



# MINING AND PETROLEUM REVIEW

January 2019

A member of the PNGCMTI  
Multi Stakeholder Group

## President's Message



Gereia Aopi CBE

Hello Members and readers,

I hope 2019 has started off well for many of you. This is the first issue of our magazine for 2019 which covers a range of stories from the recently staged 15th Papua New Guinea Mining and Petroleum Investment Conference in Sydney, Australia, from the 3-5 of December, 2018.

So much has happened in 2018 which culminated with the staging of the industry's premier international event in Sydney. Among the many events that happened was PNG's hosting of the Asia Pacific Economic Cooperation (APEC) Summit in Port Moresby. We once again congratulate the Government on the successful staging of this international event.

The Sydney conference was another main event for the industry and PNG as a whole. It attracted an unprecedented international interest with delegates from over 20 countries, including PNG attending the event. It was a success, thanks to the support of everyone, including Prime Minister Hon. Peter O'Neill and other Ministers who attended and made presentations, Members of the Opposition, other Members of Parliament, Provincial Governments, Heads of Departments, landowner representatives, speakers, panelists, Chairs of Sessions, sponsors, and delegates. All in all, there were well over 1,300 delegates and 53 exhibitions. Also a big thank you to Professor Paul Stevens, Distinguished Fellow with The Royal Institute of International Affairs, Chatham House in London who provided delegates an international perspective on the 'Oil and Gas Global Market Projections and the Outlook for PNG's Aspirations for Future LNG Development' during the opening session.

This conference has been earmarked by global resource sector participants as the premier investment conference on mining and petroleum in PNG, the investment and regulatory climate and future opportunities. A vibrant PNG services sector has also been spun off from our world scale mining and petroleum projects from the opportunities that arise from this one single forum. The Chamber will soon announce the dates for its domestic conference to be held in Port Moresby and we hope to see you all once again.

With that, enjoy your reading!

## Conference attracts unprecedented interest



THE 15th Papua New Guinea Mining and Petroleum Investment Conference in Sydney, Australia, attracted unprecedented international interest as the country is on the cusp of its biggest ever investment surge in new mining and petroleum projects, according to the PNG Chamber of Mines and Petroleum.

The Chamber's Executive Director, Dr Albert Mellam, said the conference, organised by the Chamber, attracted delegates from 20 countries and PNG, making it arguably the largest international investment conference ever hosted by Papua New Guinea.

"Many international companies keen to participate in planned mining and petroleum developments had the opportunity to make contact with State-owned Enterprises such as Kumul Consolidated Holdings, Kumul Petroleum Holdings Ltd and the Mineral Resources Development Corporation, where landowner joint ventures could also be initiated," Dr Mellam said.

The Chamber's investment conference is held once every two years in Sydney, with a technical update conference held in the intervening year in Port Moresby. Since its inception in 1995, the conference has played an important role in promoting mineral and petroleum investments in the country which now underwrites around 28 percent of the PNG economy.

Dr Mellam said he was grateful to the PNG Prime Minister Hon. Peter O'Neill for attending and giving the keynote address to a packed audience at the Sydney Hilton Hotel during the opening session.

"This was one of the highlights for many conference attendees,

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# THE PAPUA NEW GUINEA MINING AND PETROLEUM INDUSTRY



Employs over 20,000  
Papua New Guineans



Supports a further 30,000  
jobs in landowner and  
local businesses



Trains thousands of men  
and women to achieve  
their best



Provides learning opportunities by building schools,  
training teachers and funding scholarships  
and education programmes



Further empowers  
women in our communities  
by teaching them literacy,  
numeracy, agriculture,  
health, business  
and life skills



**Mining and  
Petroleum –  
Growing  
PNG's Future**

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An initiative of the PNG Chamber of Mines and Petroleum

# New projects – Papua LNG, Pasca, Wafi-Golpu likely to get approvals this year

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as were valuable industry and policy insights provided in speeches by the Petroleum Minister, Hon. Dr. Fabian Pok and the Mining Minister, Hon. Johnson Tuke.

“Government policies were addressed by the Minister for Environment, Conservation and Climate Change, Hon. John Pundari and the Minister for Communication, Information Technology and Energy, Hon. Sam Basil,” Dr Mellam said.

The outcomes and successes of PNG’s hosting of the APEC Summit last November was also highlighted by the Minister for Lands and Physical Planning and APEC 2018, Hon. Justin Tkatchenko.

The new projects likely to receive approvals in 2019 include:

- The Papua LNG and P’nyang gas development, which jointly will more than double current liquefied natural gas (LNG) production capacity to around 18 million tonnes annually in the next five years;

- Production and export of condensate and liquefied petroleum gas (LPG) is projected to commence in 2021 from the Pasca field, PNG’s first offshore development in the Gulf of Papua; and,

- The world-class Wafi-Golpu copper-gold project in Morobe Province which, if approved, would be the largest, deepest and most complex underground mine in PNG.

These projects would require commitment of more than US\$20 billion in the next two to three years.

Dr Mellam said it is likely the overall investments in these projects would surpass the 1990s resources boom when copper-gold expansion at Ok Tedi, the Kutubu oil project and Porgera gold mine all took place within a space of a few years.

The Sydney conference was informed that the Frieda River copper-gold project, which recently submitted its final feasibility study for government scrutiny and



*Environment and Conservation Minister John Pundari speaking at the conference*

approval, could take several more years to commence.

“Besides the doubling of capacity at the Ramu Nickel mine at a cost of US\$1.5 billion, we could also see the start-up of some smaller gold projects such as the Kingston Resource project on Misima and the Geopacific Ltd’s Woodlark project in the next couple of years,” Dr Mellam said.

He said the Sydney conference attracted investment banks and representatives of export credit agencies that could help fund the spate of new resource projects.

PNG’s attraction as an investment destination, he said, was well summed up by a senior advisor to one of the world’s largest independent investment banks, the Paris-headquartered Lazard International Advisory Group.

