OIL & GAS IN AFRICA

Compiled by NADINE RAMDASS

Zimbabwean gas project spurs regional interest

NADINE RAMDASS | CREAMER MEDIA WRITER

PROJECT GASSED UP
Invictus Energy has made two discoveries of gas in the Cabora Bassa basin of Zimbabwe

Following the discovery of the Mukuyu gasfield in the Cabora Bassa basin, in northern Zimbabwe, oil and gas explorer Invictus Energy is confident further discoveries will be made in the basin. The company aims to tap into the growing demand for energy in Zimbabwe and neighbouring countries, and in anticipation of growing energy needs globally.

The basin was previously explored by oil and gas corporation Mobil Oil in the 1990s, however, no drilling was conducted, says Invictus Energy MD **Scott Macmillan**.

Based on the two-dimensional seismic data Mobil provided, Invictus, using modern technology, identified the Mukuyu gas prospect, as well as other targets, thereby enabling Invictus to refine its initial target area for its first drilling campaign, which was conducted in 2021/22.

Invictus has since confirmed two discoveries off the back of a second drilling campaign conducted late last year and has identified further prospects in the basin, which the company is aiming to explore, in addition to further appraisal of Mukuyu to prove a larger resource and reserves base from Mukuyu.

Prior to drilling, Invictus deployed new generation wireless node technology for its infill seismic surveys to provide better definition over the Mukuyu structure and refine the drilling location for the first well. The node receivers are quicker to deploy, and provide higher quality and data density, while having a lower environmental footprint.

The survey was conducted in partnership with seismic company Polaris Natural Resources, which has undertaken over 1 000 seismic projects and introduced the first 'low impact seismic crew' into Africa in 2008, Macmillan explains.

Zimbabwe's energy demand is steadily increasing and has not been met by new supply, which has curtailed economic growth as it impacts on industrialisation.

Currently, a significant proportion of the power generated in Zimbabwe is from hydroelectric plants, which can be affected by low rainfall and, thus, limit the power produced, says Macmillan.

He asserts that natural gas can play a significant part in Zimbabwe's future energy mix by allowing for the development of a reliable, consistent and affordable baseload power generating system.

Following an agreement with the Sovereign Wealth Fund of Zimbabwe, in August 2022, Invictus was able to increase the licence area of the Cabora Bassa basin project from about 101 171 ha to 360 000 ha.

Commercialisation

Having declared dual discoveries in December 2023, Invictus set about detailed testing and analysis of multiple gas condensate samples successfully retrieved to surface from Mukuyu.

"Initial results received in early March 2024 indicate a very high quality gas, with negligible impurities, which means natural gas extracted from the reservoir will require minimal processing," Macmillan says.

He notes that Zimbabwe – a landlocked country – has presented some challenges when evaluating commercialisation options.

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Gas industry undergoes shift amid depleting supply

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The South African gas industry is experiencing pressure as gas supply from energy company Sasol's Pande and Temane gas fields, in Mozambique, is expected to decline from 2026, while liquified natural gas (LNG) might be too expensive for the local market given international pricing and elevated demand, warns pipeline operator Republic of Mozambique Pipeline Investments Company (ROMPCO) commercial and customer affairs GM Motlokwe Sebake.

In August 2023, Sasol expressed that it would stop supplying gas to third parties at the end of June 2026 as a result of its depleting gas supply and would only be importing gas from the Pande and Temane fields for its own operations.

The Pande and Temane gas fields – operated by Sasol, is an unincorporated joint venture between Sasol, financial institution International Finance Corporation and Mozambican State oil company Companhia Moçambicana de Hidrocarbonetos – have an expected life of about 25 years and started production in 2004, with gas supply expected to start declining.

Therefore, third parties will need to look for alternatives gas supplies; however, he explains that there is currently no significant indigenous gas source in the region that can supplement declining supply for South African customers by mid-2026, when Sasol will cease supply to the third-party market.

While Sasol has made a gas discovery in the Bonito-1 exploration well, in Mozambique, which is not far from its existing fields, the discovery is in its early stages and would likely take between five to eight years before it is developed and able to supply gas, as opposed to being able to supply gas within the short 2026 timeframe, Sebake explains.

Further, despite various other gas discoveries in Mozambique, Sebake explains that these are still in the early stages of development, delayed by the instability in the Cabo Delgabo province and located too far away from the ROMPCO pipeline to be able to viably leverage the existing ROMPCO infrastructure.

Currently, ROMPCO has no intentions of extending the pipeline to the northern part of Mozambique where the discoveries were made, as doing so requires a significant and stable gas source, significant investment and a guaranteed customer base.

He explains that ROMPCO would only consider potentially extending the pipeline if gas offtakers reach an agreement that warrants the extension of the pipeline and subsequently requests the company to enable transporting gas to its intended destination.

Timely Action Steps

Without a stable gas supply, businesses and industries that rely on gas will have to look at alternative energy sources while many gas-related businesses may be forced to close, either outcome of which would impact the over 70 000 people employed directly and indirectly in the gas industry.

Sebake stresses that gas projects take a significant amount of time to develop; therefore, decisions in the gas industry need to be made in a timely manner.

"A lot of players in this industry have dragged their feet around making decisions, which is understandable given the amount of investment and long-term commitments they would have to make and I think it's partly the reason we find ourselves in this panic and also relying solely on one player to provide solutions," he says.

He notes that Sasol notified the market that its supply was declining in 2018, thereby providing time for new gas suppliers to enter the market and discoveries to be made to offset the looming deficit.

The declining gas supply is expected to impact ROMPCO, Sebake acknowledges.

In particular, he explains that the decline in gas volume affects the pipeline's ability to transport gas as the pipeline is designed and built for a specific volume of gas to be transported.

Sebake explains that the pipeline has operational thresholds, whereby if gas volumes fall below the threshold, the pipeline will not be able to transport gas efficiently owing to a lack of pressure.

Without sufficient gas volumes in the pipeline, the asset is at risk of becoming stranded.

Discussing alternatives, Sebake notes that LNG, which can be shipped into the country on LNG ships, presents an attractive alternative energy source.

However, he expresses concern that LNG might not be an affordable alternative as LNG is trading at high prices owing to international pricing dynamics and heightened global demand, particularly in Europe and Asia.

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"Gas can be difficult to monetise because it requires pipeline infrastructure to transport it to the end-user."

In this regard, the Southern African Power Pool (SAPP) – an agreement between 12 Southern African Development Community countries through their respective electric power utilities to facilitate crossborder electricity trading – presents an opportunity for Invictus to explore gas-to-power options, the products of which can be exported to SAPP offtakers without the need to build significant pipeline infrastructure.

"Our project is located less than 100 km away from three major interconnectors into the SAPP . . . [enabling us] to monetise large-scale gas into the electricity network and then export that over a wide region."

Discussing short-term commercialisation options, Macmillan says Invictus has started liaising with potential customers. The company is also working towards monetising early pilot-stage production, which it hopes to start in the next 12 to 18 months, following initial well testing.

The pilot-stage production aims to demonstrate an early-stage market for gas and generate revenue before the full field development starts.

Challenges

As a junior explorer, Invictus' primary challenge is securing funding, Macmillan says, elaborating that the oil and gas exploration industry is quite capital intensive and high-risk – challenges that have been compounded by the project being in a frontier basin.

However, he enthuses that the company has been fortunate to have the full support of its shareholders throughout the project thus far, as well as in the post-discovery phase of development. Invictus can now evaluate alternative forms of financing.

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