

# Dumped tyres need new life

**Have you ever wondered what happens with all those massive tyres used on mining sites once they've reached the end of their working life?**

By Staff writer

**W**ell, the short answer is they get dumped. And governments across the world are running out of space to stockpile these environmental hazards.

In South Africa, as in many other countries around the world, it is government's responsibility to manage and clean-up the ever-growing mountains of tyres.

However, this is becoming increasingly difficult in South Africa as government flounders in the aftermath of Covid-19.

There is a solution though. But it lies in the hands of private sector and cannot be implemented without the necessary legislation put in place.

Canadian company Kal Tire's thermal conversion recycling facility in Chile started operating this year, and if Dan Allan, Senior Vice President of Kal Tire's Mining Tire Group could have it his way, he would build a similar facility in South Africa (and in other African countries) in double quick time.

"Waste tyres piled up at mining sites, especially in the Northern Cape and in the Platinum Belt, are becoming a growing concern, not only for mining companies, but for all the stakeholders. Kal Tire can provide a sustainable recycling solution," says Allan.

"The growing mountains of tyres is a great challenge and concern for our customers, and we have now decided to prioritise it and find a workable solution," Allan told me in an exclusive interview with *WhyAfrica*.

## **Joint Venture to advance recycling**

Kal Tire and Japanese company Mitsui & Co. recently formed a Joint Venture to advance

recycling solutions for mining regions around the world.

"There is a definite opportunity in the recycling space. This window of opportunity will only exist for a short while though. On our own, Kal Tire will find it hard to take advantage of all these opportunities. Through teaming up with a global powerhouse like Mitsui, we will be able to double those opportunities," says Allan.

"Mitsui's global reach, mining experience and commitment to affecting positive change gives us a path to scale solutions so we can reach many more mines much more quickly and help solve this enormous environmental challenge," adds Allan.

Kal Tire's thermal conversion recycling facility in Chile is the only operating facility of its kind, and the two organisations will collaborate to commercialise the plant starting early 2023.

Determined to provide scrap tyre solutions at the top of the recycling hierarchy in Chile, where mining tyre legislation was taking root in 2015, Kal Tire began the arduous process of studying, engineering and even building the equipment so it could offer thermal conversion recycling.

The process uses heat and friction to induce a reaction that converts tyres into their base elements (fuel oil, steel and carbon black) so they can be reused.

Located in the heart of Chile's mining industry, which Kal Tire has been serving for decades, the 20,000 m<sup>2</sup> Antofagasta plant consists of an area to inventory scrap tyres, cutters to reduce them in size, two reactors, oil storage tanks and carbon storage.

In late 2020, the first reactor passed its 'wet test', followed by numerous other tests. Full load tests were then carried out for the first reactor to process 20,000 kg of tyres.



**Kal Tire's thermal conversion recycling facility in Chile is the first operating facility of its kind.**

Kal Tire

The equivalent of five 63" tyres, the capacity of one reactor, will be converted into 6,500 litres of alternative fuel, 4,000 kg of steel and 8,000 kg of carbon black as well as enough synthetic gas to fuel the plant itself for seven hours. Local companies are already lined up to receive these reusable products.

According to Kal Tire's Pedro Pacheco, Vice President Operations, Latin America, mining companies like Antofagasta Minerals S.A. and Minera Los Pelambres have been very supportive. "These mines initially provided us with more than 2,300 tons of scrap tyres, becoming the first mining companies in Chile to recycle their ultra-class mining tyres with us.

### Effective legislation needed

"We spent a lot of time working with the Chilean government to receive environmental certification. Their level of due diligence is commendable, and we want to recognise their leadership in creating this legislation," says Pacheco.

"Kal Tire is heavily invested in South Africa, and we're obviously looking at South Africa as a very viable candidate for the next recycling plant. However, South Africa has become quite challenging to operate in over the last few years with legislation and the energy crisis being the biggest hurdles," says Allan.

"The positive side is that current legislation in South Africa is encouraging companies to think about remediation. We now have to figure out how to work with legislators to make funds available to third party solutions," adds Allan.

The other upside is that Kal Tire can generate



**Used tyres are a significant challenge for mining companies around the world.**

electricity through its recycling process and feed it back into the grid if required. However, electricity is needed to start up the plant, and according to Allan, the company is looking at renewable energy solutions to fulfil this function.

Together, Kal Tire and Mitsui will assist companies understand the value of recycling and act on Environmental Social and Governance (ESG) commitments. "We're seeing far greater uptake from customers when they explore ESG, including recycling, and we're also seeing more interest in carbon black solutions from manufacturers," Allan concludes. ●

# Secure supply and efficiency needed for mining growth

**An important focus of this year's Investing in African Mining Indaba will be on security and supply –and with good reason, according to Ralf Hennecke, Managing Director of Omnia Group company BME.**

By Staff writer

**T**he pressure is building for the mining sector to re-set its production capability in the face of growing future demand – especially in those minerals critical to global decarbonisation trends. Not only will this require more exploration and mine development in the long term, but it will demand more predictability and efficiency across the value chain.

“The coming year will continue to bring challenges with regards to mining supply chains around the world,” says Hennecke. “These obstacles have their origins in the economic lockdowns during the Covid-19 pandemic but have been compounded by the Russian invasion of Ukraine and the related disruptions.”

This has brought home the importance of secure supply chains in key inputs like explosives and blasting technology, on which mines rely to meet their daily output targets. PwC’s annual insight report SA Mine 2022 has also recently raised similar concerns about whether South Africa and other resource-rich countries will benefit fully from mineral demand growth.

This will depend, argued PwC, on their ability to address bottlenecks in supply and mine-to-market infrastructure.

## **Dealing with supply chain disruptions**

“As BME, we are always dealing with supply chain disruptions – caused by a range of factors from weak infrastructure to border efficiency,” says Hennecke. “Our success in serving customers stems from ongoing investment in local

infrastructure and skills, to strengthen local supply chains.”

Closer collaboration between mines and their supply partners was a key ingredient in building future stability in the sector, he adds. Beyond supply chain issues, the pursuit of efficiency in mining remains a vital theme.

This is because efficiency is directly relevant to energy saving efforts for decarbonisation, as well as for unlocking opportunities to gradually increase production levels.

“The digital age offers mining supply companies the ability to continuously develop our productive technologies,” says Hennecke.

“In our field – blasting and explosives – we have seen the significant impact that our technological development can have on mine safety and productivity, for instance.”

Hennecke highlights that these efficiency improvements were important to the long-term sustainability of the sector – as they improved the commercial viability and longevity of every project.

Greenfield projects to produce key commodities are scarce, he pointed out, and minerals like nickel, copper, cobalt and platinum group metals are likely to experience supply shortages if new projects are not initiated soon.

“It has become clear that more exploration, in battery minerals particularly, is going to be necessary to meet the needs of a lower carbon global economy,” he said. “Being a high-risk endeavour, exploration needs optimal levels of confidence from the investment sector – so every efficiency gain will help.” ●