

# Palabora Mining Company

Investing – in mining, energy saving, communities and people.



The Palabora Mining Company (PMC) is one of Limpopo Province's most significant investors. PMC has been mining, concentrating, smelting and refining copper and other by-products in the eastern part of the province since 1956. Two feasibility studies in 2013 and 2014 underpinned the decision to extend the life-of-mine for a further two decades. PMC's investment into mining infrastructure brings with it major investments in the communities in which it operates and in people – who live near the mines, and the staff who work for the company.

## BRICS investment

A Chinese consortium acquired the mining operation in 2013 when there was a possibility that the life of the mine would be culminated and the smelter closed because it was outdated. Both of these scenarios would have led to many job losses. Soon after the sale transaction, the new owners fostered partnerships between Palabora Copper (the operating subsidiary of Palabora Mining Company) and Chinese companies in various areas such as economic development, trade, skills and technology transfers to extend the life-of-mine, refurbish the smelter and build a new floatation plant.

The latter two projects were implemented in partnership with China's Beijing General Research Institute of Mining and Metallurgy (BIGRIMM).

PMC is the member of the BRICS (Brazil, Russia, India, China, South Africa) Business Council Manufacturing Working Group as it wishes to contribute to a favourable environment for growth, technology exchanges and assist South Africa in building international cooperation platforms that embody the spirit and ethos of BRICS. PMC's success story is one that shows that amid cultural differences within BRICS countries, challenges and growing global economic uncertainties, cooperation by companies from BRICS countries can create a favourable environment for growth.

## Investing in mining

Once the decision was made to extend the mine's operations, large amounts of capital were committed to mining operations (R10.4-billion), construct an improved floatation plant (R261-million) and the refurbishment of the smelter (R878-million). The project to extend the mine's life is known as Lift II and it will take mining at PMC to 2033. The project aims to make use of a large historical stockpile to create further revenue.

## Investing in energy

PMC runs an Energy Management Programme that has resulted in significant savings at the mining operation. In the five years to 2017, the company saved R232-million through avoided energy costs with respect to electricity, coal and liquid fuels, and water usage. The company's investment in energy saving through 31 projects successfully implemented was rewarded with the award by Productivity SA of the 2017 Limpopo Productivity Award.

## Investing in communities

The decision to extend the life-of-mine has had an impact on surrounding communities and small businesses in the area. Through PMC's enterprise development and supply chain programmes, local small business owners have been able to open or expand their operations.

Over the years, PMC has invested more than R186-million in developing communities through the Palabora Foundation, PMC's community project execution partner.

Community projects include road rehabilitation and construction, and the hosting of sporting events. A 24-hour emergency health



centre, MarulaMed, was inaugurated in April 2018. The centre caters to the Phalaborwa community which does not have a private clinic.

## Investing in people

Education and skills development are among the most important drivers of the Palabora Foundation's programme. In addition, skills transfer within the staff, most of whom are drawn from local communities, is a company priority.

In professional cadres and senior positions, PMC aims to have 40% representation of Historically Disadvantaged South Africans (HDSA). Also included in the plan is the employment of people with disabilities.

PMC has attained and retained the Top Employer Certification for three consecutive years, from 2016 to 2018. The company aims to have at least 10% of the workforce representing female employees, particularly in roles that were traditionally held by male employees.

PMC Chief Financial Officer Dikeledi Nakene was nominated as the most powerful woman on the continent in 2017 at the "Africa's Most Influential Women in Business and Government Awards". In August 2017, Dikeledi won the national and regional awards for women working in the mining industry, which earned her a nomination in the continental awards. ■

# Mining a unique and valuable resource

A workforce of nearly 5 000 maintains a complex operation at Palabora Mining Company.



Palabora Copper (Pty) Limited is an incorporated operative subsidiary of Palabora Mining Company (PMC), a copper mine that also operates as a smelter and refinery complex in Ba-Phalaborwa Municipality, Limpopo Province.

PMC successfully extracts and beneficiates copper and other by-products and provides the local market with 85% of its copper requirements.

## Ownership

The mine is 80% owned by a Chinese consortium comprising HBIS, Tewoo, General Nice and CADFund through Smart Union Resources South Africa. The consortium has consistently reinvested in the mine and its facilities since assuming ownership. The rest of the percentage is jointly owned by the South African government through the Industrial



Development Corporation (IDC), a black empowerment consortium, PMC employees and local communities.

## History

Some two-billion years ago, a series of violent volcanic eruptions, which took place over a period of millions of years, gave rise to a rich body of minerals, which became known as the Palabora Igneous Complex. The unique ore body outcropping at a small saddleback hill (and two nearby volcanic pipes) contains a unique variety of minerals.

