

Total has announced a ‘significant discovery’ in their exploration of South Africa’s Outeniqua basin¹, the second in the region and a welcome boost to South Africa as it embraces a new transitional phase within its energy sector. The French energy conglomerate expressed optimism that the find could place South Africa on the world stage for the supply of natural gas condensate, a fuel widely identified as necessary in the transition toward a carbon-neutral future.

The Luiperd well is found 175km off South Africa’s southern coast in Blocks 11B/12B, adjacent to the widely hailed Brulpadda discovery in 2019. The 73-meters of gas condensate was found at a depth of 3,400 meters in the Lower Crustaceous Reservoirs, expecting to return a net pay that is double the size of the 53-meter, billion-barrel discovery at Brulpadda. The yield has already far surpassed the pre-drill expectation of a 500mn barrel find.

In order to navigate the heavy seas, Total contracted Odjfell’s specialist DeepSea Stavanger semi-submersible rig as part of a multi-year exploratory contract of the basin². The operation is a joint venture between Total (45%), Qatar Petroleum (25%), Canadian Natural Resources International (20%) and Main Street, a South African consortium (10%)³.

While the country’s direct equity is limited, the successive discoveries increase incentive to invest in an energy sector undergoing a regulatory shift. The recently updated Integrated Resource Plan (IRP)⁴ has established a more progressive framework that seeks to open-up the supply of energy to the market. Natural gas remains limited as a source of energy making up just 3% of energy consumed, however an increase to between 6-8% is expected under the IRP 2030 plan.

There are further indications that the region’s new gas finds have piqued the investment interest of major players as the government confirmed ongoing talks with Saudi Aramco over the construction of a multi-billion-dollar refinery in Richards Bay – where the Coega Special Economic Zone has been identified as the site for South Africa’s first LNG terminal⁵.

The Energy Council approached Khewzi Tiya, Standard Bank’s Head of Oil & Gas, for comment on the discovery and how it will affect South Africa’s economy as the country opens its energy market – specifically, how gas and these discoveries could aid the transition to cleaner energy sources;

“We see this as a significantly positive development, also noting that gas for us is an important transition fuel in the energy transition.

“For South Africa, this also reconfirms its potential as a source of energy supply inputs not just for itself but for a global market. Noting the risks that go with these exploration activities, these finds and the foundation they lay for future investment are of significance.”

Coal remains the dominant source powering most of the plants operated by Eskom, SA’s utility provider, yet as the market expands, the environment for carbon-friendlier fuels will become increasingly attractive.

As the South Africa energy sector begins a shift away from coal-heavy power production, it is incumbent on the government to find a path that mitigate the potential losses from a major industry downturn. And, while the coal sector is one of the country’s largest employers, the necessity to develop long-term

¹ <https://www.total.com/media/news/communiqués-presse/south-africa-total-makes-second-significant-gas-condensate-discovery>

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³ <https://www.africaenergycorp.com/operations/south-africa-block-11b-12b/>

⁴ http://www.energy.gov.za/IRP/irp%20files/IRP2010_2030_Final_Report_20110325.pdf

⁵ <https://businesstech.co.za/news/energy/439569/government-in-talks-with-saudi-arabia-to-build-new-oil-refinery-in-south-africa/>

energy security has only grown as Eskom struggles to supply sufficient capacity through their ageing coal-powered plants.

Gas-to-power plants can be converted from older diesel plants to use natural gas, while the renewable sector is expected to boom given the regional environment being beneficial to wind and solar power. These sectors are dependent on government being willing to seek an alternative to exploiting the abundance of coal, which accounts for roughly 80% of South Africa's energy needs⁶ – and natural gas could be that harbinger of change.

Developing a regional hub for gas between South Africa, Mozambique and Namibia that attracts continued investment from major energy players could secure the region's energy demands over the mid-term while renewable projects are developed. As major infrastructure projects come to fruition, there is a belief they will spur a new era of investment that can allow the much of the region to step out of its economic stagnation.

