potential income source. Land slips, triggered by the earthquake and aftershocks in February, buried many gardens and caused unprecedented damage to homes and families. ExxonMobil PNG is helping restore food gardens in project impacted areas in the Highlands. The Payaipa women’s group in Hides area of Hela Province was identified to grow and multiply seeds for supply to the rest of the communities. Through this program, the women have been issued with sufficient quantities of open-pollinated green beans and Pakchoi seeds by ANUE.

ANUE will buy back the seeds from the women’s group once they are harvested and dried. The seeds will then be distributed into the communities. This is part of ExxonMobil PNG’s long-term recovery plan for the communities. The Payaipa women’s group have been part of ExxonMobil PNG’s Community Livelihood Improvement Program (CLIP) since 2016. “It was only fitting that we involved the Payaipa women’s group because they have the skills and knowledge to grow the crops to generate seeds,” said Timothy Geob, food and cash crops specialist of ANUE. “We will be available to provide technical advice to the group to ensure they grow quality seeds,” he added.



Communities in Beneria and Tabirabi receive vegetable vines and cuttings, seeds and garden tools from ANUE team.



ANUE livelihood specialist team prepares sweet potato vines and cassava cuttings to distribute to communities.

A day in the life of Noah Pingin



"We try to stick to routine but not every day is the same. It's an environment where you are always adapting to changes. I have enjoyed my time so far and look forward to more fulfilling years with ExxonMobil PNG."



Noah Pingin began his career with ExxonMobil PNG in 2010. He is currently the Pipeline Operations Supervisor.

Growing up, control rooms and LNG (liquefied natural gas), never crossed Noah Pingin's mind.

"I had always wanted to be an airline pilot. I had never heard of LNG until people started talking about PNG LNG. It was the buzz word back then – so in 2010, I applied for the Operations and Maintenance Technician Trainee program," said Noah.

And for the eight years that followed, it has been a learning and rewarding journey for Noah.

On February 19 this year, Noah woke up to prepare himself for night shift at the Hides Gas Conditioning Plant.

"As I was walking to work, I was thinking through worst case scenarios that could happen and what I'd do if I was faced with an emergency situation," said Noah.

ExxonMobil PNG's technician training includes very detailed planning for worst case scenarios and practicing how to respond if a real incident occurs.

"When I arrived at work, I looked through the team's Quick Response Guide to make sure the approaches I mentally reviewed were correct."

A week later, on February 26, Noah – then a Control Room Technician – was on night shift

when the 7.5 magnitude earthquake struck.

He was faced with a real situation.

Noah thought the earthquake would subside after a few moments but it grew bigger. He had to draw on every bit of his training in those few seconds after the earthquake struck.

The vibration from the earthquake triggered the shutdown alarm and the Hides compressors had started to shutdown automatically.

"I had to make a sound decision ...and quickly. I knew I had to take action, even as the room was moving around me. I reached out for the shutdown matrix panel and shutdown the wellheads, the plant and pipelines. Satisfied that I had done what was needed to secure the plant, I moved myself to a safe location," Noah recalled.

When the earthquake receded, Noah and the plant operations team continued to draw on their experience and training to depressurise plant equipment by routing the gas to the flare and performing detailed system checks to ensure that the plant and pipelines were safe.

The flare is a safety system that ensures hydrocarbons are safely removed from the plant

equipment in the event of an emergency.

"After all systems were safely depressurised and had shut down, I pulled out the Quick Response Guide to confirm my team had not missed any steps. I am so proud of the team effort and how we handled the situation," added Noah.

In June, he began his new role as Pipeline Operations Supervisor.

The new role keeps Noah busy making decisions based on safety and security for the people that work to maintain and operate the PNG LNG Project pipeline.

The pipeline stretches across three provinces – Hela, Southern Highlands and Gulf – before going undersea to the LNG Plant in Central Province. It crosses rivers, goes up steep mountains and through the valleys passing through pristine jungles and villages.

"We try to stick to routine but not every day is the same. It's an environment where you are always adapting to changes. I have enjoyed my time so far and look forward to more fulfilling years with ExxonMobil PNG," said Noah.

Noah.

Creating positive vibes for preschoolers



The new double classroom for Papa Community Preschool includes a teacher's office, desks, chairs and a water tank. The classroom was built by operator of the PNG LNG project, ExxonMobil PNG.



Creating a positive and stimulating learning environment for children going to school for the first time is essential. More than 50 children from Papa and villages near the PNG LNG plant site now have access to a new double classroom. We are proud to work in partnership with communities near the PNG LNG plant.

Road safety in schools

Road safety around school zones is one of the most important areas to build awareness for school students. Our Community Affairs team visit schools near the PNG LNG Plant each year to conduct road safety awareness. Early this year, our team visited primary schools in Porebada, Boera, Lealea and Papa and Maiari Preschool to conduct road safety refresher awareness.



Boera Primary School children participate in the road safety awareness carried out by our Community Affairs team.



ExxonMobil PNG Community Affairs team distributed safety wrist bands and book marks with the basic road safety rules to the students at Maiari Preschool.