The advisor, Ms Nicole Arditti, told a session on ‘Resources Industry Financing’ that “PNG was not just the ‘Land of the Unexpected’ but ‘The Land of Op-

portunities’ for today and tomorrow”.

As proof of PNG’s attractiveness as an investment destination, Ms Arditti cited the Government’s successful inaugural US\$500 million Sovereign Bond issue which, she said, “has remained remarkably stable” while yields have risen significantly for Nigeria and some other countries.

Dr Mellam further congratulated the winners of the inaugural Chamber Awards which included:

- **Trans Wonderland Ltd** (Recognition of outstanding leadership in corporate governance within a PNG Landowner Enterprise 2018);

- **Charlotte Mathews of the Middle Fly River Women’s Association** (Recognition of outstanding Women’s Contribution in the resources industry in 2018);

- **ExxonMobil PNG** (Recognition of outstanding Safety performance in 2018); and

- **Oil Search Ltd** (Recognition of outstanding Humanitarian initiative in PNG in 2018).

# Good and stable legislation needed to drive further investment



*Prime Minister Peter O'Neill with Chamber President Mr Gereia Aopi (far left), Chamber Executive Director Dr. Albert Mel-lam (second from left), and Chamber Vice President Mr Richard Kassman*

The PNG Chamber of Mines and Petroleum believes there is huge potential for further development opportunities in the mining and petroleum sectors in the next three to five years that will deliver further socio-economic benefits to the people of PNG if investors are confident of the legal, fiscal and regulatory environment in PNG.

Chamber President Mr Gereia Aopi said this during the 15th PNG Mining and Petroleum Conference in Sydney, Australia, adding PNG's mining and petroleum companies are important partners and key contributors to the national economy.

"The Chamber is committed to supporting internationally competitive legislation that encourages and maintain investment," Mr Aopi said.

"The Chamber and industry want to work with the government to achieve a legislative framework that will not only meet the needs of PNG, but will also continue to encourage active investment

in the sector."

He said the Chamber and the industry recognises the Government's desire to update PNG's mining legislation to meet the challenges of the 21st century and will continue to support the development of legislation that encourages investment and provides a better outcome for PNG and its people.

"Ensuring a regulatory, legislative and fiscal environment that is conducive to investment is vital for securing this prosperity by attracting investors and delivering a consistent and predictable flow of government revenue," Mr Aopi said.

"We welcome the Government's and in particular, our Mining Minister Johnston Tuke's recent decision to support an independent review of the Mining Act.

"The Chamber is ready to support this review process so that together we can make sure PNG continues to enjoy the significant returns from the mining in-

dustry," he added.

"The industry is responsible for approximately 26% of the nation's Gross Domestic Product and around 80% of exports. Resource sector exports last year were valued at K25 billion out of total exports worth K31 billion."

Meanwhile, Mr Aopi also reaffirmed the Chamber's full commitment to the establishment of the Petroleum Resources Authority (PRA) describing it as a "very important Government initiative".

"With PNG's hydrocarbon sector expanding, it is imperative that the country has a well-resourced regulatory body. PRA's establishment is key to alleviating many of the constraints the Department of Petroleum is currently facing.

"Its establishment will also assist in both increased E&P activity and commercialisation efforts, improved governance systems and a well-resourced organisation that is able to manage the world-class oil and gas sector in PNG," he said.

# Government will access resource company revenues from day one of production: PM

PRIME Minister Hon. Peter O'Neill has signaled the Government wants to access revenue from "day one of production" for resource companies and to crack down on tax avoidance "because too many companies and individuals are not paying a fair tax".

Speaking at the recent 15th PNG Mining and Petroleum Investment Conference in Sydney, Mr O'Neill said the government wanted to try and reduce the 'boom and bust scenario' that has resulted from price fluctuations affecting the country's mineral export commodities.

He said the second LNG project, involving Total Oil, ExxonMobil and Oil Search, would provide a significant boost to the economy.

Under terms currently being negotiated, some 10% of natural gas from this venture will be "made available for petrochemical production", which has been discussed with potential Japanese partners for the last ten years.

Negotiations on the Wafi-Golpu copper-gold project in Morobe Province were progressing well.

Mining Minister Hon. Johnson Tuke, in his address at the conference, said the permitting process for Wafi-Golpu is



**Prime Minister Hon. Peter O'Neill**

scheduled to be completed in the second quarter of 2019.

Mr O'Neill told the 1,300 conference attendees there was a need to integrate PNG's infrastructure developments with the LNG expansion and the Wafi-Golpu venture.

He said the 2019 National Budget focuses on the broadening of the country's economic base away from the boom and bust cycles of the resource sectors.

The Papua New Guinea economy was on a growth path and foreign exchange reserves were anticipated to reach K2.5 billion by the end of 2018.

"The future looks brighter," he said, noting that discussions were taking place for a free trade agreement with China; the provision of 2,500 scholarships for Pacific Island nations and ongoing discussions on LNG with Singapore, Indonesia, Korea and Russia.

## Papua LNG Gas Agreement signing scheduled for March

PETROLEUM Minister Dr Fabian Pok has announced that the Papua LNG Project Gas Agreement is expected to be signed in the first quarter of 2019 at the conclusion of PNG Petroleum and Energy Summit in Port Moresby.

Noting that this will be a significant milestone for PNG with a projected doubling in LNG exports to 17-18 million tonnes annually, Dr Pok said the Government hoped to conclude detailed terms for the proposed agreement by mid-March.

Other key points made by the Minister included:

- All future gas projects would include a domestic market obligation with 2-15% of total resources targeted

for domestic use with the proportion dependent on the level of gas and condensate reserves;

- There will be provision for third party access to gas pipelines;

- Terms will also be set for National Content for domestic supply of goods and services;

- A National Petroleum Authority Bill will be tabled in Parliament 2019

- A gas hub should be created in Western Province with the P'nyang gas field playing a lynchpin role.

On the Petroleum Authority Bill, Dr Pok said benefits it would bring in terms of management of the hydrocarbons sector included a conducive

regulatory regime for issues of exploration, production and marketing licences.

