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June 2020 Africa Business Group Newsletter: Guest Article
Recent oil and gas exploration activity offshore Southern Africa

Over-supply and a significant Covid-19 related decline in demand resulted in negative oil prices in April 2020 for the first time in history – an unexpected start to what was planned to be a busy second quarter of 2020 for oil and gas exploration within Southern Africa. As highlighted by Angus Rollo in last month's Newsletter, this crash creates huge challenges for countries, including Angola, in which oil makes up the majority of export earnings (OEC, 2020; Addleshaw Goddard, 2020).

Although the price of Nigerian benchmark, Bonny Light, has slowly increased to around \$40 a barrel since April, the extent to which the Covid-19 2020 oil crash will impact future oil demand is unclear (OilPrice.com, 2020). Transportation (passenger/freight road vehicles, aviation, shipping etc.) is the largest consumer of liquid fuels, responsible for more than half of liquid fuel demand in both OECD and non-OECD countries (U.S. EIA, 2019a). Significant decline in the transportation sector related to global lockdown pandemic measures (particularly travel restrictions) is therefore largely responsible for recent decline in demand, which will no doubt continue into July, hopefully recovering with time (IEA, 2020).

While this recovery period is currently unclear and oil and gas is currently experiencing delays in final investment decisions (FIDs), reductions in CAPEX and OPEX, cancellation of marginal oil and gas developments and cancelled or delayed licensing rounds, what is evident is that despite our much needed global drive towards a greener energy mix, the key drivers of oil and gas demand growth remain strong. Petrochemicals (used in most day-to-day products such as plastics, clothing, digital devices, medical equipment etc.) are forecast to contribute to more than a third of the global oil demand growth to 2030 and around half the growth to 2050 (IEA, 2018). Consumption of gas is expected to double by 2030, often seen as a 'greener' bridge/transition fuel, with 25-30% less CO₂ emissions per kW h than oil (BP, 2020). As LNG technology improves and capital expenditure required for liquefaction facilities decreases, countries with no domestic demand for previously redundant gas reserves may look to export, potentially making the gas market more fluid, encouraging spot pricing.

In 2017, Africa was estimated to hold proven oil reserves of around 125 billion barrels and around 7% of global proven gas reserves, totalling 487.7 trillion cubic feet (tcf) (Fircroft, 2019). This article highlights a small number of recent oil and gas exploration activities within the Southern African region which, when the oil and gas prices eventually recover and stabilise, will be areas to watch for continued investment and follow-on, future exploration.

'A new petroleum province offshore South Africa'

Precious metals and mineral products dominate South Africa's exports, gold, diamonds and platinum made up 32% of South Africa's exports in 2018 totalling \$36.42 billion (OEC, 2020). South Africa has limited proven oil and gas reserves, relying on substantial coal reserves (75% of Africa's total coal reserves) to supply domestic energy demand (U.S. EIA, 2017).

Total and partners, Qatar Petroleum (24%), Canadian Natural Resources (CNR; 20%) and Main Street 1549 Proprietary (10%), discovered the Brulpadda Field in February 2019 after the Brulpadda-I well, drilled within license block 11B/12B the Southern Outeniqua Basin of Southern Cape (Fig.1), discovered a 57-meter column of gas condensate within a Lower Cretaceous aged (c.120 million years old) reservoir rock, estimated to hold a billion barrels of oil equivalent (BBOE) (Total, 2019; Africa Oil & Power, 2019). The Brulpadda discovery, located 175 kilometres offshore, is the first significant find within the Outeniqua Basin and has de-risked the geology, opening up the potential for other sizeable prospects within the basin.

December 2019 saw the start of seismic survey acquisition over block 11B/12B, imagining the subsurface with the hopes of locating new leads and prospects. Total's planned drilling campaign for the first quarter of 2020 was pushed back until the second quarter. The first well (Luiperd-1) is planned to target the Luiperd prospect also located in block 11B/12B, estimated to hold 500 million barrels of oil, with plans for the rig to remain to drill the Blaasop and

potentially the Woudboom or Platanna prospects (PESGB March 2020).