CA team keeping kids snake-smart



Snake specialist demonstrated how to care for a snake bite victim at Boera Primary School.

Venomous snake species such as the Papuan taipan are commonly found in grasslands and savannah woodlands in the southern coastal provinces of Papua New Guinea like the Central Province. We recognise it is important that children are taught the skills to behave safely around snakes and to know what to do when a snake bites. Our Community Affairs team and a snake specialist visited schools near the ExxonMobil operated PNG LNG plant to talk and demonstrate to children about snake safety awareness.

The team visited Redscar High School and primary schools in Boera, Porebada, Lealea and Papa. From the snake awareness talks and demonstration sessions, the children and teachers learnt many important lessons. The greatest risk of a snake bite from venomous snakes is by people trying to kill or handle them. The children were reminded to never attempt to catch or kill, approach or provoke a snake even if they appear dead. Nevertheless when snakes bite, the first minutes are

crucial. A snake bite victim must remain calm and still as possible to keep venom from spreading. The snake specialist demonstrated procedures on assisting the victim until professional help arrived. School teachers have remarked that the snake safety demonstration and message were educational and have cautioned the children to be vigilant when they are collecting firewood in the grasslands.

Team work + safety culture = safe workplace



LNG Shutdown Lead Boris Drewes explains the procedure the team performed to offload an LNG cargo.

Safety is everyone's business. It takes individual commitment, team work, a strong safety culture and values, and a well-trained workforce to maintain a safe workplace where Nobody Gets Hurt.

This cannot be emphasised more in emergencies such as the earthquake in February that led to the shutdown of the Hides Gas Conditioning Plant (HGCP) and Hides well pads in Hela Province and two LNG trains at the PNG LNG plant outside Port Moresby.

ExxonMobil PNG Managing Director Andrew Barry said the PNG LNG project withstood the earthquake extremely well because of the world-class design and construction of the facilities and the quick response by its staff.

"The initial response by our well-trained workforce, coupled with controlled emergency shutdown systems, safely shut in our facilities, minimising damage to equipment and ensuring there was no release of hydrocarbons," said Andrew. A strong safety culture together with great team work during emergencies enables better decisions, supports problem solving and increases creativity.

"The PNG LNG plant site is self-sustaining and relies on gas from Hides to generate power for the plant, the living quarters, medical and emergency response and to produce different types of water such as potable water. When the HGCP was shut down, our team at the LNG plant had to think outside the box and come up with something to keep essential systems in the plant running and available such as power generation, firefighting systems and maintain electricity supply for PNG Power for Port Moresby," recalled LNG Shutdown Lead Boris Drewes.

"Diesel generation was an option. There was still gas in the pipeline but it had to be preserved for a quicker restart of the upstream production system. After the earthquake hit, we did not know how long the HGCP would be shut down – and diesel generation would be costly," Boris added. Instead, gas captured from the top of the LNG storage tanks was used to generate electricity at the LNG plant. As the LNG in the tanks slowly warms, it turns back into gas. But there was only enough LNG in the tanks to maintain

this for a few weeks as LNG also had to be used to keep systems in a cold state, ready for restart.

What the LNG Plant team did next was never done before and is a first in any ExxonMobil affiliate around the world. Many young Papua New Guinean engineers rose up to meet the enormous technical challenge. The PNG LNG plant was designed to load LNG onto tankers. But they had to come up with a plan to offload and transfer an LNG cargo from a tanker through the marine terminal into the LNG storage tanks.

Our teams at the LNG plant, together with teams based in Houston and Singapore, grouped together and brainstormed how to offload LNG from an LNG tanker into the loading arms and back into the storage tanks to keep the systems cold and essential facilities running until Hides was back up.

"Transferring hydrocarbons requires an Integrity Critical (IC) procedure. We did actual walk downs to learn, talked to the teams at the marine terminal and control room to understand their processes, asked many questions and did emergency shut down and



The Control Room technicians at the LNG plant at work at the start of the offload.

safety checks," Boris added. There was no existing procedure to use for this process so the team merged different procedures to come up with one that would work in this scenario for the LNG plant.

"We tried about 25 different scenarios. Christine Sahuburua, a young PNG engineer, worked on different ideas to look for the right option that would work for us. The suitable composition of gas and density is important and through complex calculations she worked out a

possible way. We presented our workflow procedure to management then went through training and assessment of the IC-Procedure," said Boris. The team safely and successfully completed off-loading the LNG cargo on the 5th of April at 14:30. "We would not have been able to do it without excellent team work. It was incredible how the team worked together from planning, risk assessment to execution, and did it all safely."



The Kumul, berthed at the marine terminal at the LNG plant, during the offload.



LNG marine team and Kumul crew on board the tanker during the offload.

Better together – working to improve health



Dr Edwin Machine teaches a class at the UPNG School of Medicine and Health Sciences.