Dr Pok said ExxonMobil has accepted a separate gas agreement for P'nyang with new fiscal terms for upstream and downstream development.

Plans were being finalised for additional gas-fired power generation for Port Moresby with a study underway for additional electricity generation at Hides in Southern Highlands.

Noting that plans were in hand to finalise the clan vetting exercise for PNG LNG Project landowners by the end of the first quarter in 2019, Dr Pok said that future landowner identification would need to be completed prior to construction of any future gas project.

# Tuke: Mineral exports could hit record high despite quake

MINING Minister Hon. Johnson Tuke says PNG's export revenues could reach a new record high of K12 billion despite the devastating earthquake of February 2018 which caused significant disruptions to producing mines of Ok Tedi and Porgera.

He said record revenues were likely, even though commodity prices had fallen and mineral exports from the Ok Tedi and Porgera gold mines were down by 7% and 26% respectively. The Porgera mine suffered a five-month disruption to production when the Hides power plant that supplies power to the mine was damaged by the earthquake.

Speaking on new developments, he said negotiations on the Wafi-Golpu project were still in progress with the aim of concluding them in the second quarter of 2019.

However, planning has not progressed well for the Frieda River project in West



*Mining Minister Johnson Tuke*

Sepik Province following the PanAust application for a Special Mining Lease with the Mineral Resources Authority in June 2016. Under the newly proposed shared infrastructure model, there would be a higher capital cost and a longer development phase. The target now was for the SML approvals to be concluded by the first quarter of 2020 and for production to begin in 2028.

The Minister noted the successful hosting of APEC Mining Week in August, which included a site visit to Newcrest's Lihir mine. This was an invaluable opportunity to show ministers and delegates from a dozen APEC economies the kind of world-class mines which are possible in PNG.

Mr Tuke said PNG was setting up a sound regulatory and fiscal framework for future developments with the passage of the MRA Act, which came into operation in September 2018.

The Mining Bill was still under consideration, with the goal of introducing it to Parliament in 2019.

The Bill would seek to establish the foundation for growth and prosperity by protecting the rights and interests of investors while finding a balance to serve the collective interests of all stakeholders.

## Wafi-Golpu Project partnering today for a sustainable future

THE Wafi-Golpu Joint Venture (WGJV) is working closely with the Government and landowners to take forward the approval process for the K9.1 billion (US\$2.8b) copper-gold project in Morobe Province.

WGJV General Manager for Social Performance and External Affairs, Dr Grant Batterham, told the 15th PNG Mining and Petroleum Investment Conference in Sydney that the two important elements of the permitting process were the PNG Conservation and Protection Authority's (CEPA) assessment of the Environmental Impact Statement, which is a 6,800 pages report, publicly available on the WGJV website, and the Development Forum.

He said CEPA's assessment will include both independent peer reviews and public consultations while the forum will involve landowners, and provincial and local level governments deciding on how benefits from the mine would be shared.

He said the Development Forum was delayed as a result of an internal landowner conflict that went to court, but

WGJV was hoping to see it resume as soon as possible.

If the mine is approved, an initial capital investment is expected of approximately K9.1 billion, with total capital expenditure expected to be around K17.4 billion (US\$5.4 billion) over the estimated 28-year life of the mine.

As well as this significant injection into the PNG economy, Mr Batterham said the project will create economic benefits across the country, which will include providing about 2,500 direct jobs during construction, about 850 ongoing operations jobs and further indirect jobs.

The project will also contribute to local, provincial and national economies through the payment of royalties and taxes, and through a social development investment program designed across the life of the mine. The WGJV continues to engage extensively with community groups in Morobe Province, and has provided regular updates about the project's progress to date.

Mr Batterham explained how WGJV

continues to help local communities throughout the project area benefit from the social and economic benefits flowing from project activities.

He said the WGJV Community Development Program is focused on unlocking Morobe's agribusiness potential, continuing to support the ongoing cocoa development program and investigating other potential agricultural initiatives.

WGJV has invested over K1 million in developing 600 hectares of cocoa for local farmers, which will generate income totalling K2.1 million annually. The WGJV is looking to unlock further agribusiness potential on about 100,000 ha of land through the development of a planned Northern Access Road and other community roads.

Since 2010, the program has also invested in water and sanitation, health, literacy, and road infrastructure in Morobe Province. Community development flowing from the project will complement and support the National Government's Vision 2050 goals and the Morobe Provincial Government's Kundu Vision 2048.

# Porgera applies for 20-year extension

PORGERA Joint Venture (PJV) has applied to the Mineral Resources Authority for its Special Mining Lease for its Porgera gold mine to be further extended for another 20 years, according to its Executive Director Dr Ila Temu.

Dr Temu told the 15<sup>th</sup> PNG Mining and Petroleum Investment Conference in Sydney that the company lodged its application in June 2017. The mine's current SML will expire in August 2019.

An estimated 7 million ounces of gold will be produced over the next ten years. Porgera hit a significant milestone in 2017 when it produced its 20 millionth ounce.

About 50% of gold is currently mined from the underground operations with an additional 26.6 million tonnes a year of waste and ore mined from the open pit.

PJV is promoting greater employment of local Porgerans and through the Job Ready Program initiated in 2015, 233 people are in permanent and temporary roles at the Porgera operation. Since 1990, more than US\$42 million has been invested in skills development of Papua New Guinean workers, who constitute 94% of the mine's workforce.

Dr Temu said among the challenges faced by the mining operations is high rainfall, which can cause mud slides into the open pit and the underground operations.



*The Porgera mine in the Enga Province*

Transport issues also arise on the 700km Highlands Highway supply route to Lae with various factors causing the highway to be closed for 101 days in 2016 and 54 days in 2017.

The mine also must cope with an average of 500 illegal miners on a daily basis with about five hours a day operating time lost in the open pit. Injuries and deaths have occurred among the illegal miners.

