

Press Release

AES assists industrial and manufacturing plants to optimise energy usage while going 'greener'

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The debate around 'green' versus 'greener' energy - in other words, 'green' energy usage versus the optimisation of energy efficiency - is a critical question for industrial and manufacturing plants today. In South Africa, where local industry continues to grapple with the knock-on effects of the ongoing power crisis, plants are understandably focusing primarily on energy efficiency, rather than ensuring that their energy sources and utilisation are as 'green' as possible.

However, there is a way to combine both. In fact, the 'green' versus 'greener' energy debate is more important than ever against the background of the current power crisis. This is according to Dennis Williams, Commercial Director at experienced steam and boiler operations and maintenance (O & M) service provider, Associated Energy Services (AES).

Defining the debate

Williams explains: "Energy efficiency seeks to optimise the efficiency of the energy conversion process - while 'green' energy looks to utilise a different fuel source for your energy requirements that is deemed to be 'green' or greener'. In short, energy efficiency addresses the optimisation of existing energy - irrespective of whether it is renewable or non-renewable – so that the plant can operate with less expenditure of energy, and without a reduction in quality."

Williams clarifies that changing to a cleaner fuel source can be slightly greener without necessarily being regarded as a renewable energy source. "A working definition of renewable energy is that it is deemed to be inexhaustible, for example solar energy; or that it is widely agreed to have no carbon footprint impact," he notes.

"And so, for example, if your plant is using coal, you can consider converting to natural gas which – despite still being a fossil fuel - has a smaller carbon footprint than coal. Alternatively, you can ensure that your plant uses *less* coal to generate the *same* energy for your production requirements. This can be achieved by optimising your production processes in order to use less steam, and combusting more efficiently."

Williams notes that AES is fuel-, solutions- and technology-agnostic: “We look for opportunities to diversify our clients’ fuel mix, while remaining completely agnostic and objective. In this way, we can assist a client in diversifying by having access to different fuel stream options.”

Energy usage best practices

AES Managing Director Chris Paterson clarifies: “AES has been assisting industrial plants with energy usage best practices for over 25 years, operating today across a broad range of vertical sectors where we promote optimised steam processes.

“We assist our clients to optimise their energy efficiency, reduce their risk and minimise the total cost of production throughout the operational life of their plants. This is all crucial in keeping the wheels of industry turning - yet this does not have to be at the expense of ‘greener’ energy options - even while facing South Africa’s current infrastructure challenges.”

Williams adds: “AES addresses the generation and supply of steam from coal, liquid fuels, biomass and biogas, allowing our clients to optimise efficiencies and future-proof their plants. For those who are pondering the issue of green energy versus energy efficiency, we are able to offer input, guidance and solutions.”

Infrastructure challenges versus carbon footprint

“It is, of course, desirable that South Africa should – in line with most of the world - embrace efforts to reduce its national carbon footprint. At the same time, however, we remain in the grip of the ongoing power crisis, which affects industry across the board and in turn negatively impacts the economy. As a country, we have committed to a number of international obligations around the reduction of carbon emissions. However, we do not have the same diversity as in other countries with regards to cost-effective alternatives for process energy streams.

It is consequently a juggling act for South Africa to emulate the rest of the world in reducing our carbon emissions; while still needing our cost-effective, higher carbon fuels, simply to keep the industry going. That being said, there are solutions which will satisfy the need for reliable energy usage and the need to reduce carbon emissions.”

Williams agrees that there is a potential solution - starting with the requirements of the ‘status quo’ plant.

Fuel quantity, quality and impact on plant

He explains that AES is able to assist in reducing the quantity of fuel that is used relative to the initial baseline: “As we are fuel-agnostic, AES can recommend an optimised fuel source,” notes Williams. “We are also able to mitigate fuel risk through an established fuel procurement offering. Being highly selective regarding the quality of fuel that we provide, we assist in plant efficiency improvements, which in turn results in a reduced carbon footprint.”

He adds that asset care is also a vital aspect which AES makes clients aware of: “The selection of fuel type not only impacts the efficiency of the energy conversion and supply, but the plant itself. Poorly-selected fuels can clog boiler tubes, leading to breakdowns and downtime; as well as having a long-term effect on other mission-critical plant components such as combustion systems.”

However, no matter which fuel type the client is using, our intention - at the start of the relationship – is to address energy efficiencies in terms of the conversion of fuel into a useful energy stream such as steam.

Then, as we become a trusted partner, we work with clients to realise their ongoing steam utilisation and production process improvements. We therefore achieve an optimisation in the energy efficiency cycle from two perspectives: we are generating the steam more efficiently and therefore using less fuel - while also giving the client better quality steam and expert advice.”

Realistic energy options

“We advise clients regarding their best available options,” he confirms, “including diverse aspects such as by-product utilisation, cogeneration, and fuel switching such as biomass or agricultural production residue use as an energy feed stock. Perhaps the client wishes to switch to an alternative fuel source as part of a longer-term transitional plan, and here again we are able to advise, specify plant, execute plant installation and operate the facility.”

He warns, however, that in consideration of the above, clients do need to be realistic, and not underestimate – or misunderstand – the energy requirements for their industrial processes: “For example, with a big thermal energy demand, use of on-site traditional renewables will simply *not* suffice. The energy requirement is too large. If supplied from offsite, there is the instability of the national grid to consider; as well as distribution constraints such as in the Northern Cape, where the distribution network is oversubscribed during daylight hours, and cannot deliver more electricity.”

That being said, AES is able to optimise energy efficiency of the 'status quo' plant – addressing current requirements; while also advising on 'greener' energy objectives over the longer term.

Paterson adds: "We are seeing industrial plants committing to new paths around greener energy options that might have cost implications at outset, but will have a good pay-off later. AES is able to assist local plants to optimise - and also 'green' - their thermal energy, despite current challenges.

We thoroughly understand the issues involved in the 'green' or 'greener' versus energy efficiency debate, and are able to offer advice, expertise, solutions and support," he concludes.

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Note to Editors

About AES

AES is a pioneering, innovative, reliable and experienced steam and boiler operations and maintenance service provider. The company has been in existence for over 25 years and, as such, regards itself as being the leading O & M provider in steam and boiler operations and maintenance service within the country. The industry sectors it operates in include power generation, chemical, plastics and rubber, timber, pulp and paper, textiles, food and beverage, and mining.

The company's purpose is to assist industrial plants that wish 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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