There is strength in teamwork and partnerships. Helen Pebe is a nurse at the Koroba District Hospital in Hela Province. She travelled to Port Moresby to attend a course at the University of Papua New Guinea (UPNG) School of Medicine and Health Sciences (SMHS) for a Diploma in Public Health. "We began classes on health research analysis and we had to use computers and emails. Here I was, a practicing nurse for 15 years, in a class with recent nurse graduates and I didn't know how to use a computer! I almost withdrew from classes. One of my lecturers, Dr Edwin Machine, was very helpful and spent

extra time to teach me how to use a computer and helped me set up my email," said Helen with a laugh. Fast forward to the end of the academic year and Helen graduated and was recognised as the most improved student in the class. "I did my research on malnutrition in Hela Province. From data collected at Tari Hospital, 79% of the children who came to the hospital for various health conditions, suffered from malnutrition. I have plans to redo the research and find solutions to help children in my province," she said. Helen has been invited to present her paper at the 2018

"We primarily lecture and mentor undergraduate and post graduate students in the medical school. Although we also lecture other health workers like nurses, the program has mentored over 10 student research projects."

Medical Symposium in Madang later this year. Dr Edwin Machine, a public health specialist and Dr Henry Welch – a pediatric specialist (children's doctor) – have been working in PNG since the end of 2013 – under a public private partnership arrangement. The unique partnership connects Baylor College of Medicine International

Pediatric AIDS Initiative (BIPAI) at Texas Children's Hospital, UPNG SMHS and the National Department of Health (NDoH) to share ideas and experiences. Supported by ExxonMobil PNG, the partnership works with the only institution in the country to train doctors, building capacity at the grassroots level. Texas Children's Hospital is a

world-class children's hospital and the largest pediatric facility in the United States of America. It is also the primary pediatric training site for Baylor College of Medicine which has one of the largest pediatric residency programs in the US. Drawing from the rich learning environment provided at Texas Children's Hospital and Baylor College of Medicine is a bonus in the partnership. Dr Welch has worked in Botswana, South Africa, Ethiopia and the USA and now provides support to doctors at the children's wards at the Port Moresby General Hospital and also lectures and mentors medical students at the UPNG SMHS. "We primarily lecture and mentor undergraduate and post graduate students in the medical school. Although we also lecture other health workers like nurses, the program has mentored over 10 student research projects; four of the graduate students have had their research published in international journals and two have presented at international medical conferences," added Dr Welch. "Ultimately, by investing in medical school students and future doctors, there is a much larger long term impact," he said. Working together in partnership arrangements, sharing resources and combining talent enhances the likelihood of positive outcomes.



Dr Henry Welch (left) and Dr Edwin Machine are pictured here with the Prime Minister's wife Lynda Babao O'Neill at an event organised by ExxonMobil PNG to thank all its community partners that they work together with in a range of innovative and strategic community programs.

Sharing a passion for science

Inspiring the next generation of innovators via the ExxonMobil Science Ambassador Program is something that our staff volunteers enjoy. "I love sharing the knowledge of geology I have with students and seeing understanding light up in their eyes. Rocks aren't so boring after all! All of a sudden geology is an option for both study and employment," said Larissa Solomon-Nombe. Larissa is a petroleum geologist and has been volunteering her time for the Science Ambassador Program since 2016. "I encourage girls in particular and tell them my story – 17 students in my geology class at the University of Papua New Guinea and I was the only female. It was tough but it makes you work harder to prove to your peers that you are just as good and better,"

she added. ExxonMobil PNG staff volunteers give their time to visit schools and share their knowledge and experience in various fields of science through the Science Ambassador Program. Staff volunteers visit schools near the LNG plant site – Lealea, Porebada, Boera and Papa Primary Schools and Redscar High School. This year the program has rolled out to include other schools in Port Moresby. Topics on 'Rock and Geology' were conducted earlier this year with 'Oil and Gas' sessions to be rolled out in August and September for schools near LNG plant site. A visit to the LNG Plant with students concluded the Science Ambassador Program sessions for June. Our staff volunteers visit schools in communities in Hides and the LNG plant every year.



Larissa Solomon-Nombe is a petroleum geologist with ExxonMobil PNG. She was part of the team that visited Port Moresby International School recently on the Science Ambassador Program.

ExxonMobil PNG staff lend a helping hand

ExxonMobil PNG staff from the Port Moresby office, LNG Plant site and Hides who were on field break, volunteered their time over three weekends to repair a hut used as the waiting area at the Family Sexual Violence Unit (FSVU) at Boroko Police Station in Port Moresby recently. EMPNG is an advocate against

gender based violence and has come to the aide of the FSVU because of the work it does for women, children and men who are affected by violence in their home. The hut was built many years ago and had become a safety hazard for families that visited FSVU to register their complaints or seek advice.



Our staff volunteers replace old floor boards of waiting area of the Family Sexual Violence Unit (FSVU) at Boroko.



Old weathered floor boards posed a safety hazard and were removed by EMPNG staff volunteers. Rubbish that had collected over time were collected from under the building.

(below) ExxonMobil PNG staff volunteer Simon Lax, in a recent Science Ambassador Program with students at Lealea Primary School.



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Santos



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