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Gas: South Africa's Rags to Riches Potential

By: Tilden Hellyer, Industry Analyst for Energy & Environment at Frost & Sullivan Africa

Overview

South Africa is on the verge of becoming a common topic of discussion in the global natural gas community. However, like so many ventures in the country, there are delays - some explicable and fair, others inexplicable and suspicious. What is certain is that if South Africa can rapidly position itself as a natural gas player, it will reap the reward in the medium to long term. One thing that can be said about the large oil companies present is their optimism that South Africa is still a viable investment climate. This cannot be sustained indefinitely, though, and investors may have already begun to evaluate their options, *writes Tilden Hellyer, Industry Analyst for Energy & Environment at Frost & Sullivan.*

The African continent was once thought of as the 'Nigeria-only' continent for oil and gas. Over the last decade, new players such as Mozambique and Tanzania have entered the market with immense potential for gas as both a source of power and a source of fuel in industrial, commercial and the residential sectors. Political, economic and social constraints all contribute to the failure of many projects being commercialised. This is particularly true in smaller countries that cannot achieve economies of scale in gas production and transportation. As a result, the timeline between the discovery of gas and its commercialisation is often measured in decades – a metric that few have the time for. Globally, gas has been more of a buyers' or demand-constrained market. This is ideal for those who need the natural gas who find themselves in an abundant market with multiple sources to choose from. The reversal of this is in motion and soon the demand will outweigh the supply from 2020 onwards. The SSA region has, according to 2014 estimates, up to 6.2 trillion cubic meters or 219.3 trillion cubic feet (TCF) of proven natural gas reserves. If produced evenly over 30 years, 1 TCF of gas (28 billion cubic meters in metric units) would contain enough energy to generate over 500 MW of power. In other words, Africa can fully power itself for the foreseeable future. This needs to be remembered at all times.

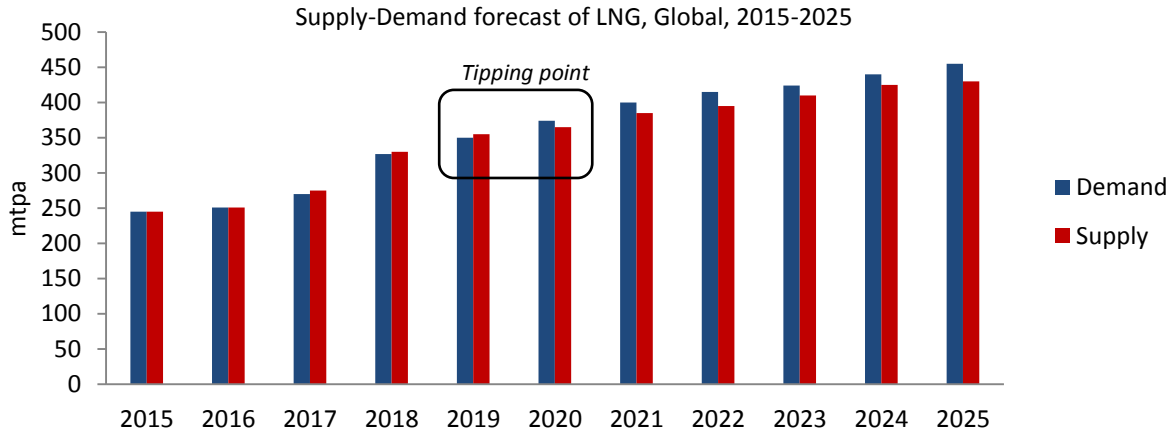

Figure 1: The positive tipping point for LNG suppliers (Source: Barclays, PwC)

Sources of Natural Gas in South Africa

South Africa, in particular, has an energy mix that has historically been dominated by coal, recently complemented by renewable and rounded off with nuclear energy. The recent IRP update in 2016 is yet to be ratified which means the contents, forecasts, and determinations are still under debate. What is certain is that there will be a contribution from gas; whether this will be from onshore sources; like shale gas, biogenic gas, coal bed methane; or from foreign nations, is yet to be determined.

