

Dewatering trends shaping pump choices in Africa

Dewatering on African mines is being reshaped by deeper underground workings, unpredictable rainfall and rising energy costs, influencing whether diesel-driven or submersible pump solutions are most suitable. Integrated Pump Technology's Jordan Marsh explains.

As African mines go deeper and rainfall patterns grow increasingly unpredictable, dewatering has moved beyond being a support function to become a strategic discipline. The choice between diesel-driven and electric submersible pumps is now influenced by evolving risk profiles, both underground and on the surface, as well as considerations of energy efficiency, maintenance and mobility.

On surface mines, the challenge is amplified by heavier storm bursts and the need to keep haul roads and pit floors stable. Short, intense downpours can cause sudden pit-lake rises and flooding that demand rapid response. In these situations, high-throughput diesel-driven pumps mounted on trailers or skids are often favoured, as they can be moved quickly to different locations without relying on fixed electrical infrastructure. The ability of auto-priming diesel pumps to handle fluctuating inflows without priming delays makes them indispensable for these unpredictable surface applications.

Mobility is a further consideration. Production teams require equipment that can follow the work, particularly in operations where water inflow points shift as pits expand. Diesel-driven solutions with built-in fuel tanks and controls reduce setup time and enable small teams to respond effectively. Pontoon-mounted units also provide reliable suction conditions despite fluctuating water levels, reducing the risk of cavitation and protecting pump performance. With surface water often carrying abrasive silt and fines, durability is critical, making pumps with robust wear-resistant components an important investment.

Underground mines, however, face a different set of challenges. Longer declines, wetter stopes and tighter control over electricity usage are driving demand for efficient submersible pumps that can operate continuously and reliably. Rising energy costs mean that submersibles sized precisely to their duty offer significant advantages, especially when coupled with automated level controls and start/stop systems to reduce unnecessary run hours. The compact design of submersibles also makes them well-suited to confined underground environments, eliminating the need for suction lines and reducing potential



Integrated Pump Technology supports mines with high-performance dewatering solutions designed to keep operations stable during heavy rainfall and changing pit conditions.

trip hazards.

In many cases, underground water is not only abundant but also dirty or chemically aggressive. Pumps must therefore be equipped with seals, cooling systems, and materials that can withstand abrasive fines and corrosive conditions without frequent maintenance. Built-in motor protection, leakage sensors and durable cabling extend operational life and reduce downtime.

Choosing between diesel-driven and submersible pumps ultimately comes down to the application. Diesel-driven auto-priming pumps are ideal for emergency bypasses, stormwater management and pit-lake dewatering where mobility and independence from the grid are crucial. Submersibles, by contrast, excel at routine, continuous underground operations or fixed surface installations where reliable electrical power is available.

The total cost of ownership further influences the decision. While diesel pumps bring fuel and engine servicing costs, they eliminate the need for electrical infrastructure. Submersibles, meanwhile, generally offer lower energy costs and fewer moving parts but require correct protection systems and monitoring to achieve maximum lifespan.

Jordan Marsh, Managing Director of Integrated Pump Technology, stresses the importance of not treating dewatering as an afterthought. "The best dewatering outcomes come from pairing proven technology with a

clear understanding of each mine's hydraulic realities," he explains. "That is why we supply world-class brands with long African track records – Grindex for electric submersibles and Godwin for diesel-driven auto-priming units – and the local application know-how to specify them correctly for reliable long-term performance supported by localised support across the region."

Specification errors can be costly. An undersized pump may result in flooding and lost production, while an oversized pump wastes energy and accelerates wear. Mines also operate in remote locations where logistical challenges make access to spares and technical support critical.

Marsh highlights this as another reason why the supplier relationship is so important: "Mines need pumps that start every time, run to duty and keep running. Grindex submersible pumps and Godwin diesel-driven units have earned their reputations in Africa for exactly that, reliability in tough conditions. Our job is to combine these technologies with rapid support, correctly specified accessories and a spares pipeline that keeps risk low and output high."

