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2023

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Kal Tire

Building a business and ESG case for tyre recycling

The enhanced focus on mining companies' environmental, social and governance (ESG) performance in recent years has shone a spotlight on their waste management practices and the possibility of building greater circularity into business models. From the Kal Tire whitepaper: *Turning waste mining tyres into value: Building a business case for OTR recycling*

By Marnus Verwey

Many mining companies perceive off-the-road (OTR) tyre recycling to be prohibitively expensive, but Kal Tire's Dan Allan, SVP Mining Tire Group, argues that it's possible to build a strong business case that supports profitability today, while helping businesses towards their sustainability goals.

The mining industry is one of the biggest global users of off-the-road (OTR), or earthmover, tyres. As a consumable product, these items have traditionally had a linear make-use-dispose trajectory, with few options for refuse or reuse.

However, the enhanced focus on mining companies' environmental, social and governance (ESG) performance in recent years has shone a spotlight on their waste management practices and the possibility of building greater circularity into business models.

This, combined with impending regulation in various mining countries is pushing organisations to take another look at the possibility of tyre recycling and how they can make a case for it.

There is a common misconception that tyre recycling is just an additional operating expense, one that companies would rather not shoulder when margins are already squeezed by low ore grades and high energy and labour costs.

But, by demonstrating leadership in this area, there is a chance to generate significant social, environmental and reputational value while helping businesses towards their near-term goal

of carbon neutrality and, in the long term, zero waste.

Management solutions are difficult

According to Dan Allan, Senior Vice President of Kal Tire's Mining Tire Group there are huge quantities of OTR tyres awaiting final deposition at mines around the world.

"At some sites, the stockpiles are so big that they're visible using tools such as Google Earth. Finding management solutions is difficult, because very few recycling facilities can handle mining tyres. Some ultra-class products weigh approximately 5t apiece, so they require specialist lifting equipment and transportation, in some cases, over long distances to reach the facility, and then dedicated shredders to reduce their size.

"Even in places which have recycling mandates for OTR tyres, often the firms that are authorised to collect the tyres are challenged with this because of the cost and logistics involved. They'd rather collect passenger tyres because they're easier to handle."

Although used OTR tyres are, in most mines, simply buried or used to create final landforms upon closure, some companies are doing the best they can to repurpose them in the interim. For instance, cutting the tyres in half and using them as safety berms along haul roads, or passing them to agricultural neighbours to use as cattle feed troughs. However, the problem remains that tyres don't degrade. While their component materials are chemically inert, regardless of whether they're onsite or sent to landfill, those tyres will remain in the landscape indefinitely.

The safety risks of used tyres

While waste tyres are chemically inert, there are still risks associated with storing them. The shape of OTR tyres means that their insides are cavernous and prone to holding water which can attract creatures, like spiders and snakes.

If those tyres need to be moved at any point, they could pose a safety risk to employees. Tyres are also flammable, and tyre fires can be hard to control and extinguish if an incident were to occur. But the biggest risks (and opportunities) are ESG related.

Investors, stakeholders and landowners are becoming increasingly interested in the way in which mining companies steward the land. While mining organisations are not yet required to disclose the quantity of used tyres held on site and the way in which they are managed, ESG metrics and disclosure tools are developing rapidly. In time, outdated practices, such as burying tyres, could pose a reputational risk for a sector whose environmental and social performance is increasingly under a microscope.

And, as a very visible form of waste (even buried stockpiles need to be marked in certain jurisdictions), used tyres may also make mining companies a target for disgruntled environmental groups and protestors.

Tyre recycling legislation

Ontario, Canada, was one of the first major mining destinations to introduce tyre recycling legislation in 2016. However, this mainly centers on shredding and repurposing the rubber.

There are also voluntary initiatives in other Canadian provinces. For example, Kal Tire's Mining Tire Group has partnered with Liberty Tire LLC to offer shredding services for earthmover tyres across western Canada.

South Africa also has a waste tyre recycling program under which a levy is imposed on newly purchased tyres to fund recycling, but manufacturers have indicated that the system there has problems which have led to tyres being stockpiled.

Chile has recently introduced legislation which specifies that starting in 2023, 25% of mining tyres must be recycled, this increases to 75% as of 2027, and to 100% as of 2030.

To enable this, Kal Tire's Mining Tire Group opened an OTR tyre recycling facility in Antofagasta in 2021 which can handle up to 20t/d of tyres, including ultra-class products.

The company has developed a unique thermal conversion process that uses heat and friction to convert the tyres back to their base elements — 100% of the material can be repurposed — and there are no harmful emissions. The solution is scalable and could be replicated in other mining markets.

Australia looks set to be next; Tyre Stewardship Australia recently received a federal government grant to deliver a business case that will improve OTR resource recovery in various sectors, including mining. The final report is slated for delivery in March 2023.

Regulations such as these are a step in the right direction. However, they are only applicable from the date of introduction. Many mines will have operated prior to this and built up a stockpile of waste tyres and/or could find themselves exempt due to incumbent regulation at the time of permitting.

While it's unlikely that buried tyres would ever need to be dug up, as more legislation is introduced, mining companies will need to evolve their used tyre management and mine closure practices in order to be compliant.

There is also a question of reputation. Companies that operate in multiple jurisdictions are expected to apply the same high standards and best practices to mines in unregulated jurisdictions as they would to those in regulated ones. In doing so, there is a chance for them to stand out as ESG leaders and to raise the bar for the industry as a whole.

Source: ***Kal Tire: Turning waste mining tyres into value: Building a business case for OTR recycling Read the full report in the WhyAfrica library by clicking on the link:***
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