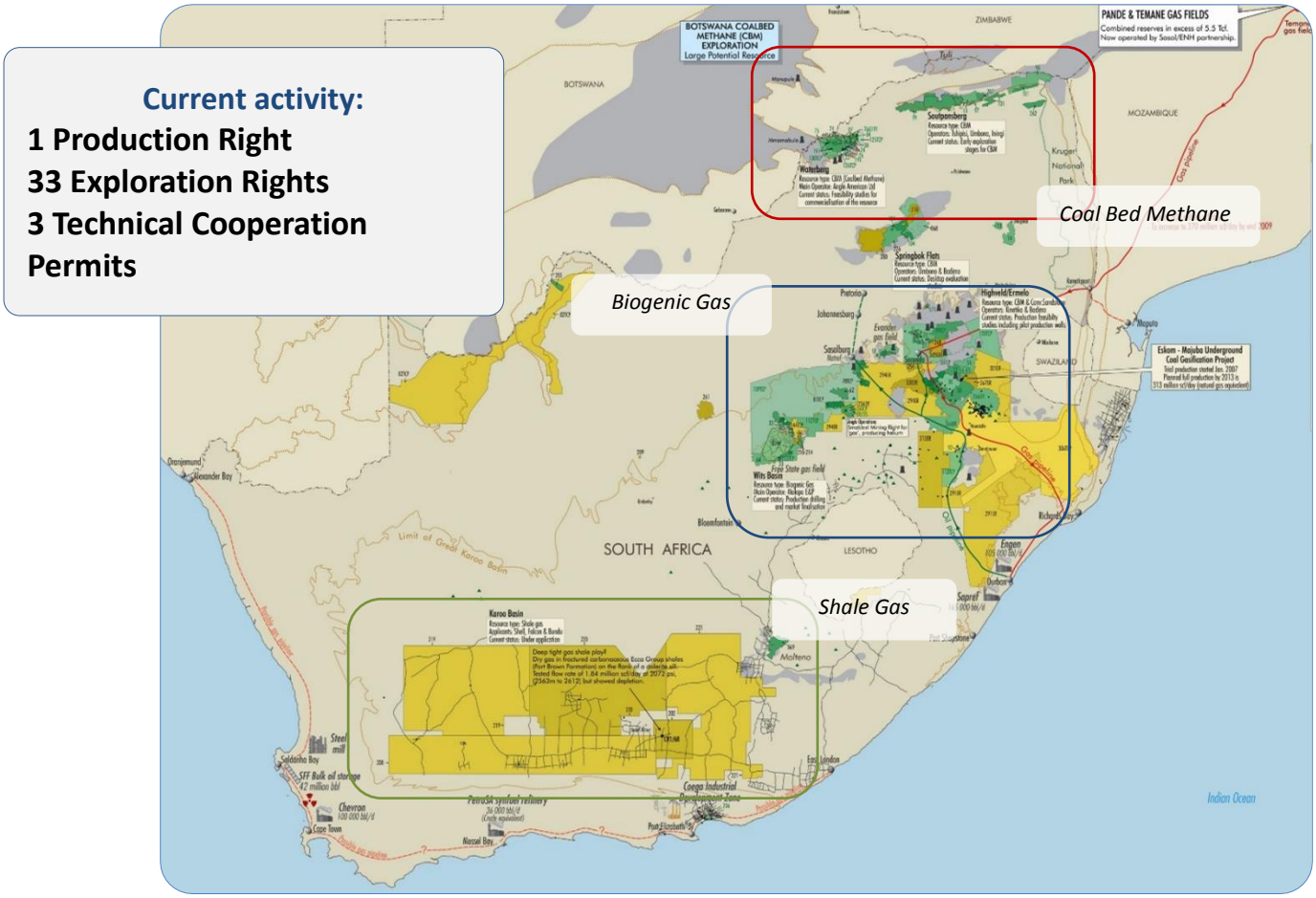

Figure 2: Current on-shore activity (Source: Petroleum Agency SA)