Smelting of copper occurred in the district prior to the discovery. Copper of remarkable purity was produced in the Phalaborwa area as early as the eighth century. The development of modern mining activity started at the beginning of the 20th century when several geologists noted the occurrence of the phosphate-bearing mineral, apatite, in the vicinity of Loolekop.

Since its incorporation in 1956, Palabora Copper (PC) has been South Africa's sole producer of refined copper, although is also mines other by-products such as magnetite, vermiculite, sulphuric acid, anode slimes and nickel sulphate.

## Mineral resource

The company owes its origin to the unique formation known as the Palabora Igneous Complex. Nowhere else is copper known to occur in carbonitites as is the case at Palabora Copper, and a host of other minerals such as phosphates, vermiculite, phlogopite, magnetite, nickel, gold, silver, platinum and palladium also occur. Palabora operates a large block cave copper mine and smelter complex employing approximately 4 990 employees for both Lift I and II, with a balanced and diversified workforce.

The refinery produces continuous cast rod for the domestic market and cathodes for export. Useful by-product metals and minerals include zirconium chemicals, magnetite and nickel sulphate as well as small quantities of gold, silver and platinum. Palabora Copper has developed a US\$410-million underground mine with a production capacity of 30 000 tons of ore per day.

Palabora also owns a nearby vermiculite deposit which is mined and processed for sale worldwide. Vermiculite is a versatile industrial mineral with hundreds of uses.

## Investment

Soon after the sale transaction to the consortium in 2013, the new owners fostered partnerships between PC and Chinese companies in various areas such as economic development, trade, skills and technology transfers to achieve ground-breaking and substantive results in extending the life-of-mine, refurbishing the smelter and building a floatation plant. To this end, the consortium approved R10.4-billion to extend the life-of-mine, R878-million to refurbish the smelter to ensure that PC continues to produce copper rod, and R261-million to construct the floatation plant to improve copper recoveries, operational efficiencies and lower operational costs.

The smelter refurbishment project and construction of the floatation plant are implemented in partnership with China's Beijing General Research Institute of Mining and Metallurgy (BGRIMM).

## Skills transfer

In addition to technology transfer, BGRIMM has contractually committed to employ 90% of unskilled labour and 80% of the semi-skilled labour from the Phalaborwa area and transfer new skills to PC employees who work at the smelter to empower them to operate and maintain the refurbished smelter once completed.

Before commissioning and construction of the floatation plant, PMC's Executive Managers and Senior Managers travelled to China for fact-finding and comparative-analysis missions on floatation

plants built by BGRIMM. As part of resource sharing, skills and technology transfer, BGRIMM has sub-contracted work to various South African companies.

## Going green

The company is a certified ISO 14001 business that subscribes to world-leading practices. Located directly adjacent to the world-renowned eco-tourism attraction, the Kruger National Park, PMC coordinates several onsite wildlife management and cultural heritage programmes as part of its ongoing sustainability drive.

Over the past years, PMC has retained a record of being one of the safest mines in South Africa and Africa. This is particularly due to our stringent SHEQ regulations and procedures in place and the effective management of contractors on site.

## The future

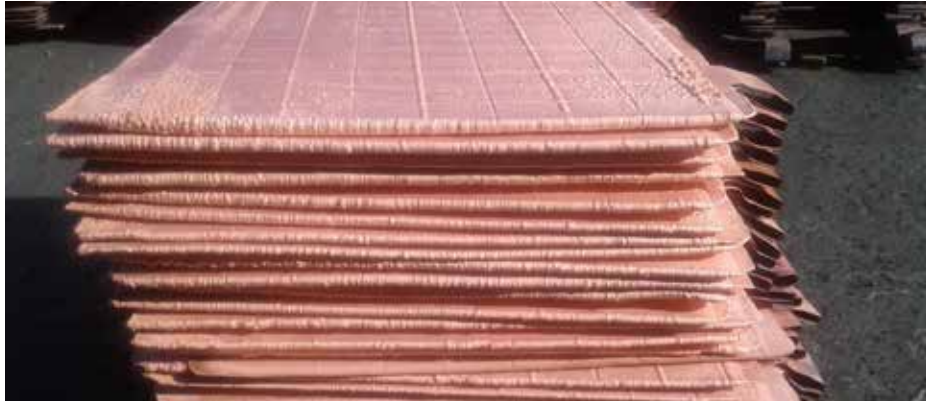
PMC is undertaking a life-of-mine extension project known as Lift II. The project aims to extend the life of the business up to 2033. The project includes the magnetite reclamation and beneficiation study aimed at creating additional revenue from the legacy stockpile. Approximately R10.4-billion is expected to be spent on finalisation of the project, which includes the smelter expansion and the floatation plant. ■

For more information:  
[www.palabora.com](http://www.palabora.com)

# Building a strong regional economy



Local businesses are getting a foothold as suppliers to the Palabora Mining Company.