Law and order issues also extend to the transmission of power from Hides with some of the 250 pylons frequently cut down. Dr Temu said in 2018, eight transmission towers were felled as a result of sabotage. About 30% of transmission lines are located in tribal fighting zones.

He said the Porgera mine is working with local communities to enhance tower security and management, along with part-

nerships with the police and Hela Province authorities.

In the wake of the earthquake in February 2018, all generating sets at Hides were knocked out and the pipeline supplying gas shifted a few metres.

Employees remained on site and worked on recovery plans with the power plant restored three months ahead of the proposed completion in October 2018.

PJV contributed US\$2 million to the Earthquake Disaster Relief Operations and has spent US\$74 million since 1992 through the Government-owned Tax Credit Scheme across all districts impacted by the project footprint.

Over the years, PJV has paid the National Government over US\$1 billion in taxes and duties.

## PNG Power has win-win strategies for all

PNG Power Ltd has made great advances in the past year but needs to do more to significantly reduce electricity tariffs, PPL's Acting Managing Director, Ms Carolyn Blacklock told the 15<sup>th</sup> PNG Mining and Petroleum Investment conference in Sydney, Australia.

"Subsistence farmers cannot sell enough cabbages to buy this power (at present)," she said, noting that PNG tariffs were among the highest in the world.

Some of PPL's achievements include:

- Connecting about 19,000 new households in 2018 to power. This is in contrast to 2,500 connections the company used to do each year in the past decade. Current target is to have 30,000 connections in 2019;

- After South African mining company, Harmony Gold, agreed to pay tariffs three months in advance, PPL implemented power network performance improvements at the Lae-Highlands power grid that has given Harmony confidence to commit for up to 70 megawatts of power from PNG Power;

- The diversified Mainlands Holdings group based in Lae, which has never been part of PPL's power grid, has agreed to connect to the grid and become a significant PNG Power customer; and,

- Establishment of good relations with the unionised PNG Power workforce – 2,300 employees in 40 locations with only two expatriates – has enabled management and unions to come close to finalising an Enterprise Agreement.

Ms Blacklock said PPL is now looking at innovative ways to legitimise the 25% of power transmission that is tapped through illegal and informal connections.

Last year, 70% of power was diesel-generated with the remaining 30% generated using hydro. PPL is now looking at reactivating old hydro stations and starting new gas-fired power projects so that one-third of generating capacity can come from hydro, gas and renewables/solar.

"For mining companies, captive power is expensive and the ability to connect with a network would result in significant savings," she said. "Under a recently signed MoU with the Wafi-Golpu Joint Venture, the proposed US\$2.8 billion mine could tap into PPL's generating capacity."

# Ok Tedi a globally competitive copper producer

PAPUA New Guinea's oldest operating mine at Ok Tedi has successfully re-engineered operations to dramatically reduce production costs in the past five years, going from among the highest cost producers in the world (99<sup>th</sup> percentile) in 2013 to among the most competitive (19<sup>th</sup> percentile) in 2018.

Ok Tedi's Managing Director, Mr Peter Graham, told the recent 15<sup>th</sup> PNG Mining and Petroleum Investment Conference in Sydney the majority State-owned mine has developed and implemented a revised mining strategy that improves business value by accessing higher grade ore earlier while working within the environmental constraints on waste.

The revised mining strategy will result in mine life to 2025 and likely beyond as resource is added as a result of recent exploration drilling.

Papua New Guineans make up 96% of the workforce.

The mine's in-pit crusher replacement project at a cost of K700 million will be completed in the first quarter of 2020 allowing access to high grade material under the current crusher. Total Material Moved in the mine will increase from 85 million tonnes per annum to around 110 tonnes per annum over the next three years to support increased metal production.

The mine has a comprehensive environmental management program to monitor and control impacts, particularly on the riverine system. In 2019 a new Ok Tedi Environment Management Act will apply. Ok Tedi undertakes outreach activities in 158 villages along 800 kilometres of the Fly River.

The Ok Tedi Development Foundation, funded by Ok Tedi, is the delivery vehicle for socio-economic programs to communities in mine impacted areas of Western Province. One such program is the five-year K100m health improve-

ment project. Largely as a result of this initiative, health indicators assessed by the national government have improved the province from 17<sup>th</sup> to 4<sup>th</sup> position among the country's 22 provinces.

Through OTDF, Ok Tedi has also supported education with the establishment of the nine Flexible and Distant Study Centres. With agriculture another priority, a poultry project that will produce 3.5 million eggs per annum has also been supported in Tabubil.

Ok Tedi manages the Tabubil Hospital which provides quality health care. About 85% of patients are community members, with the rest being employees and dependents.

The hospital, jointly funded by Ok Tedi and the provincial government, is a five-star health facility and also provides academic and clinical training to rural health workers. It employs 93 staff including six full-time medical officers.

## Safety and sustainability underpins socio-economic transformation at Lihir



**Newcrest Lihir Mine Manager Iso Ealedona**

Newcrest's transformation of the Lihir gold mine in New Ireland continues, resulting in increased social and economic benefits for local communities, the Province, and the country.

Mr Iso Ealedona, who is the first Papua New Guinean to take up the Mine Manager position at Lihir, told the 15<sup>th</sup> PNG Mining and Investment Conference in Sydney, that during the 2017-18 financial year, Lihir contributed a total of US\$377 million in foreign exchange to the PNG economy: one of the largest Forex contributors in PNG.

He said the Lihir transformation had seen a reduction in production costs as the project heads towards a targeted

million-ounce annual output.

In FY2018, this strong production at Lihir translated into K181 million in taxes paid to the Government, and K88 million in royalties flowing to national, provincial and local governments, and directly to lease landowners.

Lihir also invested K42 million in infrastructure, including schools, roads, bridges and Lihir airport, the Lihir Medical Centre, education, and water and sanitation. This was on top of the K11 million paid to the PNG Government through the Tax Credit Scheme.

Lihir's economic contribution flows across the PNG economy, with K766 million spent on local PNG suppliers and contractors last year.

