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Heavy recycling at Vale

Initiative stirs up the chain that turns waste into social, environmental, and economic gains through recycling of 9,000 tons of tires per year

Have you ever wondered what happens to those giant trucks – the likes of a three-story building – used in mining as they reach the end of their useful life? At Vale, they transform into something else. From metal casing to tires, everything is reused. The scrap metal is converted to construction material, such as rebar. Tires up to three meters tall are returned as lagging rubber sheets or are turned into rubber chips, used in blast furnaces for the production of cement. The chips are an alternative fuel in this industry, which generally uses coal, oil and gas.

Every year across Brazil, Vale disposes approximately 9,000 tons of off-highway truck tires used for transporting iron ore from the mine to the processing plant. It is a pioneering model of reverse logistics carried out with manufacturers. The tires are sent to duly approved and specialized recycling companies, strategically installed next to Vale's operations to boost local development.

“This movement revolves around an entire chain of manufacturers, recyclers and consumers sharing responsibility towards the life cycle of products. Today, for instance, the disposal of tires costs nothing to Vale, that due to a 65% improvement on operational, acquisition, disposal, and technological innovation processes, while the remaining (35%) is a result of trade agreements with our partners,” explained Márcio Valente, Procurement manager at Vale.

In Parauapebas, located in the southeast of Pará, a local company is responsible for recycling 100% of the tires. After being cut into sheets measuring approximately 40 centimeters, the tires turn into lagging used in mining equipment, steel making, cement companies and ports. Vale also purchases and reuses those sheets.

To give an idea, the process of turning tires into small sheets has 26 steps. One of the steps uses a guillotine called “shark bite” – featuring a blade with teeth more than 30 cm high – that can shred an entire tire in 40 minutes. This is a proprietary equipment patented by Vale and the recycling company. After the sheets are produced, the scrap is chopped, then shredded into small pieces that go to the cement industry as an alternative fuel for blast furnaces, thus avoiding the use of new wood. Also, the steel lugs extracted from the side of the tires are used in the production of steel by the steel industry.

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