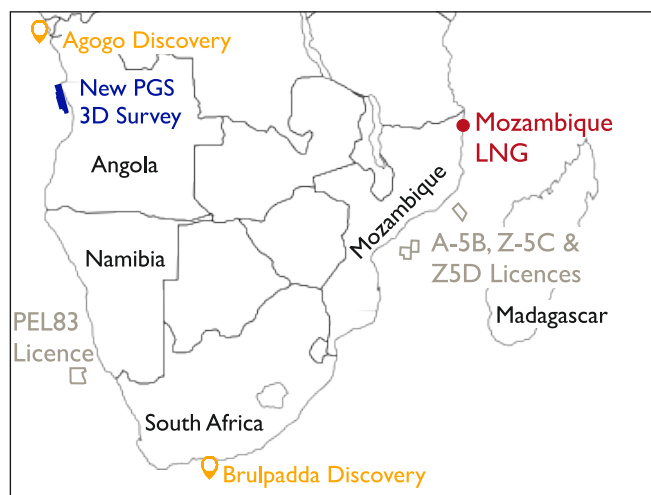


Figure 1: Map of Southern Africa region, highlighting recent oil and gas exploration mentioned within this article.

The area is not a mature exploration and production province, which could drive up development costs, although unlike many other neighbouring countries, South Africa provides potential for a domestic gas market within its power sector, which Brulpadda could supply for many years (Petroleum Economist, 2020). Yet-to-drill prospects are the wells to watch, along with FID for Brulpadda and any future discoveries, particularly as the South African government address fiscal terms within legislation expected this year, not directly addressed in the 'Draft Upstream Petroleum Resources Development Bill' published in December 2019 (SAG, 2019).

Continued exploration efforts in Angola

Angola, after Nigeria, is Africa's second-largest oil producer and exporter of crude oil, with estimates of proven crude oil reserves of c. 9.5 billion barrels (OEC, 2020; U.S. EIA, 2019b). In 2019, Angola produced around 1.4 million barrels of oil per day as a member of the Organisation of Petroleum Exporting Countries (OPEC) (Investopedia, 2020). Angola has seen renewed interest from energy majors after introducing a new independent regulatory organisation (Agência Nacional de Petróleo, Gás e Biocombustíveis, ANPG) and making subsequent reforms to investment laws in an effort to reverse declining production trends and attract investment (Investopedia, 2020). As a result, Angola is in a better position to thrive in a \$40/bbl, post-Covid-19, market with tax incentives which aim to promote gas exploration and the development of marginal discoveries.

Continuing successful deep-water drilling in Block 15/06 after the discoveries of Kalimba and Afoxé, Eni announced the Agogo discovery (Fig.1) in March 2019 after the Agogo-1 exploration well discovered 120-meters of oil bearing Lower Miocene (c.20 million

years old) sandstone reservoir, estimated to hold 450-650 million barrels of high quality oil in place (Eni, 2019a). In July 2019, Eni announced successful appraisal of the Agogo discovery with well Agogo-2 (3km north of Agogo-1), confirming the higher end of original in place estimates, 650 million barrels of oil (Eni, 2019b). In February 2020, the second Agogo appraisal well (Agogo-3) was drilled, increasing the discoveries in place oil estimates to one billion barrels (Eni, 2019c). Just 9 months after the discovery in January 2020, Eni reported start-up of the Agogo oilfield with production set to reach 20,000 barrels of oil per day within the early production stage (Eni, 2020).

In April 2020, Petroleum Geo-Services (PGS) announced completion of the acquisition of another 3D seismic survey offshore Angola (Fig.1), proving more coverage of the Kwanza Shelf, potentially unlocking previously overlooked oil and gas exploration opportunities in preparation for upcoming licensing rounds, still scheduled for 2021 (PGS, 2020).

Other oil and gas exploration news in Southern Africa

In the first quarter of 2019 the Polarcus Alima vessel began acquiring 3,000 sq. km of 3D seismic survey offshore Namibia over the currently undrilled license PEL 83 (Fig.1) operated by Galp Energia (PESGB, 2019a). Offshore Mozambique, 2020 exploration commitments were expected to commence with drilling of up to 3 wells in the first quarter within the deep-water blocks A-5B, Z-5C and Z-5D, operated by ExxonMobil (50%) and partners Rosneft (20%), state company ENH (20%) and Qatar Petroleum (10%), drilling has now been delayed until 2021 (PESGB, 2019b). In August 2019, Total acquired Anadarko's assets in Mozambique and South Africa including Anadarko's 26.5% interest in Mozambique LNG project (Fig.1) for \$3.9 billion, a largely de-risked project as long-term contracts with Asian and European buyers have already been established (Total, 2019).

A future for exploration in the region?

As the market recovers, stable and progressive fiscal terms and the continuation of ongoing reforms and will be the key to attracting more interest and investment from IOCs within the Southern African region. The region shows promise after recent significant discoveries, with exciting exploration potential in numerous offshore provinces. Yet-to-drill prospects within the Southern Outeniqua Basin of Southern Cape and upcoming licensing rounds in Angola are just two of the areas to watch for future exploration activities and continued investment.

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