Mr Ealedona's presentation had a strong focus on Newcrest's Safety and Sustainability pillar, and the social contributions that flow from the mine.

Noting that over 90% of Lihir's 5,000 workforce and contractors were Papua New Guineans, Mr Ealedona highlighted the training programs helping PNG em-

ployees to reach leadership and technical professional roles.

He said Newcrest's commitment to safety and sustainability begins with its workforce, helping employees, business partners and their families to be happy, healthy and safe at home as well as at work.

Mr Ealedona outlined Lihir's Healthy Business program, which empowers the Lihir workforce to choose a healthy lifestyle through nutritious food at site and tailored exercise programs.

And the Trupla Man Trupla Meri program promotes respectful relationships and changes behaviours away from violence.

Beyond the mine, Newcrest continues to support PNG's national development aspirations, for example, through teacher training in New Ireland and Morobe; upskilling community health workers in advanced maternity care; supporting women's empowerment programs; providing scholarships in midwifery and nursing; and continuing the Lihir Malaria Eradication Program.



# A new development pathway for the Frieda River Project

PANAUST announced a new nation-building development pathway for the Frieda River Project at the 2018 15th PNG Chamber of Mines and Petroleum's investment conference in Sydney.

Frieda River is one of the largest undeveloped copper deposits in the world and was first discovered half a century ago.

Among deterrents to its development have been its remote and rugged location in a high rainfall area, and lack of supporting infrastructure.

The project's new pathway focuses on the development of shared-use infrastructure that will support, and in turn be supported by, the mining operation.

Under this inclusive development approach, the Frieda River Copper-Gold Project (FRCGP) will be a core component of a transformative nation-building opportunity – the Sepik Development Project.

The Sepik Development Project con-

templates four interdependent projects that together will create a new economic corridor across the East and West Sepik provinces: The Sepik Infrastructure Project (SIP), the Frieda River Copper-Gold Project (FRCGP), The Frieda River Hydroelectric Project (FRHEP), and the Sepik Power Grid Project (SPGP).

The project aligns with the PNG's Government's development strategy and eschews an 'enclave' approach to mining development in which economic benefits are constrained.

The SIP underpins the development of the entire Sepik Development Project and will establish transport and communications infrastructure between Vanimo and Telefomin along the Border Corridor.

The FRCGP mine life extends from 18 to 33 years under the new development pathway.

The average annual output will be approximately 175,000 tonnes of copper

and 230,000 ounces of gold.

Copper-gold concentrate will be pumped from the Project site in West Sepik Province to the township of Vanimo for dewatering and export.

The FRHEP is a unique solution that combines the storage of water for reliable low-cost hydroelectric power generation and the permanent containment of process tailings and mine waste rock.

The hydroelectric facility will supply power to the FRCGP, with excess power available for sale to other customers.

The SPGP aligns with the electricity super-corridor concept planned under the PNG Development Strategy Plan to connect areas where electricity can be generated at lowest cost with a national power grid.

The SPGP could be installed to transmit power from the FRHEP to other customers to support the Government of PNG's power distribution objectives.

## Chamber recognises members in inaugural industry awards

THE inaugural PNG Chamber of Mines and Petroleum Industry Awards was launched at the 15th Papua New Guinea Mining and Petroleum Investment Conference in Sydney, Australia, on December 3, 2018.

The awards are aimed at recognising Chamber member companies for their efforts and initiatives in various categories. The 2018 awards covered four categories which saw:

### 1. Charlotte Mathews on behalf of



the Ok Tedi CMCA Women's Association being awarded the 'Recognition of Outstanding Women's Contribution in the resources industry in 2018'

2. Trans Wonderland Ltd being awarded the 'Recognition of Outstanding Leadership in Corporate Governance within a PNG Landowner Enterprise 2018'

3. ExxonMobil PNG being awarded the 'Recognition of Outstanding Safety Performance in 2018' for their achievement of over 13 million



manhours at the PNG LNG Plant without a lost time injury'

4. Oil Search Ltd being awarded the 'Recognition of Outstanding Humanitarian Initiative in PNG in 2018' for its significant assistance in response to the February 2018 earthquake.

The awards will be held annually and announcements of the winners will coincide with the Chamber's annual conferences which alternates between Port Moresby and Sydney.



# The 15th Papua New Guinea Mining and Petroleum Investment Conference in pictures.



*Prof. Paul Stevens, Distinguished Fellow at Chatham House, the Royal Institute of International Affairs in London*



*Kumul Petroleum Holdings Ltd Managing Director Mr Wapu Sonk*





*Sir Charles Lepani, KBE, APEC Authority Chairman.*



*Minister for Environment and Conservation Mr John Pundari*



*Minister for Petroleum Dr Fabian Pok*



*Ms Nicole Arditti, Senior Advisor, Lazard*



## Partnership to supply power to Port Moresby

A NEW 58-megawatt power station that will boost power supply in Port Moresby will be commissioned in February 2019, according to the Managing Director of Kumul Petroleum, Mr Wapu Sonk.

Mr Sonk told the 15<sup>th</sup> PNG Mining and Petroleum Investment Conference in Sydney the power project will be owned and operated by NiuPower Ltd, a 50:50 joint venture between Kumul Petroleum and Oil Search.

NiuPower will purchase gas from the PNG LNG Project as fuel for the gas-fired power station.

He said Kumul Petroleum's involvement followed a study in 2015 by global management consultants McK-insey which recommended priority targets for use of PNG's domestic gas resources. These priorities include – electrification for households, power supplies for mines and industrial enterprises, and as a feedstock for industrial processes such as the manufacturing of petrochemicals.

Mr Sonk extolled the benefits from multiplier impacts of industrial growth such as a proposal for a new cement plant and quick lime plant. Kumul Petroleum has signed a Memorandum of Understanding to supply gas to a project proponent, Mayur Resources.

Kumul Petroleum is also undertaking a concept study on national distribution of LNG from small stranded natural gas fields.

