

# Gas supply modes to better suit customer requirements

*African Fusion* talks to Mwali Kawawa and Michael Ashley of Air Liquide about the multiple supply mode options open to users of the company's industrial gases and gas mixtures.

Air Liquide offers a variety of different supply modes for industrial gases and gas mixtures. "We strive to work with our customers to determine the most appropriate and cost-effective supply modes based on their ongoing and ever changing requirements," begins Mwali Kawawa of Air Liquide.

"Air Liquide can offer anything from Air Separation Unit (ASU) to cylinders and everything in between, from large to small liquid tanks; cylinder manifolds; and gas installations that include all the reticulation systems necessary to deliver gas to every point of use in a client's facility," he tells *African Fusion*.

Air Liquide receives numerous enquiries for gas installations and, with telemetry now becoming a commonplace requirement, Air Liquide's gas installation offer can now help clients monitor their usage in real time, with alerts being sent as soon as a gas needs to be replenished. "This can save money, hassle and stress," continues Ashley, adding, "Changing the supply mode can bring significant benefits, so we want to encourage all gas users to look at alternative options available that could better suit their needs."

At the starting point of Air Liquide's market leading global strength is its Air Separation Units (ASUs). "Here in South Africa we operate the biggest ASU in the

world, producing a combined 47 000 tonnes of oxygen every day.

"The production of our gases starts at our ASU, which compresses and liquifies air so it can be separated into the pure gases it contains, most notably, nitrogen, oxygen and argon, and with our latest ASU technologies, we can also recover rare noble gases such as krypton and xenon" Mwali Kawawa tells *African Fusion*.

"Here in South Africa, we have several ASUs strategically placed across the country, these are situated to supply 'over the fence' for large industrial steel producers, petrochemical companies and refineries, typically enabling Air Liquide to pipe a continuous supply of gas to directly meet the customer's process requirements.

"All of our 'onsite' ASUs are built with additional capacity to enable us to obtain additional supply and, in turn, to provide additional product into the market: the high purity oxygen needed by hospitals; the liquid nitrogen used for fast freezing, laser cutting and purging; and the argon gases and gas mixtures used for shielded processes. Gas metal arc and tungsten inert gas welding (GMAW and GTAW) are examples of some of the markets and applications supplied.

From the ASUs, Air Liquide operates a designated fleet of tanker trailers that transport high purity liquid gases to a central holding point for storage or to industrial manufacturing (IM) sites. "So there's a continuous supply between the ASUs and our Air Liquide gas processing and distribution centres, where we store the gases, mix different compositions and fill gas cylinders," Kawawa explains.

## Smart bulk supply

For industrial operations that require a steady flow of oxygen, carbon dioxide, argon or nitrogen in excess of 2 000 Nm<sup>3</sup> per month, Air Liquide offers onsite bulk distribution and storage solutions. "We install



With a 4 m<sup>2</sup> footprint, Skid Tanks are an ideal solution for gas consumers who require 1 000 – 3 000 m<sup>3</sup>/month of gas.

cryogenic storage tanks at clients' facilities and we deliver liquid bulk gases to replenish these tanks when needed," Kawawa continues.

These come with the vaporisation units needed to gasify the liquid at the appropriate pressures and flow rates for virtually any industrial application, while telemetry continuously monitors the gas levels in storage tanks so that deliveries can be scheduled in time to guarantee continuous supply.

## ARCAL Microbulk and Skid Tank options

For users of 1 000 to 3 000 Nm<sup>3</sup> of gas per month, the company offers two convenient supply options, ARCAL Microbulk and Skid Tanks, both of which are integrated gas supply solutions for those seeking to move away from using gas cylinders.

Neither of these cryogenic gas storage solutions require power and they can be fitted with telemetry for automatic replenishment. "For mixing our ARCAL™ range of welding gases, the ARCAL™ Microbulk solution comes with our pneumatically powered dynamic mixing panel, which has no moving parts and requires no power connection. The argon from the microbulk tank is mixed with CO<sub>2</sub> from a built-in manifold, so that any of our four ARCAL shielding gases, ARCAL™ Prime, Chrome, Speed or Force can be mixed and made available precisely and accurately at the point of use," he says.

The ARCAL™ range of shielding gases covers over 80% of all welding applications and this mixing panel delivers consistent gas mixtures from 1.0 l/min up to peak flow. "From a footprint of less than 5 m<sup>2</sup>, up to 27

welders can be supported from a single Air Liquide Microbulk system," Kawawa notes.

Skid Tanks, solutions, on the other hand, offer a more flexible range of options including:

- The LASAL™ range of high purity assist gases for laser welding and cutting.
- The full range of ARCAL™ welding gases.
- ALPHAGAZ™ speciality gases for laboratory and analytical uses.

