SUPPLY, DEMAND AND PRICING OUTLOOK: THE IMPACT OF INTERNATIONAL LPG MARKETS ON NIGERIA

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BY

SIR BILLY OKOYE (FNIM)

MD, NNPC RETAIL LIMITED

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NNPC Retail Limited (NRL) in Brief

NRL is a subsidiary of NNPC.

- Established in 2002 initially as an intervention vehicle in the market to ensure continued white product availability to the Nigerian people.
- Serves as a tool to benchmark activities of key players in the distribution chain and ensure safe, orderly and profitable retailing of petroleum products in the country.
- An outlet for NNPC products in a deregulated environment on acceptable commercial terms.
- A means to achieve NNPC’s world-class vision by integrating its upstream and downstream businesses.

Mission
To profitably operate model service outlets offering premium petroleum products and allied services to customers in line with global standards.

Vision
To become the leader of choice in the downstream and energy sector, driven by operational excellence and customer satisfaction.

WHY I MUST FUEL
IN NNPC RETAIL STATIONS
1. BEST PREMIUM QUALITY PETROLEUM PRODUCTS
2. UNADULTERATED PRODUCTS
3. CLEAN FORECOURTS AND ENVIRONMENT
4. FRIENDLY PUMP ATTENDANTS
5. BEST PRICES
6. HIGH INTEGRITY OF DISPENSING PUMPS
7. HIGH QUALITY LUBRICANTS
8. SPREAD ACROSS ALL NOOKS & CRANNIES OF NIGERIA

NNPC is 100% owned by all Nigerians including me.

- I contribute to the Federation Account to run the Nigerian economy.
- I buy without cash – use POS or bank transfer
- I can easily complain through the hotline numbers: 09091000086 or 09091000087.
- I can also conduct other NFR businesses (supermarket, lube, restaurant, tyre services, etc).
- I see the station in my area.
- I am a patriotic Nigerian.
The size of the Nigerian domestic LPG market was 635,452.061MT by end of December 2018. It is expected to reach a milestone of 1,000,000 MT by December 2019 according to data from PPPRA.

Inland storage capacity of about 42,500MT is available in LPG depots across Nigeria’s undulating and vast coastline.

There are over 555 operational gas plants with 95% owned by independent marketers.

In-country production is about 5,000,000 MTPA with over 90% of that volume exported while 10% is consumed locally.

NLNG contributed about 350,000MTPA to domestic supply in 2018.

Other key contributors are the Port Harcourt and Warri refineries as well as other offshore/onshore producers like Exxon Mobil, Pan Ocean, Global Gas and Xenergi Oil & Gas.

A significant portion of locally consumed LPG is also imported with numbers around 319,000 MTPA (55% of total consumption) for 2017.

Major marketers like Oando, Forte Oil, Conoil, NIPCO and NNPC Retail Limited control only about 10% of the Nigerian LPG market while the independent marketers control around 90% of the market.
Global LPG Production expected to rise from 250 Million MT in 2010 to more than 380 Million MT by 2030.

Key incremental production will be from the US, a result of further exploitation of shale Crude.

Additional production is also forecast from the Middle East and Australia. Limited incremental volumes are expected from refining sectors in emerging economies but developed nations likely to stagnate.

LNG projects, shale, and conventional gas fields are the key reason for the growth in the availability of NGLs.

Global LPG Supply has and will continue to grow in line with the development of natural gas production. (Source: Argus Media)

The Nigerian Gas Flare Commercialization Programme presents an opportunity for growth in LPG supply in Nigeria.

It is estimated that 600,000 MT of LPG per year can be produced from the 178 flare sites the programme intends to commercialize.

The NPDC Oredo facility should also increase supply, adding around 120,000 MTPA to in-country LPG production when it comes on stream.
Global Context: Demand expected to rise in line with supply as both energy and non-energy end-users capitalize

Incremental consumption will be driven by the petrochemical and residential sector

Residential demand of LPG for cooking is expected to grow in developing world markets

Other sectors are likely to remain flat.

Asia will be the key source of incremental demand

Demand for LPG in both the residential cooking and petrochemical sector in Asia will see demand soar.

OECD and Latin American markets are saturated or declining. Some incremental demand in Europe and North America for LPG as a feedstock

Demand in Africa will grow, but from a low base

Petrochemicals demand for LPG is driven by Asia, with other regions contributing

A combination of propane-dehydrogenation and steam-cracking will lead to significant incremental demand from this sector

Global demand for Autogas has likely peaked

Average growth of total Autogas demand since the beginning of the decade is 3%
(Source: Argus Media)
Nigerian LPG demand to grow incrementally on the back of FGN LPG Expansion and Penetration Programme.

Lack of clear cut FGN policy on Autogas utilization by Nigerian motorists has slowed growth in Autogas demand.

Removal of VAT on locally produced LPG by the FG will also encourage increase in demand as prices fall.

Historically, international demand for LPG declines in the summer months due to reduction in heating requirements. Conversely, local demand rises during those months due to falling prices locally & internationally.

The establishment of a cylinder manufacturing plant by Techno Oil in Lagos will also increase cylinder circulation countrywide leading to rise in product demand.

High prices and steady demand in the international market has led to the export of a significant volume of locally produced LPG. Price parity between international market prices and local prices has been achieved via volumes supplied by NLNG into the domestic market. This is because the NLNG LPG price is based on the Monte Belvieu price of the product plus a quoted price factor (QPF).

Gaps in in-Country LPG infrastructure has led to storage and distribution challenges hence making the international market more attractive.
The benchmark of domestic LPG pricing in Nigeria is the price per MT sold by NLNG to its off-takers ex-LPG depots in Lagos.