## PNG's petroleum fiscal regime competitive

PAPUA New Guinea's fiscal system is unique but still competitive, according to Santos PNG Operations General Manager John Chambers.

Mr Chambers said this at the 15th PNG Mining and Petroleum Investment Conference in Sydney in December when comparing the PNG fiscal system to neighboring countries Indonesia and Australia whilst also showing the importance of the fiscal balance between investor, state and landowner and why the PNG fiscal system was unique but still competitive.

His presentation showed how the PNG fiscal system worked and the impact of oil price on investor and Government take. In PNG, the State-take comes from tax (corporate tax and Additional Profits Tax) as well as from the Government's equity share in Kumul Petroleum. Further Government take is received from royalties that are split with the local government and landowners through the Mineral Resources Development Company. The neighboring nations do not have the provision for direct equity to landowners.

A key take-away is the importance of being able to attract investment in a world where capital is mobile. Investors and Governments both want to understand the nature of the resource; use local expertise as much as possible; have a minimal environmental footprint and; have a stable predictable cashflow.

The point of conflict is the natural tendency for the Government and the investor where both want to maximise their return. Ultimately too much Government take leads to investor failure

and lack of future investment. Too much investor take leads to national resentment and a difficult operating environment. Ultimately a nation's resources is worth nothing if not developed and so getting the fiscal balance right is important.

By showing cashflow profiles for a typical but hypothetical LNG project under the three different fiscal schemes from PNG, Australia and Indonesia Mr Chambers demonstrated the pros and cons of the different schemes.

Of particular note was that under low oil price scenarios, under the PNG system, taxation take is delayed and Government receipts in early years are dominated by the State take from Kumul Petroleum. Naturally under the low oil price scenario the investors return is also limited.

He said in summary:

- Fiscal regimes need to balance state and landowners' interests with investment incentives. High taxing regimes lead to no exploration or projects sanctioned. The resource is worth nothing in the ground.
- Stability is important. Projects require many years of investment, before returns are generated.
- PNG has a fair and reasonable fiscal regime in comparison with its neighbours. It is sufficient to attract investment and provides income to a State Company, to Landowners and also to the State through taxation.
- PNG has the only regime to provide landowners with a share of cash flows.

## Kumul Petroleum eyes participation in three projects

KUMUL Petroleum is positioning itself for involvement in three major petroleum projects – the Papua LNG Project using gas from Elk and Antelope in Gulf Province; expansion of the PNG LNG Project through development of P'nyang, and PNG's first offshore oil and gas development.

Kumul Petroleum Managing Director Wapu Sonk told the 15<sup>th</sup> PNG Mining and Petroleum Investment Conference in Sydney all three projects were moving towards their Final Investment Decision (FID).

He said the LNG expansion, involving three additional trains, each with 2.7 million tonnes a year capacity, should commence front end engineering and design studies in 2019 and reach FID the following year.

Mr Sonk said there was a window of opportunity in global LNG markets between 2023 and 2027 and the LNG projects in PNG would face multiple competing projects.

He said they wanted to maximise its entitlements in these projects by taking

up 22.5% of equity entitlement on behalf of the PNG Government.

He said the Paris-headquartered Lazard International Advisory Group has completed a financial feasibility study on behalf of Kumul Petroleum.

Kumul Petroleum would also focus its efforts on using the PNG Government Domestic Gas Market Obligation to maximise its ability to provide electricity supplies to PNG households and to encourage establishment of new industries.

# Dovetailing gas developments can avoid boom and bust cycle

GOVERNMENT approvals for the Papua LNG and P'nyang LNG expansion will allow these projects to be dovetailed in planning and production and to avoid a boom and bust scenario for the PNG economy, says the Managing Director of ExxonMobil PNG, Mr Andrew Barry.

Mr Barry told the 15th PNG Mining and Petroleum Investment Conference in Sydney that around US\$15 billion was needed for these projects, or about three times the annual PNG National Budget.

He projected that if prices averaged US\$60 a barrel, company taxes to the PNG Government could quadruple after 2024-26 when project debt would be paid off.

Mr Barry said an agreement has been signed with PNG Power Ltd on a study to generate 5 megawatts of power at Hides. In Port Moresby, the PNG LNG Project is already providing 25MW of power for the grid, with other third party development in progress to add an additional

58MW of generating capacity nearing completion.

The gas pipeline from P'nyang, which will connect with the current gas pipeline to Port Moresby, will allow for third party access at 50km intervals.

The overseas market for LNG has opened up in the past year and PNG needs to be in the front of the queue for development because there is a lot of potential supply seeking the green light for start-up.

Because of the eight-week disruption caused by the 7.5 magnitude earthquake on 26 February 2018, average production at the PNG LNG Project is forecast at 7.5 million tonnes even though production since recommencement of operations has seen output hit an all-time high rate of 9.2 million tonnes a day.

Mr Barry praised the outstanding efforts of the company's PNG staff, noting that global oil and gas analysts, Wood Mackenzie, has described the PNG LNG Proj-

ect as "one of the best performing LNG projects in the last decade".

During the plant shutdown in the aftermath of the earthquake, 50 ExxonMobil technical experts from various locations around the world assisted to get the project back online.

Another initiative undertaken by the company is being developed with various stakeholders including Innovative Agro Industry, Mineral Resources Development Company, Hela Provincial Government and Tari-Pori, Koroba-Kopiago and Komo Margarima local level governments is an agricultural project in Hela Province, targeting to positively impact as many as 5000 small holder farmers grow fresh vegetables and rejuvenate the local coffee industry.

Work is being undertaken with 700 households, including some 20 women's groups, to enhance food security and to unleash the income generating potential of local communities.

## Papua LNG expected to hit export markets by 2024

THE Papua LNG Project expects to complete its final investment decision by the end of 2020 with production commencing four years later, according to project operator, Total Oil.

Mr Jean-Marc Noiray, Managing Director, Total E&P PNG, told the 15th PNG Mining and Petroleum Investment Conference in Sydney, that the company has completed its landowner identification exercise and land usage compensation surveys.

