

Press Release

AES: a 'paper trail' of successful energy optimisation in South Africa's pulp and paper sector

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Thermal energy plays a pivotal role in both the preparation of raw materials - and the pressing and drying of the fibre layers - which ultimately forms the 3.8-million tonnes of paper products produced in South Africa each year.

According to Dennis Williams, Commercial Director at Associated Energy Services (AES), one of South Africa's leading operations and maintenance service providers to the steam and boiler sector, the R50-billion local pulp and paper industry faces exciting opportunities – but also some obstacles - as it seeks to boost competitiveness and contain costs.

“The sector has seen a lot of realignment in recent years. This includes the sale or closure of the less profitable pulp and paper plants - while the older ones are struggling to compete against more agile producers, which have already invested in newer technology,” Williams advises.

He adds that modes of production vary from large facilities which cover every step of the paper production process, through to smaller players only responsible for the value addition at the end of the process.

“Smaller, bespoke operations survive alongside mega-sized producers, and each one has its own particular strategy. AES can add value to them all because, ultimately, this is about achieving improved resource conservation, quality, cost-savings and operational efficiency,” Williams explains.

AES has worked with companies that process virgin and recycled paper, as well as everything from printing paper to cardboard, packaging and tissue, and Williams points out that there is plenty of 'low hanging fruit' which can be harvested to improve production costs, efficiencies and boost producers' bottom lines.

“With paper machines working at incredibly high speeds, processing hundreds of metres of paper or tissue per minute, steam usage needs to be accurately controlled, but also efficiently generated. A good quality, reliable steam supply not only minimises the risk of product not meeting specifications, but also ensures that machines do not have to slow down, adding to production costs.”

'Out of the box' sustainability

As it plays such a central role, energy is one of the largest input costs. Nevertheless, until now, many companies have invested in developing their production facilities and capabilities, rather than in steam generation efficiencies and optimisation. However, as a key energy user and environmental impactor - the paper and pulp sector needs to look more closely at sustainability, Williams maintains.

“The first step is resource conservation. Whether it is a kilolitre of water, a ton of coal or a gigajoule of gas, if less could be used - with the same outcome – that is a substantial ‘win’.

Primary facilities are also analysing how they can utilise bark or timber residues - or by-products from their process - to create energy - and many have innovative boiler plants. Efficient boiler operation is always a plus and will reduce emissions,” he explains.

In the South Durban Basin, for example - where there are a number of large paper companies (some of which AES has worked with) and where the eThekweni municipality is proactive regarding emissions control - the close relationship between profitability and pollution control is very evident:

“The municipality understood that, with an economic incentive, this becomes a self-regulating mechanism. They stipulated that, when applying for licences for new boilers, facilities had to be operated by a specialist energy plant operator. AES brings that expertise, and offers a solution which addresses all the legislative requirements, reducing the impact on the local community and environment. The crux is that - if there is a cost benefit and incentive - then pollution will be reduced.”

Another successful project for AES started with a steam plant at a packaging producer in Gauteng in 2007. Significant improvements in efficiency, steam supply quality and a boiler control system upgrade paved the way for AES to take over two steam plants at corrugated paper operations in the Western Cape and KwaZulu-Natal. Ultimately, AES has operated five sites for this client.

Sustainability: a new page

AES has conducted many technology assessments in pursuit of sustainability in the pulp and paper sector. One such assessment examined the potential of using a by-product from the tissue production process - which was previously going to the local landfill - as a fuel source.

“It is very high in moisture but includes fibre, so has energy value. Together with the manufacturer and a company from India, we examined this as a potential fuel source.”

Further change is on the horizon, however: several paper producers have natural gas as part of their energy mix and – with expected supply falling away in 2026 - these facilities may need to seek alternatives. AES is actively revisiting the use of energy at some gas energy users as a result.

A further area of interest is the use of generators in the mitigation of loadshedding, where waste heat recovery from these can be used to improve energy performance on the boiler side of the plant.

“AES was also the preferred service provider for an independent power plant using timber- and pulp-related products near a large paper mill. This particular project did not go ahead, however it demonstrates the role which we could play in similar future developments.

AES has a significant ‘paper trail’ of experience in the pulp and paper sector – and is strongly positioned to engage with those producers focused on optimising their energy efficiency and sustainability,” Williams concludes.

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(901 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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