Southern Africa has struggled with the distance required to transport oil and gas to the region at a cost beneficial to consumers. However, in recent years neighbouring states Namibia and Mozambique have made a success of large gas discoveries – revealing a growing level of energy security that not only has local benefits but as Mr. Tiya predicts could have far wider, positive implications;

“We approach this from a potential investment perspective. Regional gas discoveries have a big role in enabling the development of related industries, increased regional integration, attraction of investment, impact on the wealth and well-being of people as well as to ensure better energy security, which is a critical part of economic development.

“We would like to caution, however, that regional gas discoveries are not important for use only within the region, they also enable these countries to be part of global value chains through which they can increase the level of national wealth through ensuring new human capital, technology and other investments.”

Gas will play an increasingly important role over the next 30 years as the world approaches the objective of carbon-neutrality by 2050, in line with the Paris Climate Agreement. A typical gas-to-power plant emits 50% less carbon dioxide (CO₂) than a new coal plant⁷, opening up a strong avenue for South Africa to mitigate emissions from their coal-powered energy supply.

The South African Department of Mineral Resources and Energy has acknowledged that the successful exploration of gas deposits along the coast is ripe for cooperative ventures in exploration and resource beneficiation with their neighbours on either coast⁸. Placing Southern Africa on the map of global gas supply requires the necessary development of ports and shipping routes that can directly influence the monetization of gas produced between the three countries.

The Luiperd and Brulpadda wells sit close to a 70km pipeline to Mossel Bay where the gas could be processed at PetroSA's gas-to-liquid refinery or transported for use at the adjacent 740MW Gourikwa Plant⁹, if the turbines are converted to use gas rather than diesel.

Investment could arrive soon as Sasol seeks to sell a number of their local and international assets, including their stake in the Mozambique-South Africa gas pipeline and their gas-to-power plant in Mozambique¹⁰. While their stake in the Lake Charles Project situated in the Permian Basin in the US,

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⁹ <https://www.eskom.co.za/Whatweredoing/ElectricityGeneration/PowerStations/Pages/Gourikwa.aspx>

¹⁰ <https://www.dispatchlive.co.za/africa/2020-06-27-sasol-to-sell-stakes-in-mozambique-pipeline-power-plant--sources/>

is also likely to be for sale after a troubling year for the refining giant¹¹. Sasol's 50% stakes in the pipeline and US refinery could release over \$5 billion.

The direct implications for South Africa are a little more unclear, as Khwezi explains;

"We can only talk in general terms of the possibilities at this stage as the nature of development is not yet clear and the sponsors are still making an assessment as per the public statements issued. This will depend on the most appropriate and sustainable commercial approach that the sponsors of the projects will take."

"But as we have already seen from the exploration activity, we would expect the progress to start to see the use of South African skills that exist; increased development of industries that can be integrated into this value chain; potential impact on energy solutions; development of related supply industries; fiscal impact for any related taxes and royalties that accrue from the developments; and investments in human capital that are so critical."

The Luiperd well by itself has employed 195 South African professionals for the exploration campaign since August; and is expected to generate R1.5 billion to the local economy through spending on housing, food, training and logistics services to and from the rig¹². The wider economic implications would be much larger.

The investments in human capital and skills will be the most crucial as South Africa pursues a technological leapfrog by embracing the promise of the 'Fourth Industrial Revolution'. Of which the energy sector will enjoy particular benefits – as the 'digitilisation' of power plants, rigs and renewable farms has become central to the improvement of production efficiencies in recent years.

While the Luiperd and Brulpadda wells are promising for their gas discoveries, the potential to inject fresh investment to periphery industries and encourage the development of international trade routes has far greater significance for the country than is readily apparent. South Africa knows all too well how resource discoveries can flip the trajectory of an economy; from diamond to gold to coal – utilising resources productively provides a rare opportunity to invigorate industrial capacity in South Africa.

¹¹ <https://www.bloomberg.com/news/articles/2020-10-02/sasol-to-sell-2-billion-u-s-chemicals-stake-to-lyondellbasell>

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