



Shane Pereira, business development executive for Lesedi.

Lesedi demonstrates confidence in EPC business

At the Africa Energy Indaba in Cape Town earlier this year, Lesedi, a leading South African EPC company and nuclear services specialist, expressed confidence for future business opportunities, while urging South Africa to take note of renewed global interest in small and medium nuclear power reactors.

Lesedi Nuclear Services evolved from Intens Engineering, which was founded in the mid-1980s. The company has been involved with maintenance and services at the Koeberg Nuclear Power Station from the synchronisation of the first unit to the Eskom grid in 1984.

Since 2001, Lesedi has executed over 150 modifications at Koeberg and remains engaged with the plant's life extension (+20 years) programme through the replacement of steam generators, the water storage tanks (PTRs) as well as other modifications.

Lesedi has since diversified into a major engineering, procurement and construction (EPC) company, having successfully completed numerous key projects in nuclear, industrial power, mining and oil and gas environments.

For the 7th consecutive year, Lesedi exhibited at the Africa Energy Indaba during March 2020 at the Cape Town International Convention Centre. This is the largest and most influential energy event in sub-Saharan Africa. The company also sponsored

and participated in the CEO Roundtable on Energy Efficiency Measures in the production sector, with CEO Francis Carruthers.

Lesedi also took part in the Africa Gas Forum, where Lesedi's manager of project development, Greg Nichollas is spearheading Lesedi's entry and growth in the oil and gas sector. Nichollas was a lead speaker at the Africa Gas Forum on the topic 'The Gas City of Mozambique and the investment opportunities'. The participation at the Energy Theatre Workshop also included Lesedi with insights on solar tracking technology.

Lesedi's diversified business now includes active engagement in multiple energy generation segments; in the mining industry; and with products and projects in oil and gas industries. Shane Pereira, business development executive for Lesedi comments: "Lesedi is one of South Africa's best kept secrets. We have the expertise and knowledge necessary to provide solutions for South Africa's Energy crisis and we also offer solutions for emissions control in existing coal power plants, as well as solutions for the mining industry.

"We are particularly proud of our long history at Koeberg Nuclear Power Station. The future of Koeberg itself is critical for energy stability in the country and particularly for the Western Cape. We believe Nuclear Power is a stable, cost-effective and clean source of power and that it should play a role in the future energy mix for South Africa," he says.

For new Nuclear to come online after 2030, Pereira says that South Africa should start the process as soon as possible, to retain critical nuclear skills and to contribute to energy stability, industrialisation and economic growth in South Africa. We have a strong nuclear industry in the country, as is evidenced by the successful operation of Koeberg for over 30 years and the 20 MW tank-in-pool-type nuclear research reactor Safari 1 at Pelindaba, West of Pretoria, which has been operating for over 50 years," Pereira adds.

In order to retain critical Nuclear Skills, Lesedi continues to pursue international nuclear opportunities. The company highlights the emergence and advancement of new technologies such as Small Modular Reactors (SMRs), which are under development in several countries and are reshaping the future nuclear energy landscape.

He further notes: "The World Nuclear Organization recently reported that 'the interest in small and medium nuclear power reactors is driven by a desire to reduce the impact of capital costs and to isolate power from large grid systems. The technologies involved are numerous and very diverse, but it is worth taking note of these developments in South Africa.'

He adds that South Africa could become a regional hub of Nuclear Expertise and Training, as several African countries such as Ghana and Kenya have indicated that they are pursuing nuclear power. Lesedi is already involved with the development of nuclear skills at several South African Universities. In 2017, Lesedi, together with the International Atomic Energy Agency

(IAEA), took part in a peer review at the University of the Witwatersrand and at North-West University's Post-graduate School of Nuclear Science and Engineering.

During the African Energy Indaba, Lesedi showcased its diversified business capabilities and current projects and products. Most notably:

- Lesedi is a well-established engineering, project management and maintenance solutions house that conceptualises, manages and implements complex bespoke engineering projects.
- It covers the full suite of engineering from mechanical, electrical, process, civil, control and instrumentation to structural designs.
- The company has vast experience in collaborating with original equipment manufacturers (OEMs) in a variety of contractual arrangements including consortiums, joint ventures, and sub-contracting.

Highlighting some of Lesedi's recently completed and current project successes, Pereira includes:

- Involvement in the construction of Eskom's open-cycle gas turbines, completed in 2009.
- Ongoing maintenance and project work at Koeberg and the Medupi (balance of plant) and Kusile power stations.
- Emissions' control and plant upgrades and modifications at various Eskom Coal Power Stations.

Lesedi now has a global footprint, having exported skilled maintenance at more than 15 nuclear plants across the world for over 15 years. The company is also looking to expand its focus outside of Africa to Saudi Arabia, which has its own nuclear aspirations, as well as Abu Dhabi, where approximately 150 South Africans with nuclear experience are currently working.

"Most recently, we have now completed an expansion project in Mozambique for the South32 Mozal Aluminium Smelter plant. We were awarded the contract to assist South32 with the expansion of its compressed air plant for the smelter," Pereira tells *African Fusion*.

The Mozal Aluminium Smelter is one of the largest industrial employers in Mozambique and is made up of an aluminium smelter and logistics infrastructure, just west of Maputo. Lesedi was tasked with upgrading the compressed air installation plant through the addition of an additional compressor with its own heat of compression dryer. A new evaporative cooling tower was integrated into the existing compressed air system, while the compressed



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air system had to be integrated into the overall Mozal ring supplies.

"Although projects such as these are prone to challenges, the commissioning went smoothly with no major setbacks. Beneficial use of the system was obtained by the end of January 2020 and hand-over took place in late February.

According to Leon van Wyk, Lesedi's project manager for the Mozal AP3XLE compressed air expansion project, the system is currently functioning as anticipated and "we are proud of the fact that we continue our legacy at the Mozal Plant. Through this project we supported well over a 100 local jobs at the peak of construction."

Lesedi is also looking to expand its footprint in Mozambique, most notably in the gas sector. "We are strategically aligning ourselves with local partners that will enable us to support the local market in Mozambique timeously and professionally," Pereira concludes.

Back in South Africa, Lesedi has also recently completed the design and installation of a 142 kW solar electric installation for its head office in Century City, Cape Town. The completed system is expected to generate approximately 177 507 kWh hours of energy every year.

Operating in the power generation, mining, oil and gas and renewable energy environments, Lesedi is a Level 4, 51% black-owned B-BBEE enterprise with its head office in Cape Town and regional office in Gauteng.

It employs more than 330 people, including qualified engineers and highly experienced project management professionals and technicians, all with extensive nuclear and industrial expertise as well as project support services capabilities in planning, cost control, administration, SHEQ, procurement, contracts, construction management and commissioning of personnel.

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