South Africa is potentially on the verge of a shale gas boom, should large volumes of commercially viable natural gas be discovered in the Karoo region. This will likely turn the region into a net exporter depending on the volumes discovered. As the volume is unknown, the benefits to the economy are speculative. The scenarios range from no-gas finds, small-gas finds (5 TCF) up to large-gas finds (20 TCF). Each of these scenarios will have vastly different outcomes, but planning is underway for either case. Foreign companies have submitted applications to explore these regions, but contrary to belief, these have not officially been granted to these companies. By sourcing shale gas, South Africa would be in the position to operate gas-fired power plants and supply new regional and foreign markets with locally sourced greener fuel. The sector is headed straight for staunch resistance from environmental activists which have merit in their concerns and the gas community needs to

take these institutions seriously. It was two small environment NGOs and not political parties or influential companies that dealt the nuclear industry its fateful blow which has seen it restart its procurement process.

In the other case that import is the most viable option, two carefully selected ports have been earmarked to receive gas via a floating storage regasification unit (FSRU). This prevents the risk of stranded assets, should the program be abandoned. The two ports were strategically selected due to centrality, demand, cost structures and socio-economic benefits. The key to the viability and development of the port is an anchor client. Ports to see this development will hail from the Eastern Cape (Coega: 1000 MW) and KwaZulu-Natal (Richards Bay: 2000 MW), while the Western Cape will no longer see any LNG developments in the short to medium term. The Western Cape will continue with LPG imports and, as recently as May 2017, saw a shipment of 2,450 tonnes arrive from Mozambique.

Current and potential markets

Industries in the north-western parts of South Africa that make use of natural gas from Mozambique imports via Sasol already exist. Future developments of the ROMPCO Loop Line 2 will see more molecules brought into South Africa from Mozambique - South Africa is to receive 212 million gigajoules of gas, compared to the original 188 million gigajoules it currently imports. What is certain is that the excess gas (after power generation) would be available for use in industries such as automotive, in gas-to-liquid plants as well as commercial buildings and residential homes. This market mostly comprises industries that make use of other fuels and would be willing to convert their operations to natural gas. Many industries have expressed varying levels of interest in natural gas for their benefits. Some of the least interested companies suggest that retrofitting equipment to accommodate natural gas is not viable at this time, or would only consider it when equipment has seen its valuable life through. This may take up to 10 years, but it could - fortunately - be in time for full scale gas operations.

Frost & Sullivan notes that the transportation sector is unique as it has been instrumental in the market growth of natural gas globally, particularly biogenic gas. South Africa is increasingly seeing the impact made when converting cars from petrol or diesel-dependant to hybrid with compressed natural gas (CNG). By substituting a portion of the fuel consumption in a vehicle to a cleaner fuel, the transportation sector becomes competitive in ways the diesel or petrol will not be able to compete. South Africa is seeing an increasing number of companies tapping into this market, such as CNG Holdings and Tetra4, and this demand will be a key driver in establishing a new gas economy.

Challenges to the Gas Economy

Difficulties expected to plague the gas economy stem from the lack of current large-scale use of gas, no existing infrastructure, and the role or relevance of gas as far as the government is concerned. The global market fails to see the oil price returning to its former level, affecting prospects around the world and in South Africa. It is expected that the price will remain 'lower for longer' despite the efforts from oil nations to decrease volume reserves.

The Gas-to-Power programme in South Africa, parallel to the Renewable Energy Independent Power Producer Procurement Program (REIPPPP), has been met with delays in recent years. The programme is waiting for the fundamental catalyst to start business – the release of the Request for Qualification (RFQ). This document is now one year behind schedule. Moreover, the Gas Utilisation Master Plan (GUMP), which outlines the country's plans to integrate gas into the energy mix through public-private partnerships, has yet to surface. Finally, the Mineral and Petroleum Resources Development Act (MPRDA) Amendment Bill has been in limbo since 2013 will expected progress by Q4 of 2017. Such a bill will see functions performed by Petroleum Agency of South Africa (PASA) be handed over to the Department of Energy. This could create an uneven playing field for competitors and allow for state interference. Delays such as these means investors, eager to make a move, will wait for clarity before making any. The below figure outlines possible options available to the National Council of Provinces (NCOP) based on amendments given by the Department of Mineral Resources (DMR) and the public. It is not clear which outcome is most likely, but a vote is to take place in October before handing over the finished product to the president before the start of 2018.