Palabora Mining Company (PMC) is the major mining project occurring in Phalaborwa that is integral to the survival of Phalaborwa community. It is a key contributor to the local employment, directly and indirectly. The population of Phalaborwa is roughly 150 000 people and PMC mine employs 4 990 permanent staff, of which 3 995 are local. This represents more than 80% of the staff complement.

## Palabora Link: Enterprise and Supplier Development (ESD)

In March 2018, Palabora Mining Company announced the launch of Palabora Link, the programme which combines the company's support for and collaboration with local businesses in the Enterprise and Supplier Development (ESD) programme. This is building on the existing programme, which has been running for several years.

The Palabora Link Enterprise and Supplier Development Programme uses the supply chain and service requirements of the mine to benefit local businesses. The objective is to create alternative, sustainable industries that employ local community members and help to grow the local economy. A total of R40-million has been allocated over a three-year period to support the Enterprise and Supplier Development programme.

The Enterprise Development programme runs for 24 months and has 18 companies currently benefitting, while the Supplier Development runs for 36 months at a time and currently has 19 companies signed up.

In 2013, PMC initiated a Supplier Development programme aimed at incorporating members of the community into the business together with the five local traditional leaderships. The strategy aimed to identify businesses in the community that are keen to become part of a supplier base to PMC and to offer them an opportunity to become self-sustaining and expand their business beyond the immediate mining environment.

Opportunities to the value of over R100-million were made available to the local companies.

This initiative further strengthened the credentials of PMC and moved the company beyond compliance. The intention is to grow an industry of reputable small and medium-sized enterprises that can create further jobs and sustain the livelihood of Ba-Phalaborwa beyond mining.

Beneficiaries receive development assistance in the form of entrepreneurial training, funding support, administrative support or the promotion of joint ventures and partnerships which will result in substantive skills transfer.

The main categories for funding small enterprises are:

- Flagship projects: Manufacturing broadly defined and including agricultural enterprises (poultry, meat, cattle) and larger food businesses.
- Special projects: The three primary focus areas are the construction industry, hospitality (including guest houses) and bakeries (many of which are co-operatives).
- General projects: This covers any business that is oriented towards customer service, including hair salons, car washes, tuckshops, small traders and game shops.

## Health

In order to meet the needs of the communities and raise the standard of services, the Palabora Foundation worked with the SABS to put together a menu of services that would benefit not only a clinic but a Wellness and Disease Management Centre that will comply with the National Standard for Comprehensive Health and Disease Management. The structure of the facility was therefore designed to comply with SANS16001. The structure has been completed and the facilities are ready for beneficial usage by the communities.

In April 2018, a 24-hour emergency health centre, MarulaMed, was launched to cater for Phalaborwa community as there is no private clinic available in the area.

## Community

Taking into account the integral part played by the mine in relation to the community, PMC has started a number of initiatives aimed at improving the lives of the community. These include, road construction and rehabilitation, socio economic development projects, enterprise and supplier development projects, soccer tournament and many others.

## Employer of choice

Since its inception, PMC has been at the forefront of employment practices in the local mining industry. Palabora aims to remain industry-

competitive through its favourable conditions of employment. This is reflected in the utmost importance devoted to the safety and health of employees in order to remain efficient and profitable as a business.

The appointment of Historically Disadvantaged South Africans at professional and managerial levels has increased from 44.8% at 31 December 2010 to 58% at 31 May 2015, to 60% in May 2016.

The company has written and developed its code of ethics to follow strategic imperatives which include: providing a safe and healthy work environment for all employees and contractor employees; and practising sound environmental management to ensure the sustainable biodiversity of the natural environment within which it operates.

PMC acknowledges and respects stakeholders' interests and concerns, striving to be a leading corporate citizen within the mining industry and supplying a high standard of quality products and services, both reliably and responsibly, at national and global level.

Palabora always aspires to a "win-win" solution when resolving problems and experience has shown that this can only really be done jointly, with mutual respect and understanding. An important outcome of the close collaboration with unions has been the role they played in encouraging all employees to participate in the various medical aid schemes offered by the company. ■