

## ***Press Release***

### ***Where the rubber hits the road: AES gets rubber manufacturers on the path to sustainable energy optimisation***

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For decades, South Africa's rubber has been a major material used in both the mining and automotive sectors. Now, with increasing pressure to address energy usage and optimisation, the intervention of Associated Energy Services (AES), a leading operations and maintenance service provider to the steam and boiler sector, could be a game changer.

AES Gauteng Regional Manager Jordan Smith, and Associate Director Operations Ray Lund - who work closely with rubber belting and tyre manufacturers in Gauteng and the Eastern Cape respectively - note that there is a strong drive in and amongst rubber companies to exchange fossil fuels for renewable energy sources.

#### **Steam for vulcanisation**

Steam plays an essential role in vulcanisation, an integral process at the heart of manufacturing of all rubber products: from tyres and conveyor belts carrying raw materials in the mining industry, to sealing components such as gaskets or protective wear such as wetsuits or gum boots.

With the application of steam, raw natural and synthetic rubber (which has the consistency of soft bubble gum) is transformed into its final durable - yet also elastic - form.

During tyre manufacture the green tyre is placed in a mould, into which highly pressurised steam is fed. This vulcanises the tyre in the curing machine, where its parts are compressed together, giving the tyre its final shape and durable qualities.

Lund notes that tyre manufacturing comes with stringent quality and safety requirements: "This means that good control of the steam and heat energy is required when a tyre is being cured."

A press system is used to manufacture rubber belts through the process of steam heating, which provides the pressure and temperature necessary to bond and cure the components.

Smith points out that steam provides a consistent source of heat: "If the steam temperature drops and does not heat all sections of the plates equally, that results in a poorly-bonded product which will not deliver the required strength and durability. When there is excess temperature and pressure, the belt produced is too brittle," he explains.

## **Steaming towards the future**

Although rubber production has changed very little over the years, the sector is now facing many challenges. Ever-increasing cost pressures - coupled with an industry move to greener suppliers - has driven the need for innovation.

“Recently, clients have started moving from cyclically heated presses to continued heated presses where plates are not cooled and reheated, between batches,” Smith explains.

The condensate generated in the manufacturing process can also be recycled, delivering water and sensible heat back to the boiler house for re-use.

The greatest change – and challenge – remains the replacement of carbon-intensive fossil fuels.

“With several clients across a range of industries already using biomass, we are in strategic discussions with rubber companies which are considering a move to various forms of renewable energy. This cannot be avoided - and entails a significant technological shift,” advises Lund.

## **When sustainability is a stretch**

Rubber manufacturers with global parent companies are at the forefront of this transformation, which entails striking a balance between the social governance commitments of a multinational and South Africa’s often harsh economic challenges. Change must be carefully managed to ensure long-term sustainability and not put businesses at risk.

Lund elaborates: “A fuel switch does, inevitably, necessitate substantial capital investment if clients want to run their plants effectively, efficiently and competitively. A large amount of capex is needed to realise those gains.”

He points out that generally, the technology required to burn biomass efficiently can be more expensive, adding that as more companies convert to biomass and demand grows, so too may the cost thereof.

“Unfortunately, there is a view that, because biomass is waste, it should be inexpensive. Typically, however, we find that locally-owned rubber sector companies are very challenged by the capital investment required and the costs entailed. Due to their global ESG (economic social and governance) commitments, their international counterparts are more inclined to consider workable solutions,” Smith observes.

## **A phased approach and impressive track record**

Smith and Lund both favour a long-term, phased approach which AES typically recommends to clients in the rubber sector. This begins with the ‘low-hanging fruit’ of quicker gains from optimising

the performance of existing plant and processes - which ultimately opens up the way for a switch to renewables further down the line.

Taking the phased approach has been successful: AES has a proven track record of delivering substantial energy optimisation-related improvements, and assisted a rubber sector client to reduce its CO<sup>2</sup> emissions and coal consumption by an impressive 11.03 percent - with zero capital investment.

Smith attributes this to AES effectively leveraging economies of scale, doing cost-effective procurement of the correct quality coal and spares for maintenance - and individually assessing each client's site to determine bespoke improvements and savings. Further to this, well-trained and operationally skilled staff on site 24/7 are key in successfully driving energy plant improvements.

"We have the expertise to ensure the best set-up and operation of the steam reticulation and energy plant on our clients' sites. Many businesses are looking for that extra percentage gain in efficiency, and partnering with AES is an effective way of unlocking that improvement," he says.

With input cost and energy efficiency - and even carbon emission tax savings - the rubber sector can make the much-needed transition from dependence on fossil fuels, Lund continues.

"We would like to encourage rubber sector companies to optimise their energy usage through a strategic partnership with AES. We can get them 'bouncing back' and on the road to energy optimisation and sustainability," he concludes.

***Ends***

***(946 words)***

**Note to Editors:**

AES is a pioneering, innovative, reliable and experienced steam and boiler operations and maintenance (O & M) service provider. The company has been in existence for over 25 years and is widely regarded as the leading O & M provider in steam and boiler operations and maintenance service in South Africa. Target industry sectors include power generation, chemical, plastics and rubber, timber, pulp and paper, textiles, food and beverage, dairy, poultry and mining.

AES's purpose is to assist industrial plants to optimise their energy production processes, and achieve energy usage best practices, through the following offerings: the mitigation of risk and the reduction of plant downtime; the procurement of efficient fuel combustion; assistance with the care of assets over the plant's lifetime; diversification of the plant's energy resources; improvement in site operations; and a reduction in carbon footprint.

AES subscribes to the highest ethics and operates according to high safety standards, process excellence and product and service innovation, exhibiting a commitment to quality, technology advancement and the development of human capital. AES invests heavily in training and the promotion of talented people on an equal opportunity basis into the industrial operations environment. The company believes that making a positive difference to communities and the environment is the best way to ensure that everyone benefits from good work.

AES is ISO 9001, 14001 and 45001-certified, ensuring that the company maintains a focus on achieving, benchmarking and optimising its processes and activities.

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