

Can Africa replace Russia as Europe's leading energy supplier?

Until recently, Russia has supplied Europe with an average of over 150 billion cubic meters (BCM) of Natural Gas annually, a volume not easily replaced through alternative means. However, Russia's invasion of Ukraine has forced global energy suppliers to seek alternative energy sources resulting in a scramble to secure supplies both in the short and long term.

On February 22, 2022, German Chancellor Olaf Scholz announced his government's decision to halt the certification of the \$11 billion Russian-owned Nord Stream 2. The project was established to provide Russia's main gas pipeline to Europe, most notably to supply Germany, which consumes 102 billion cubic meters of Natural Gas annually and is the largest buyer of Natural Gas in Europe.

The President of the European Commission, Ursula Von der Leyen, stated on March 8, 2022, "We must become independent from Russian oil, coal, and gas. We simply cannot rely on a supplier who explicitly threatens us."

The last five months have seen global leaders, led by the USA, comb the global energy supply chain in search of alternative suppliers to Europe. Unfortunately, to no avail due to production issues, shipping costs, and suppliers' existing commitments. According to Rystad Energy, at the start of the Russia-Ukraine war, the USA had over 102 BCM of Liquefied Natural Gas in flexible contracts that Europe could use, but shipping and costing issues prevent this from happening.

Could Africa meet the energy supply needs of Europe? Africa is home to approximately 7% of the world's Natural Gas reserves. However, tapping into Africa's reserves comes with a wealth of hurdles to overcome. Currently, in my opinion, seven countries can be identified as potential interim and long-term suppliers to Europe - Algeria, Nigeria, Libya, Egypt, Senegal, Angola, and Mozambique.

For decades, Africa's chaotic politics and instability have prevented Africa from taking its place as a prominent global energy supplier. A situation that continues with no solution in sight. Weak security, lack of infrastructure, and Libya's ongoing civil war also present issues when it comes to Europe considering Africa as a key supplier with any form of security.

In 2020, Italy was reported to be importing circa 62 billion cubic meters of gas annually, ranking them as the second largest importer of Natural Gas in Europe after Germany. According to Statista, a market data group, Italy's gas supplier importation figures in 2020 were as follows:

Russia - 28.5 BCM, Algeria - 15.1 BCM, Qatar - 6.9 BCM, Norway - 6.9 BCM, and Libya - 4.5 BC.

ENI, a leading gas supplier in Italy, has spent the last four months trying to secure contracts to replace Russia as their primary supplier of 28.5 BCM. In April 2022, Italy signed a contract with Algeria for an extra 9 BCM, followed by a contract with the Republic of Congo for 4.5 BCM per year.

For ENI, Africa is important, most specifically Libya, Algeria, and Egypt. However, Libya's instability and ongoing tribal conflicts and political divisions, combined with its outdated oil and gas infrastructure requiring billions of dollars' worth of repairs, have forced ENI to find more reliable sources in its quest to be Europe's gas distribution hub.

ENI and Italy's government are working together to try and secure the gas Europe needs. For now, Algeria appears to be the first choice. Algeria has a gas pipeline from Tunisia to Italy, the TransMed pipeline, making it the largest gas exporter in Africa at 55.2 billion cubic meters. The TransMed pipeline has the capacity to deliver 32 BCM annually. The extra 9 BCM from the contract signed in April brings Algeria to its full export capacity, creating opportunities for other regional suppliers such as Egypt to make up the shortfall.

According to Statista, three major African pipelines are currently bringing Natural Gas to Europe, accounting for approximately 21% of the gas exported to Europe. The aforementioned TransMed pipeline brings gas from Algeria to Italy (via Tunisia), the Medgaz pipeline connects Algeria and Spain under the sea, and the Greenstream pipeline connects Libya and Sicily.

Niger and Nigeria could also make an impact on Europe's needed energy supplies, but not without overcoming a plethora of obstacles. Nigeria has the largest reserves of Natural Gas in Africa, 206 trillion cubic feet. The NIGAL gas pipeline was commissioned in 2015 to bring gas to Europe. It runs from Nigeria to Europe via Niger and Algeria. At the cost of \$21 billion, the pipeline is 4,100km long and has the capacity to deliver 30 billion cubic meters of gas per year.

However, the project ran into problems due to political issues between Algeria and Niger, forcing the project's shutdown until 2021, when both countries reached a political agreement and resumed border operations. However, other security issues do remain unresolved.

Until recently, the Niger militant group Movement for the Emancipation of the Niger Delta warned that the future of the NIGAL's pipeline would remain questionable until demands for the welfare of the people in the surrounding area are addressed.

