

In the future, Afrox gas cylinders, onsite bulk tanks and gas analysers will be connected to the Internet, which will not only allow automatic reordering for just-in-time delivery, the data collected can also be used to analyse gas quality and usage trends, predict needs, identify leaks and much more. *MJ Strydom* tells the story.

## The connected future of gas supply

You won't believe what our Afrox gas cylinders will soon be able to do. They will know when the gas inside them is getting low and they can send the gas supplier a message to deliver a full cylinder as soon as possible.

Does this sound like science fiction from another planet? No, this is already being tested through a secure Internet portal between our customers and Afrox's gas ordering system. Hosted by a contracted telemetry provider, the portal offers real time updates on gas pressure and a host of other parameters.

Machine to machine Internet connectivity between gas users and their supplier will ensure that the gas they depend on never runs out. When using an Afrox HiQ gas mixture to cultivate an embryo during IVF, for example, not only does the temperature and humidity have to be very accurately controlled, but the whole of the IVF process will fail if the gas supply is interrupted. And this is the case for most health-related gas applications, the consequences of a gas supply failure can be catastrophic.

Traditionally, these critical applications are handled by keeping a back-up gas supply connected on site so that as soon as the pressure in the active cylinder drops too low, the backup cylinder is immediately available. By sending an alert to Afrox's always-online ordering portal, however, the risks of running out of a critical gas will be almost eliminated.

The advantages do not end there. Compressed gas laboratories will be able to use connected gas analysers. Locally collected information from any gas sample and any laboratory will be sent for comparative analysis online via a common central computer. There are hundreds of applications for gas analysis: determining the emission levels from industrial stacks, the health of a patient, the constituents and impurities levels in petrochemical products, the quality and purity of medicines from the pharmaceutical industry, the purity and accuracy of Afrox's medical and industrial gas product ranges, and many more.



Gas analysers can already be programmed to capture samples and record the analysis simultaneously and with certainty, bringing significant benefits in terms of costs, efficiency, reaction times, safety and end quality.

For special gases, connectivity and digitalisation will allow specific formulas to be ordered, mixed and checked online before delivery. Where purity of the gas is critical, the production or laboratory process system can be monitored by an analyser so that analysis data can be obtained and used as a reference for validation of the process in real-time.

By analysing time versus pressure data from cylinders or bulk gas supply systems, graphs can be created and detailed usage reports generated. This will give managers an excellent tool to see when and how the gas is being used and how much it is costing, making planning and accounting far easier. Once benchmarks have been established, this information can also trigger alarms as soon as leaks in the system emerge, reducing waste and saving money.

You may ask how much it will cost to connect your gas to the Internet'? Instead, maybe you should ask how much can be saved. How much damage will be done when a procedure or an industrial process has to be aborted or shut down because of a gas supply interruption. How much income will be lost, how much lost production time results, what are the reparation consequences and how will your reputation be affected?

The 4<sup>th</sup> Industrial revolution has arrived and, in the not so distant future, Afrox will be able to use it to help manage gas availability and use.

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