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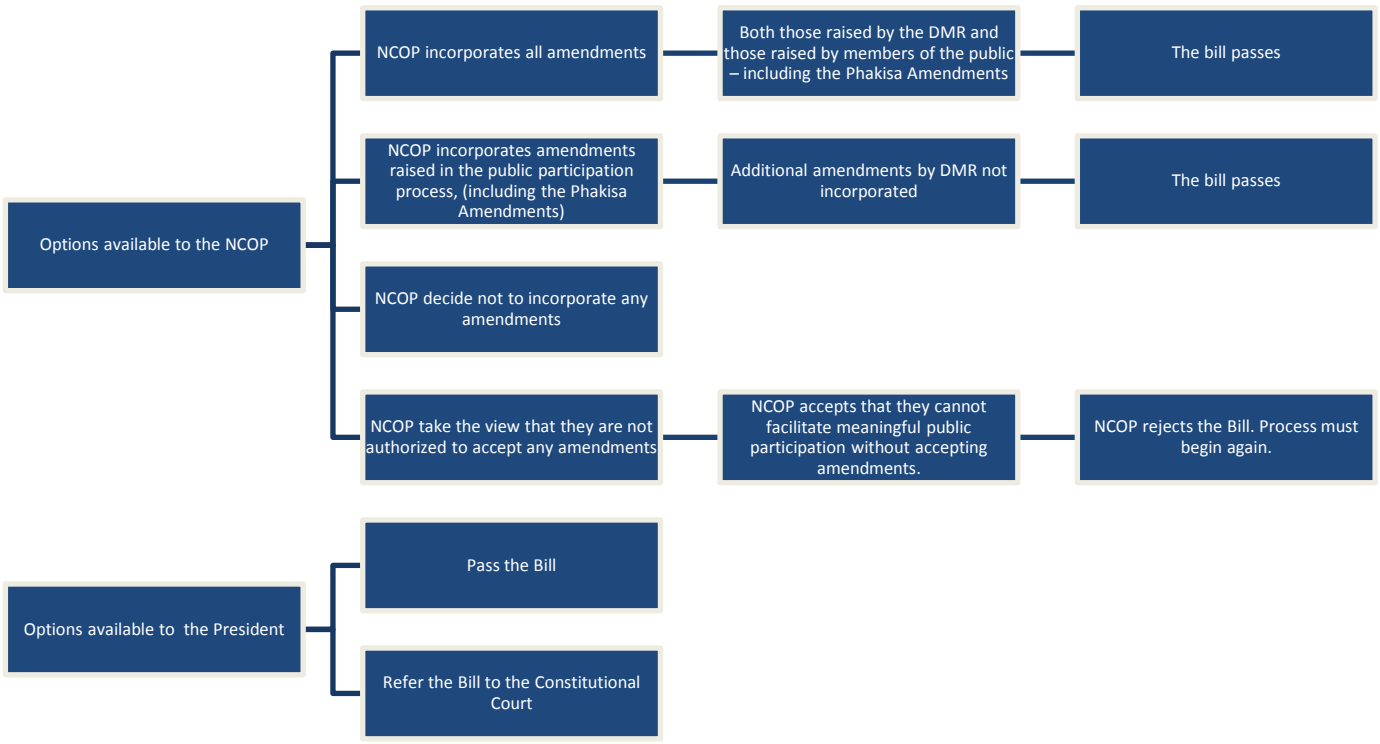

Figure 3: Where are the consequences for the oil and gas industry (Source: Norton Rose Fulbright)

Last Word

There has never been a more vital time to invest in the natural gas market than the present. Other nations in Africa are heeding the call to arms and fast tracking the industry developments. We might see Equatorial Guinea or South Sudan taking the lead for the infant gas nations. In order for momentum to build again, the government needs to speed up processes and address the concerns, delays, and uncertainty. South Africa is at risk of losing confidence in our ability to conduct business with global markets should the gas community act too slowly. Once these delays are resolved, concludes Frost & Sullivan, the age of gas may rush in, opening opportunities along the entire value chain and providing a much-needed boost to the economy.