Integrated Pump Technology's approach focuses on ensuring mines receive not only the right pump but the complete solution. This includes correctly matched accessories such as pipework, valves and strainers as well as service models that balance cost and



Left: By supplying both diesel-driven and electric submersible pumps, Integrated Pump Technology enables mines to respond quickly and effectively to fluctuating water inflows. Right: Integrated Pump Technology helps surface operations maintain safe haul roads and pit floors through rapid-deployment diesel pump solutions built for high-volume stormwater control.

flexibility.

Commenting on rental options, he says these are often best suited to seasonal peaks or emergency response, while ownership



works for long-term, predictable duties.

Further, controls, monitoring and telemetry are increasingly integrated into solutions to provide real-time feedback on

pump performance, ensuring issues can be addressed before they become failures. "With climate variability, deeper mining operations and increasing emphasis on energy efficiency, dewatering in Africa is undergoing significant change. Selecting the appropriate pump is no longer a matter of preference but of detailed engineering and risk management," Jordan says.

"By working with a reputable, established company like Integrated Pump Technology that offers proven global brands such as Grindex and Godwin, backed by local expertise, mines can ensure they have reliable, efficient dewatering solutions that safeguard production and protect profitability," Marsh concludes.

<https://www.pump-technology.com>

Energy-efficient pumping for irrigation

BMG and Agrico have collaborated to enhance compatibility between BMG Synergy PI500 variable speed drives (VSDs) and Agrico's Web Control platform, giving farmers and industrial users across Africa new options for efficient, intelligent pumping and motor control.

"Through close collaboration and extensive on-site testing, teams from BMG and Agrico have verified the seamless operation of Synergy PI500 VSDs within the Agrico Pump Controller ecosystem," explains Mike Williams, BMG's Product Specialist for BMG Synergy VSDs in the Cape Region and Namibia. "This compatibility enables operators to integrate Synergy drives into Agrico's Web Control environment for convenient access to performance data and energy-saving tools."

"This development benefits irrigation schemes and agro-industrial plants, where pumping systems represent a significant share of total energy use. When used together, Synergy VSDs and Agrico's remote monitoring platform help users reduce energy consumption, simplify management and improve system reliability."

"Remote access to real-time operating data enhances decision-making, while integrated protection and automation functions reduce downtime. In one installation, an irrigation customer achieved energy cost savings of nearly 20% and eliminated unnecessary pump stoppages during peak season."

Advanced control and connectivity BMG's Synergy PI500 inverter range is designed for high-performance motor applications, offering vector control for synchronous, asynchronous, and permanent-magnet motors. Through automatic tuning and precise algorithms, the system maintains stable torque and accurate speed regulation across

a wide operating range.

With Agrico's Web Control integration, users can manage Synergy VSD installations remotely via GSM or Ethernet, accessing real-time data, fault notifications and scheduling features from any location.

Agrico's Web Control platform extends traditional starter and drive systems with cloud-based operation, monitoring and protection, supporting a wide range of compatible VSD brands, including the Synergy PI500 series.

Flexible pump control and energy optimisation are achieved via the Agrico Pump Controller, which manages up to nine pumps on a single manifold when connected to a master VSD. Functions, including dynamic energy optimisation, section control and multi-pump coordination, are enhanced when paired with a Synergy drive, ensuring precise pressure control and efficient power use. Users can configure automated triggers, receive SMS or call alerts for critical events and perform remote firmware updates.

The Synergy PI500 inverter features robust hardware with wide input-voltage tolerance, a protective coating against dust and moisture, and advanced cooling for extended service life. Safety and reliability are reinforced through EMC compliance, with built-in protection against overvoltage, undervoltage, overcurrent, and overheating. Peripheral options include braking units, reactors and PLC function cards, while communication is handled via RS485 and Modbus RTU for smooth integration with Agrico controllers. The Synergy PI500 VSD series also supports a full Hybrid AC and DC-voltage supply (Solar and Eskom) when installed in a BMG hybrid enclosure. This enclosure boasts advanced cooling features and DC-to-AC interference mitigation.

BMG's nationwide technical support, large stockholding for units up to 400 kW, and training and repair services ensure optimal installation and maintenance of the Synergy PI500 range. Agrico complements this with its dedicated Web Control help desk, assisting clients with connectivity and configuration issues.

<https://www.bmgworld.net/>



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