With a 4 m<sup>2</sup> footprint, Skid Tanks are an ideal solution for gas consumers who require 1 000 – 3 000 m<sup>3</sup>/month of gas. "The key advantage of these tanks is quick and easy installation. The skid can be offloaded and located onto any flat surface. Thereafter and if required, the Skid Tank can be repositioned. It's a plug and play gas supply solution that offers cylinder-like flexibility," Kawawa continues, adding that, "as with all liquid bulk options, automatic re-ordering with telemetry is available."

Completing the range of liquid supply options are Air Liquide's dewars, which are portable cryogenic tanks that can safely contain liquefied nitrogen, oxygen and argon. These are typically available in 200 kg tank volumes.

Gas cylinders and multi-cylinder packs "One step down from one of our liquid-tank options, are our multi-cylinder packs (MCPs) or Bundles, which typically consist of a transportable pallet of 16 cylinders standing vertically," Kawawa notes, adding that these bundles are available to supply all ARCAL™, LASAL™ and ALPHAGAZ™ pure gases and gas mixtures.

"And then of course, our most popular mode of supply is individual gas cylinders, which generally have a 50 l capacity, but we also offer smaller sizes of 40, 20 and 10 l and even smaller medical oxygen cylinders for home use.

"As well as the traditional gas cylinder

with its non-return valve, which requires an appropriate regulator or flowmeter to be attached by the gas user, we also offer cylinders with our EXELTOP™, which includes an advanced and protected two-stage regulator with a flowmeter and on/off lever built in.

"All our industrial gases and gas mixtures are available in cylinders and we have a large distribution network to ensure that our customers always have the gases they need when they need them," Ashley assures.

## Moving to the best supply

Michael Ashley says that Air Liquide is constantly monitoring the gas usage of its clients with a view of helping them to better manage usage and costs. "We have software that can track the usage of every client and this helps us to ensure that the necessary quantities are always available within our supply chain. In addition, though, a client's usage history enables us to calculate and recommend an upgrade that could be more beneficial in terms of total gas costs, ordering and delivery convenience," Ashley explains.

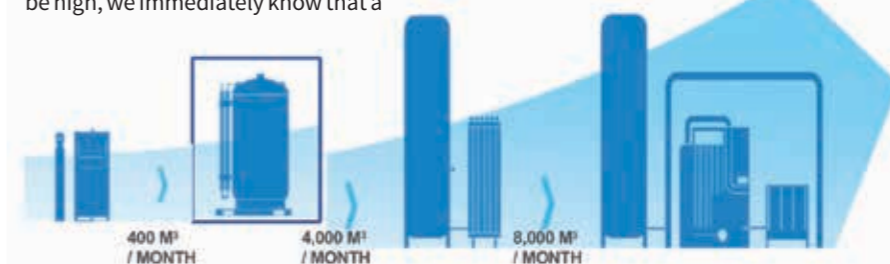
"We monitor the turnaround times of our gas cylinders, which allows us to recommend how many cylinders a client should hold and the ideal delivery frequency. Should we find the number of cylinders needed or the rotation rates to be high, we immediately know that a



The ARCAL™ Microbulk solution comes with Air Liquide's pneumatically powered dynamic mixing panel, which has no moving parts and requires no power connection.

customer might be better off upgrading to one of our liquid bulk solutions for further benefits from Air Liquide," he adds.

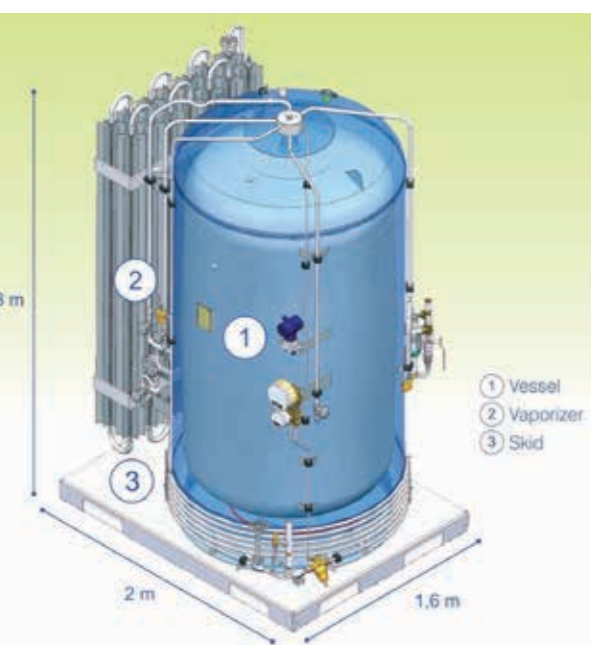
We are continuously looking at the supply mode in place to ensure that it continues to be the most appropriate and cost effective option for our customers' ongoing needs," Ashley concludes. ■



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The four ARCAL shielding gases, ARCAL™ Prime, Chrome, Speed or Force – shown here in EXELTOP™ cylinders with an advanced and protected two-stage regulator with a flowmeter and on/off lever built in – cover over 80% of all welding applications.



The key features of an Air Liquide Skid Tank.