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Impact of Nigeria's New Refinery Projects on Local and Sub-Regional Fuel Quality

Stratas Advisors

Aliko Dangote, the richest man in Nigeria, aims to overcome a paradox that has characterized Nigeria for several years, as Nigeria is the largest oil producer in sub-Saharan Africa, but also the largest importer of refined products. Indeed, while Lagos can produce up to 2.3 million barrels per day of crude oil, the country imports up to US\$7 billion worth of fuel annually.

A few years ago, the Dangote group began construction of a huge refinery with a cost of around US\$15 billion. This refinery is designed to process up to 650,000 barrels of crude oil per day, or just under a third of the country's production, all of which is currently exported. The entry into production of the mega infrastructure, is expected to stimulate Nigerian growth, and move the country from the status of an importer of refined products to that of an exporter, especially in the emerging sub-region of West Africa.

The Nigerian authorities, who were the first to support such a project, estimate that 70,000 direct and indirect jobs would be created thanks to this

large-scale project. This project is hailed by many analysts who see it as a way of revolutionizing the industry on a continent so abundantly endowed with raw materials, but from which most of the processed products consumed locally are imported.

Nigeria has tried on several occasions to create refining industries or steel plants in order to consume and upgrade the use of its oil resources. Each time, the West African giant has met with failure. This is the case with its four state-owned refineries all of which are currently closed, as they are due officially for an upgrade.

In addition to the new Dangote refinery, another refinery project is emerging in Nigeria. A new refinery integrated with a petrochemical plant is also under construction in Nigeria. The construction started after the BUA Group, an industrial conglomerate of West African countries, signed an agreement with French company Axens for the supply of key refining process technologies for the unit installations. Axens won the contract after a comprehensive tender process managed by energy consultancy KBR, which will also be responsible for subsequent stages of the engineering and construction phase of the project.

The new facility will have a processing capacity of 200,000 barrels per day. It is worthwhile to note that this project is in direct competition with the Dangote refinery. Indeed, the BUA Group not only targets the local market

but also the regional market as a whole. “The location of the projects on a waterfront provides maritime infrastructure for easy export. And the external market for polypropylene (the other major product of the refinery) is very solid”, explained Abdul Samad Rabi, president of the BUA Group.

Stratas Advisors' Views

Since 2017, the Standards Organisation of Nigeria set in its national fuel standards maximum sulfur limits of 150 ppm for gasoline (NIS 116:2017) and 50 ppm for diesel (NIS 948:2017) in line with previous targets set at the Abuja meeting in December 2016 (see Reports & Analysis, [Jan. 12, 2017](#) and [Oct. 3, 2017](#)). However, enforcement is somewhat non-existent due to the absence of a fuel quality monitoring legislation and system in Nigeria.

As previously reported, harmonization policies by the Economic Community of West African States (ECOWAS) are in place concerning the improvement of fuel quality by notably limiting the sulfur content in the 15 ECOWAS countries to 50 ppm max in all gasoline and diesel imports by January 2021 and in all fuel production by January 2025 amongst other spec changes (see Reports & Analysis, [Aug. 13, 2020](#)). When the new refinery projects are put into context with the above policies, it is interesting to see Nigeria could in turn become fuel suppliers of the sub-region. Indeed, it would be possible for Nigeria to export fuel to Togo and Cameroon, where their current supply comes from countries like Netherlands, Belgium and Cote d'Ivoire.

According to Stratas Advisors' trading sources, Nigeria has yet to comply with the national sulfur limits as well as those to be imposed by ECOWAS. In May 2020, an NGO known as the Stakeholder Democracy Network (SDN) performed a study on "Dirty fuel: An analysis of official and unofficial petroleum products in the Niger Delta" assessing the quality of fuels imported in Nigeria and also compared it with the quality of locally produced fuels. The study found out that the fuel imported by Nigeria surpassed the EU-wide sulfur limit for gasoline by over 43 times (i.e. >430 ppm) (see table below), while the average official diesels sampled were 2,044 ppm. In addition to a black market where fuel is illegally refined in the creeks of the Niger Delta, Nigeria continues to import high sulfur fuels. Both imports as well as fuel supplied by the black market have made it difficult for Nigeria to meet local fuel specifications. This gap between fuel specifications and the quality of fuel supplied on the market has been confirmed by traders in Nigeria.

The gap was further reinforced by Stratas Advisors' contacts at the Ministry of Environment, clarifying that this was due to the transition period that challenged principal fuel importers. However, contrary to Stratas Advisors' trading sources, the ministry emphasized that the quality of fuels currently available on the market (after 2019) is now fully compliant with Nigeria's fuel specifications, though there are no published test results to support this statement.

Even though high sulfur fuels continue to be produced by the local refineries, Stratas Advisors expects it is likely that the ECOWAS targets would be met by Nigeria in 2025, since Nigeria's largest refinery is planned to open in 2022. As Nigeria's total fuel demand is around 32 million barrels per day, the Dangote refinery will not be able to meet the demand but combined with the BUA Group's refinery project and upgrading plans of the existing refineries, this is likely to have an impact on the market. Indeed, the new refineries will supply major quantities of fuels compliant with local standards which will significantly help rebalance the market fuel quality in Nigeria. The existing refineries will have then up to 2025 to be upgraded based on the last ECOWAS deadline.

As a result, imports will continue to be required until 2025. The difference is that with the new refinery projects, Nigeria would be able to meet the 2025 targets by ECOWAS when it was for sure not likely previously only by upgrading the existing refineries. However, even if the deadline is met, this nevertheless raises the question of addressing the artisanal fuel supply of the Niger Delta which until now has escaped the control of the authorities.

Comparison of Nigeria's National Fuel Quality Standards with ECOWAS Targets and SDN Study Results

Sulfur Limits and Levels, ppm	National Standards	ECOWAS Targets	SDN Study Results

Effective Date	2017	January 2021 for imports; January 2025 for refinery production	July and December 2019 (date of sampling period)
Gasoline	150 ppm max	50 ppm max	430 ppm
Diesel	50 ppm max	50 ppm max	2,044 ppm

Source: Stratas Advisors, Stakeholder Democracy Network

(SDN), November 2020