Libya is ranked 21st in the world and 7th in Africa in relation to its global gas reserves. Libya has 53 trillion cubic feet of proven gas reserves, accounting for less than 1% of the world's total Natural Gas reserves. According to Libya's official data in 2015, Libya produced 591 million cubic feet annually and consumed 158 million cubic feet. As a result, Libya had a surplus of 433 million cubic feet, yet only 250 million cubic feet were exported. Over 180 million cubic feet of gas reserves were available to be exported had the political climate allowed.

From 2017 to 2020, Libya's production and export capabilities increased dramatically, reaching 7.11 billion cubic meters in 2019, but exports fell short again in 2020 to 4.84 billion cubic meters of Natural Gas. It is important to mention that Libya's exports peaked in 2010 at nearly 10 billion cubic meters.

Regarding Liquefaction, the process of converting Natural Gas to Liquefied Natural Gas, Algeria led the way with the first commissioned terminal in Africa. Algeria's Arzew GL1Z Liquid Natural

Gas Liquefaction terminal started operating in 1964 and is currently owned and managed by Algeria's Sonatrach. Arzew operates at a capacity of 8 million tons per annum, all of which is committed through long-term contracts, with no expansion or upgrade plans in the near future.

Libya's Amtpa Brega plant opened in 1970 and was the second Liquefaction facility commissioned in Africa. Unfortunately, the Amtpa Brega plant has not exported any gas since 2005 due to necessary renovations, but all efforts to bring Shell back to complete the work necessary for production to resume have failed due to the civil war.

Most recently, though, Egypt has risen to have Africa's newest, most advanced, and most significant gas liquefaction capabilities.

In comparison to its neighbors, Egypt is a latecomer to the Natural Gas industry. However, its delayed entrance has given Egypt the advantage of developing plans aligned with the region's future needs. Egypt has two main Liquefaction terminals: the Idku and Damietta plants. The Idku plant opened in 2001 with a \$2 billion investment in partnership with Shell, Petronas, Edison, and Engie and is managed by the Egyptian government. The plant can export up to 10 billion cubic meters of gas to global markets annually. The Damietta plant started operating in 2004 with a \$1.3 billion investment in partnership with Italy's ENI and Spain's Fenosa energy suppliers to provide Spain and other European markets with needed gas supplies. The plant has an annual exporting capacity of 7.56 billion cubic meters per year. Collectively, the plants give Egypt the ability to export almost 20 billion cubic meters to Europe and other markets annually.

According to the U.S. Energy Information Agency (EIA), Egypt's Natural Gas discoveries in the Nile Delta, Mediterranean Sea, and the Western Desert provide it with 2.19 trillion cubic meters of proven Natural Gas reserves, ranking it as the third largest holder of Natural Gas reserves in Africa after Nigeria and Algeria.

Egypt's political stability makes it a front runner for becoming a regional gas hub by allowing producers such as Israel and Cyprus to use its Liquefied Natural Gas facilities to export gas to European markets. This pooling strategy has been in discussion since 2018. It could provide Europe with the market diversification it needs and Egypt, Israel, and Cyprus with the ability to combine their facilities, infrastructure, and expertise to advance their exporting capabilities.

Africa's internal security and stability problems continue to impact economic growth and progress in the 21st century. For the last 50 years, even with an abundance of oil and gas reserves, the continent has failed to reach a level of stability that would enable it to compete in the global energy supply market.

In 2021, Africa was confirmed to have over 125.3 billion barrels of Crude Oil reserves and approximately 148.60 trillion cubic meters of proven gas reserves, accounting for over 7% of the global reserves. With this much wealth, one would think the continent should be a paradise in the making, but unfortunately, it is not.

So, can Africa's leaders put their many differences aside and seize this golden opportunity to work with Europe and supply it with the gas it needs? In turn, enabling it to provide African countries with revenue to finance the infrastructure projects it desperately needs to support the growth of the continent.

A key question is whether Europe can depend on Africa as a solid partner to supply its gas? In my opinion, the answer is no. The European Union's \$17.90 trillion economy cannot depend on countries like Libya, Niger, Mozambique, Congo, or Algeria to take Russia's place.

Unless aggressively addressed by the government, Algeria's ongoing struggle with its people's demands for political, social, and economic change pose a significant risk to its future stability, which would highly impact its oil and gas sector.

As for Libya, it seems that the European Union has already given up on the possibility of it coming back as part of the world community, at least in the short term. It's continuous descending into chaos, and civil war is fueled by its corrupt politicians, local militias, and regional powers resulting in it being labeled as a failed state. This has been echoed in Italy's ENI business expansion strategies over the past four months, with a substantial transition away from Libya as a supplier and a move towards Egypt and Algeria.

Currently, Europe and especially Germany are being significantly impacted by the Russia-Ukraine war. Should this war not stop before the end of summer, the difficulties with energy supplies will only intensify. However, while Africa has the capacity to replace Russia as a prominent energy supplier to Europe, a wealth of obstacles such as political unrest, civil wars, and a lack of security stand firmly in the way, preventing this from becoming a reality.

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