Current equity holders in the project are Total (40.1%), ExxonMobil (37.1%) and Oil Search (22.8%). The government has the right to back in for 22.5% equity.

Mr Noiray said the project faces enormous challenges in terms of logistics, environment and in developing its community relationships. With expectation that a Gas Agreement will be signed by the end of the third quarter of 2019, Total anticipates commencing basic engineering studies in the second quarter of 2019. The project will involve construction of a single well pad at Elk and another at the Antelope field.

Pre-FEED (Front end engineering and



*A map showing the pipeline corridor of the Papua LNG*

design) studies are well advanced. Among the challenges to be faced are the disposal, through reinjection into the Elk gas fields, of acid gas made up of CO<sub>2</sub> (5.7%) and 200ppm of hydrogen sulphide.

The 325km pipeline corridor – 60km onshore and 265km offshore – will run from the gas conditioning plant in the Antelope field next to the Purari River to the LNG plant site near Port Moresby.

The pipeline corridor will carry a 40" free flow gas pipeline and a 10" condensate pipeline. Gas carried by the pipeline can be doubled to cater for further expansion by adding compression capacity.

Total has conducted 522 community engagements in 42 locations in Gulf Province to inform and update communities on ongoing developments, and investing in health and education infrastructure.

## Emergency 'war room' set up within 24 hours of quake

WITHIN 24 hours of the February 26 Highlands earthquake, Oil Search had established a 'War Room' in Port Moresby and a logistics base at Moro in Southern Highlands.

Later, a second 'War Room' was set up in Moro, acting Executive General Manager PNG Business Unit for Oil Search, Mr Robbert de Weijer said.

The epicentre of the 7.5 magnitude earthquake was around Hides, with about 200 significant aftershocks impacting the region.

Oil Search has committed K60 million to relief operations, carrying out dispatches of 200 tonnes of food and emergency supplies to 200,000 people and to 100 health centres.



*Oil Search relief teams distributing supplies to one of the devastated villages*

## LNG expansion to result in one trillion cubic feet of gas produced annually

OIL Search Managing Director Peter Botten told the 15th PNG Mining and Investment Conference in Sydney, that the proposed LNG expansion in Papua New Guinea could more than double the country's output, by which time PNG will produce one trillion cubic feet of gas annually.

He said the new production plant would require drilling of an additional 11 gas wells at a cost of US\$700 million over the next five years.

The new projects, involving the Elk and Antelope fields in Gulf Province and P'nyang, would jointly produce an additional 9tcf to extend the life of these assets to 2050.

Mr Botten said studies conducted by Oil Search provided confidence that with further exploration, PNG could discover an additional 30tcf.

Oil Search itself, the country's main oil producer and second largest equity participant in the PNG LNG Project, currently has 20 drillable targets. These have a potential to yield new discoveries containing some 15tcf.

Recent activity included intersection of encouraging good quality gas at

the Kimu 2 and Barikewa 3 appraisal wells with work still in progress on the Muruk 2 well, which is located some 11km from the discovery well.

Mr Botten said he believed the government and industry needed to look at new ways of addressing social challenges. Among these challenges is the fact that PNG's rapidly growing population was adding the equivalent of one Hela Province, in population terms, on an annual basis.

Noting that with half of PNG's eight million people under age 25, Mr Botten said during the 20-year life of a PNG project's contract period, the country's population will "almost double".

He said not enough was being done at present to address social challenges and that more needed to be done through construction of schools, roads, churches, and power generation and distribution.

"It is because of this that resource companies such as the PNG LNG Project has been forced to undertake agricultural activities, in support of local communities, in a way that didn't happen anywhere else in the world," he said.

## Total plans PNG's first ultra deep offshore well



*Mr William Gordon-Canning*

TOTAL Oil expects to drill PNG's first deep offshore exploration well in water depths of 2,000 metres, 60km from the coast, in 2019, according to Mr William Gordon-Canning, Total's Manager Exploration and New Ventures PNG.

Well site surveys have been completed for a well at Mailu 1, which will represent PNG's first ultra-deep offshore well. Environment studies are currently being progressed.

The well will be located in Total's 100% owned PPL 589, where 52,000km of seismic has been shot in a lease area covering 65,000 sq km.

Total, which is seeking to develop PNG's second LNG project, also has interests in another deep-water offshore block, PPL 576, in the Coral Sea and a 35% stake in PPL 339 in Gulf Province.

In a separate presentation at the Sydney conference, ExxonMobil Exploration's Asia Pacific Exploration Director, Ms Sarah Trend, said the success of the PNG LNG Project had put PNG at the forefront of PNG's hydrocarbon exploration program.

Noting that ExxonMobil had invested over K2 billion in oil and gas exploration in PNG over the past ten years, Ms Trend said the recently spudded Muruk 2 well extended over two exploration blocks, one operated by ExxonMobil and the other by Oil Search.

Ms Trend said most surface structures in PNG have been drilled and the search was now on for sub-surface structures using airborne gravity data and airborne magnetics, along with structural geology.

# Social and economic benefits continue to flow from the resources industry

The mining and petroleum resource industry continues to be a key contributor to Papua New Guinea's development goals, says the PNG Chamber of Mines and Petroleum.

The industry contributed over 26% of PNG's Gross Domestic Product and around 80% of the nation's export revenue valued at K23 billion (approximately US\$7.3 billion) as of September 2017.

The industry also directly employs over 20,000 people, with significantly more working in other sectors dependent on the industry, including landowner businesses.

"The resources industry has underpinned the PNG economy for decades, providing considerable social and economic benefits that have flowed to the government and the people of PNG," says Mr Gereia Aopi, President of the PNG Chamber of Mines and Petroleum.

"It continues to be a key contributor to PNG's development goals, investing millions of Kina in community development in sectors such as health and education, infrastructure including roads and airstrips, employment and training, and agriculture and livelihood programs."

