MechCaL Signs Deal to Retrofit 300 Anglo Platinum Fans

Pretoria, 3 November 2014: **Local fans and ventilation firm, MechCaL has been appointed by Anglo Platinum group to install 316 of their innovative fans at seven of the group's mines.**

The official order came through in July this year but delivery and installation of the fans has now begun and will continue until March 2015. According to Gavin Ratner, Director and Spokesperson for MechCaL the mines that will now benefit from MechCaL's technology include Dishaba, Tumela, Bathopele, Khuseleka, Thembelani, Siphumelele and Twickenham. MechCaL will be supplying close to 316 fans ranging from 22kW 762mm fans to the standard 762mm 45kW fans as well as a few of their 75kW 1016mm units for underground use.

MechCaL has become well known for their innovative designs and unique use of technology to manufacture fans for the mining industry. Their patented design is coupled with the use of light weight materials to create fans that boast increased efficiency, operational and energy savings, and lower mean time between failures. Ratner explains that the type of existing fans being used underground at these mines are cambered plate fans designs that that are traditionally very inefficient. "At best they perform at 60% efficiency and have in most cases been refurbished numerous times resulting in a degradation of performance," he states.

It was this unique technology that caught Anglo Platinum's attention says Gerhard van den Berg, Group Energy Engineer for Anglo Platinum. "We replaced 36 fans at our Union Mine with MechcaL fans as part of an Eskom Demand Side Management project. The success of the project prompted the company-wide roll-out of MechCaL fans," says van den Berg.

He says that the fans installed at Union Mine were aerodynamically superior to the fans that were used before and were proven to save 19 kW per fan when compared to the previous fans with the same service delivery. Van den Berg commented on MechCaL's ability to problem solve for their clients in the field saying: "Whilst the initial fans were made in composite materials, MechCaL then replicated them in steel, providing a much more robust solution while still maintaining significant power savings."

MechCaL's designs have been proven to provide 80% or better efficiency in performance and deliver higher flow rates. This results in significant savings in power drawn from the electrical grid. Added to this MechCaL has developed advanced VSD systems, which incorporate intelligent control that will enable ventilation on demand for the secondary fans. These systems will actively control delivery to ensure optimal system savings through reducing – or at times increasing – fan delivery to ensure that the mines are properly ventilated at all times. According to Ratner, this will not only ensure that the correct flows, temperatures and gas concentrations are adhered to, but will optimise the efficiency of the entire system.

When discussing the specific fans set for installation Ratner describes in detail their intentions for delivery on this project. "The majority of the fans will remain the 45kW units,

along with about seventy 75kW 1016mm fans. We have done numerous tests to prove that due to the traditional fans under delivery, the 22kW 762mm MechCaL fans could replace them resulting in huge electrical savings for the same air delivered. We have also looked at the possibility of changing the current duct sizes to reduce the airspeed in the ducts, and then also reducing the losses."

Ratner explains that when this change in duct sizes is coupled with an intelligent controller developed by MechCaL, significant savings are achieved. When working in underground space constraints are the limitation to the duct size, however in most mechanised mines, the haulage sizes can accommodate the duct increase in areas required says Ratner.

All of the above technology, once implemented will greatly benefit Anglo Platinum's mines however Ratner believes that one of the biggest indirect benefits will be in the mines experiencing fewer production stoppages as a result of the fan's overall superior performance. "Yes, the MechCaL fan is very efficient, resulting in direct energy savings and added to this, the long term mean time between failure of the system results in maintenance savings but what these also mean for the mines is a reduction in production stoppages as work can continue even if the fan is not running."

Overall Anglo Platinum is very enthusiastic about working with MechCaL says van den berg. "MechCaL has put optimised aerodynamic theory into practical use for the mining industry – almost like putting rocket science into practice. Quite an achievement, in my opinion!"

"This is obviously a huge boost for our sales team," says Ratner on what MechCaL will take away from this project. "Added to this, the additional accolade of being chosen to work with such a renowned international mining company will hopefully lead to recognition that MechCaL is a world player and in so doing pave the way for increased international sales."

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About MechCaL:
MechCaL Pty Ltd was established in 2002 to design and manufacture industrial fans. The company has developed proprietary software that allows for high efficiency designs to address the much-needed green economy to reduce CO2 emissions to the atmosphere through using less energy while providing the same performance. At their manufacturing facilities in Pretoria, MechCaL focuses on developing specialised fans made from advanced composite materials. Every fan is designed for a specification application tailored to suit the needs of each client by matching the required performance with maximum efficiency. MechCaL has been awarded the prestigious Technology Top 100 award five times and has been a runner up three times. We have also won the Enabling Award from Frost and

Sullivan. All of this success was garnered from reinforcing the advances in technology to enable the savings.
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