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# Analysis: *mini refining investment opportunities in Nigeria*

CHIJIOKE K. MAMA

AFRICA'S BARREL EQUATIONS

Africa's most populous nation and largest economy is facing a huge threat; it's about energy security!

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# Abbreviations

bbl Barrels

bpd Barrels per day

Bcf Billion cubic feet

DPR Department of Petroleum Resources (Nigeria)

E & P Exploration and Production

IOC International Oil Company

LNG Liquefied Natural Gas

LPG Liquefied Petroleum Gas

MF Marginal Fields

MOF Marginal Oil field (Same as MF)

mmbopd Million barrels of oil per day

NNPC Nigerian National Petroleum Corporation

OML Oil Mining Lease

OPL Oil Prospecting License

OPEX Operational Expenditure

PIB Petroleum Industry Bill (Nigeria)

PPMC Pipelines and Products Marketing Company

Tcf Trillion cubic feet

2P Reserves Proved and Probable Reserves

EDC Effective Distillation Capacity

CPRC Cost Per Refining Capacity

HHK House Hold Kerosene

SPV Special Purpose Vehicle

# AN OLD CHALLENGE, A NEW SOLUTION

The much awaited policy move on petroleum refining in Africa's biggest economy has come. Decades of dependence on imported refined products has taken a huge toll on Nigeria's economy. It technically moved Nigerian jobs abroad, put enormous pressure on the Nigerian naira due to foreign exchange and promoted corruption through subsidies, while encouraging product smuggling into neighboring West Africa. In late May, Nigeria's Department of Petroleum Resources (DPR) carried out a series of workshops to promote a new policy that encouraged investment in modular refining in Nigeria. This is indeed a good investment window that holds economic, social and developmental value for Nigeria and potential investors. However, mini refining holds a tricky margin, which calls for the most skilled and surgical approach in order to guarantee profitability. The following is an analysis of some of the essential considerations of mini-refining; in the context of Nigeria's business environment.

## MINI REFINING: ESSENTIAL ELEMENTS

The new refining opportunity in Nigeria is a great initiative. Its impacts transcend economic gains for investors and entrepreneurs with respect to its potential contributions to national development. The most interesting element of mini refining is the relatively low setup cost, when compared with full conversion refineries (with capacities of about 200,000 bpd) and costs that range from US$2 - 9 billion. For example, The Turkish Socar refinery.

is a US$5 billion modern refinery funded by the International Finance Corporation (IFC). Mini-refineries can be established with about $100-$250 million. Depending on the configuration, manufacturer and plant location the cost can be lower or higher.

Furthermore, mini refineries offer the possibility of phased construction and the flexibility of quick and easy upgrade to reflect changes in product demand (an advantage for a new plant in Nigeria) For example, an initial 30,000 bpd capacity refinery can be upgraded to double or triple the capacity with ease and speed. In addition, its low capital requirements & being skid mounted, means construction time is compressed and the quality of engineering is improved. New product demands can be easily met with the addition of new modules.

Different plants can serve different markets (*such as the six geopolitical zones in Nigeria)*. Rather than feed a whole nation or region with a single plant, together with the associated risks of creating an elephant-sized supply chain and operations management system (a huge challenge in Nigeria's present sub-optimal infrastructural condition). However, mini refineries cannot boast of the same scale and efficiency obtainable from a full conversion plant and will typically require **more personnel per Effective Distillation Capacity (EDC).**

## OPPORTUNITIES & CHALLENGES

The most conspicuous opportunity in this new investment vista is the renewed interest of Nigeria's government, [led by President Buhari] in the growth of local refining and mini refinery as well. The general reforms of administrative structures, governance and fiscal regimes in Nigeria's oil and gas industry is a development that is capable of lowering or eliminating the unpleasant and high cost and risks associated with doing business in Nigeria. With the right strategies and team, project owners will be guaranteed reasonable profitability.

Nigeria's Department of Petroleum Resources (DPR) has outlined a number of incentives for investors in refineries in Nigeria. Analyst and experts are advocating for more robust support systems, which the government may implement in the future, given the urgent/crucial nature of the need to grow local refining capacity.

However it is noteworthy to mention that ongoing reforms in Nigeria has the potential to introduce significant elements of flux in the regulatory landscape; at least in the near-term.

Owners will therefor need to articulate flux resilient strategies and procedures for dealing with the environment in its current state.

***Of the three major means of petroleum product transport; Pipeline is the cheapest means of transport, followed by Rail and Truck. Presently, products are predominantly distributed in Nigeria via the most expensive mode: Road Trucks.***

In view of the poor economic condition of Nigeria and the level of reforms that the government is desirous of achieving in the life of this administration; this state of anticipated regulatory flux may as well continue beyond the short-term.

Furthermore, with many refining plants proposed to come on-stream in Nigeria in the coming years (both mini and full conversion refineries) it's easy to encounter competition especially in specific geographical sub-regions.

Although the general outlook for consumption growth is positive, excess capacity can easily be built in specific regions with the consequent fierce competition for the operators involved.

This is specifically important for small volume producers who may not be capable of competing outside their immediate market or region (due to the additional cost that might arise from marketing, distribution and storage). An all round strategic consideration of market for each individual project is key to profitability.