The Chamber highlighted how the industry establishes and supports landowner companies and other PNG-based businesses that provide services to the project sites such as transportation, labour hire, catering, security, earthmoving, freight and logistics, janitorial services, agriculture, and livestock and livelihood programs to promote food security and agribusiness.

## **Mining Act**

Mr Aopi says stable government policies and a favorable investment climate are critical for future growth in the PNG resource sector, and that the proposed changes to the Mining Act would undermine PNG's investment attractiveness.

"While we support the PNG Government's prerogative to update the legislation to meet the challenges of the 21st century, some of the amendments would pose significant deterrents for investment in future mining projects and



*School children and teachers of the Simberi Primary School were proud recipients of books donated to the school by the Simberi Gold Mine in the New Ireland Province*

would be a serious impediment to the operation of current mines in PNG," said Mr Aopi.

"When investors assess the investment risk and return potential of a country, they look at the legislative and policy framework as well as the total cost of doing business, including the levels of existing infrastructure to support a project.

This calculation includes mining legislation, as well as taxation, fiscal and other policies. Considering this whole package, PNG has a high total government 'take' when compared to other countries.

"Independent modelling has shown that whilst PNG royalties in isolation might not be as high as other jurisdictions, the total take when including all taxes – including royalties, corporate tax, state equity and dividend withholding tax – is at the higher end of most countries.

"This is combined with a very low score on the World Bank's Ease of Doing Business scale," he added.

The Chamber continues to encourage the Government to undertake an independent review of the amendments, as envisaged in the 100 Day Plan, to ensure

full understanding of the economic implications of the revised Act on the economy of PNG.

## **Significant growth potential**

The Chamber believes there is huge potential for further development opportunities in the mining and petroleum sectors in the next three to five years, delivering benefits to the people of PNG, but these will not proceed unless investors are confident of the legal, fiscal and regulatory environment in PNG.

"The Chamber is committed to supporting internationally competitive legislation that ensures modern regulation of the industry, whilst encouraging and maintaining investment," said Mr Aopi.

"We want to work with the government to achieve a legislative framework that will not only meet the needs of PNG, but will also continue to encourage active investment in the sector.

"We are encouraged by PNG's leaders who have clearly stated their intention to set the right conditions to attract responsible investors to PNG. This is a smart leadership that has PNG's economic interests at heart."

# Home-grown resource industry graduates recognised by Chamber



*Adrian Gereg was Porgera Joint Venture's first graduate of their Compass Development Program in 2015*

The PNG Chamber of Mines and Petroleum has acknowledged the thousands of new graduates who undertake training programs with mining and petroleum companies in PNG each year.

With a commitment to growth and future prosperity of PNG, the resource industry provides significant investment each year to train employees, graduates and apprentices across a wide range of disciplines.

Dr Albert Mellam, Executive Director of the PNG Chamber of Mines and Petroleum, wishes to congratulate Underground Senior Mine Engineer, Adrian Gereg of Porgera Joint Venture (PJV) on his recent appointment to Mongolia.

Mr Gereg joined PJV in November 2008 as a Graduate Mine Engineer, which in 2015 saw him become the company's first graduate of their Compass Development Program.

Last year he accepted a role as a Development Coordinator at the Oyu Tolgoi Copper and Gold Mine. The mine is Mongolia's highest profile asset and is located in the Gobi Desert, bordering China and Russia.

"Being the first graduate of the PJV Compass Development Program in Porgera has greatly helped in the progression of my career to becoming a Senior Mine Engineer and securing my new role in Mongolia," Mr Gereg said.

The Compass Development Program offered by PJV is a combination of practical learning, application, mentoring and technology-based instruc-

tion that acts as a compass to help employees navigate their professional development, networking and career progression in technical and leadership roles in various modules of respective disciplines within the company.

"The amount of knowledge that Porgera Gold Mine can give to a mining engineer or any other profession is one of the main things I have liked about working for PJV. Almost every day you learn and or find out something new," said Mr Gereg.

PJV Mining Manager Mr Dale Burgess commended Mr Gereg for his outstanding work performance during his time with the company as he wished him well for his new role in Mongolia.

"I've worked with Adrian very closely as the Underground Manager and what struck me was the consistent quality in what he delivered. There's no doubt he'll do well," said Mr Burgess.

The Chamber also recognised participants in Newcrest Lihir's Graduate Development Program for their commitment to community development in PNG.

In 2018, the group of graduates had their first induction to the Trupla Man Trupla Meri (TMTM) anti-violence and behaviour change program. TMTM creates an opportunity for graduates to gain confidence in public speaking and sharpen other skills essential for taking leadership roles in the workplace.

"By delivering this ongoing training, the resource industry is providing Papua New Guineans with world-class skills that will ensure they can lead and shape the industry well into the future," said Dr Mellam.



*Newcrest graduates looking forward to the challenges that lie ahead.*

## About Us:

The PNG Chamber of Mines and Petroleum is a non-profit, peak industry association that represents the interests of the mining and petroleum industry and associated industries in Papua New Guinea.

The Chamber has a membership of about 220 companies. This includes most of the mining and petroleum companies active in PNG who comprise the Full Members. Associate and Service Members make up the balance of the membership and these are support companies with business connections to the mining and petroleum sectors in PNG.

## About the publication:

The *Mining and Petroleum Review* is a regular newsletter that aims to inform Chamber members, the private and public sectors including the Government, interested groups and the general public about developments happening within the PNG extractive industry.

## General enquiries:

The Chamber commissions and publishes a range of reports on the mining and petroleum industry in the country. A number of these reports can be downloaded for free from the Chamber website while others can be purchased by completing an order form which is available on the website. Forms can be returned to [info@pngchamberminpet.com.pg](mailto:info@pngchamberminpet.com.pg) or can be dropped off at Level 4, Habourside West, Stanley Esplanade, Port Moresby.

## Media enquiries and contributions:

For enquiries regarding articles in this newsletter or contributions, please contact Mackhenly Kaiok on email [MKaiok@pngchamberminpet.com.pg](mailto:MKaiok@pngchamberminpet.com.pg) or you can call +675 321 2988.

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