Due to non-reliance on the LPG produced ex-Port Harcourt and Warri refineries because of frequent downtime experienced at these facilities, pricing ex-Warri/Port Harcourt depot cannot be used as the benchmark price.

Other LPG producers do not dedicate enough volumes to the domestic market hence they do not play key roles in determining domestic LPG price. However, if NPDC’s IGHF, located at Oredo, Edo State comes on stream, that rhetoric will likely change.

According to Argus Media, “Africa sits at an interesting point – between 2 big trading hubs, and able to trade with multiple regions. The “logical” prices should be the lowest delivered price logistically achievable.

Yet, more often than not, prices in WAF are set by US domestic prices.

Argus Media has launched a new West Africa LPG Index – based on the lowest price of LPG delivered to Lagos from either the USGC or NWE.”
## COMPARISON BETWEEN LOCAL AND INTERNATIONAL LPG PRICING

<table>
<thead>
<tr>
<th>S/N</th>
<th>Month</th>
<th>Av. Domestic Price (NLNG Price)(N/MT)</th>
<th>Av. International price (Monte Belvieu Price)(N/MT)</th>
<th>Price Difference(N/MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan-18</td>
<td>208,171.23</td>
<td>147,759.08</td>
<td>60,412.15</td>
</tr>
<tr>
<td>2</td>
<td>Feb-18</td>
<td>189,676.40</td>
<td>140,807.52</td>
<td>48,868.88</td>
</tr>
<tr>
<td>3</td>
<td>Mar-18</td>
<td>175,350.34</td>
<td>141,084.22</td>
<td>34,266.12</td>
</tr>
<tr>
<td>4</td>
<td>Apr-18</td>
<td>182,951.86</td>
<td>142,963.02</td>
<td>39,988.84</td>
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<tr>
<td>5</td>
<td>Jun-18</td>
<td>205,626.61</td>
<td>159,991.78</td>
<td>45,634.83</td>
</tr>
<tr>
<td>6</td>
<td>Jul-18</td>
<td>205,311.97</td>
<td>183,999.42</td>
<td>21,312.54</td>
</tr>
<tr>
<td>7</td>
<td>Aug-18</td>
<td>207,550.24</td>
<td>177,942.86</td>
<td>29,607.38</td>
</tr>
<tr>
<td>8</td>
<td>Sep-18</td>
<td>223,319.13</td>
<td>183,001.95</td>
<td>40,317.18</td>
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<td>9</td>
<td>Oct-18</td>
<td>235,851.88</td>
<td>170,769.26</td>
<td>65,082.62</td>
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<tr>
<td>10</td>
<td>Dec-18</td>
<td>109,290.24</td>
<td>121,145.02</td>
<td>(11,854.78)</td>
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<tr>
<td>11</td>
<td>Jan-19</td>
<td>130,349.42</td>
<td>119,068.10</td>
<td>11,281.32</td>
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<tr>
<td>12</td>
<td>Feb-19</td>
<td>151,302.46</td>
<td>123,635.29</td>
<td>27,667.17</td>
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<tr>
<td>13</td>
<td>Mar-19</td>
<td>153,457.06</td>
<td>119,566.83</td>
<td>33,890.22</td>
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<tr>
<td>14</td>
<td>Apr-19</td>
<td>158,807.53</td>
<td>116,482.18</td>
<td>42,325.35</td>
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<tr>
<td>15</td>
<td>May-19</td>
<td>154,384.65</td>
<td>96,696.71</td>
<td>57,687.93</td>
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<tr>
<td>16</td>
<td>Jun-19</td>
<td>124,514.07</td>
<td>74,875.30</td>
<td>49,638.77</td>
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<tr>
<td>17</td>
<td>Jul-19</td>
<td>124,500.00</td>
<td>68,227.77</td>
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<td>18</td>
<td>Aug-19</td>
<td>115,714.44</td>
<td>75,667.82</td>
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<tr>
<td>19</td>
<td>Sep-19</td>
<td>131,127.07</td>
<td>80,877.22</td>
<td>50,249.85</td>
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<tr>
<td>20</td>
<td>Oct-19</td>
<td>131,247.52</td>
<td>94,298.68</td>
<td>36,948.84</td>
</tr>
</tbody>
</table>

**Notation**

1. Exchange rate variations over the period under review has necessitated the use of the average exchange rate to calculate the naira equivalent of the Monte Belvieu average price for each month.

2. The difference in cost between the International price of LPG and the domestic price is due to the quoted price factor (QPF) charged in addition by NLNG.

3. There was no discharge of LPG by NLNG in the months May 2018 and November 2018.
Comparison between Domestic and International LPG prices for the period January 2018 - October 2019

- Av. Domestic Price (NLNG Price)(N/MT)
- Av. International price (Monte Belvieu Price)(N/MT)
Length in LPG should see sustained cheaper relative prices.

Incremental global production will result in LPG pricing to clear

This offers an opportunity to secure cheap feedstock

But volatility is likely to remain a feature of the market

There is a frequent, but imperfect, correlation between Asian import requirement and the price of LPG globally

Prices in Asia and Europe tend to be correlated.

- Months where Asia import requirement is low have a knock-on effect, normally resulting in deflated global prices.
- However, the US market dynamics still play a key role
  (Source: Argus Media)
- The benchmark of NLNG Domestic LPG prices is the Monte Belvieu pricing index
- Recall, we had stated earlier that NLNG domestic LPG price is the benchmark for Nigerian domestic LPG price. Hence, the international LPG price still determines the price of LPG locally
CHALLENGES AND PROSPECTS

- Maritime security issues and incidences of insufficient/low draft of marine vessels bringing in product.

- Competition for occupancy at jetties during product discharge (esp. with White product vessels)

- Paucity of in-country transportation infrastructure (rail, road, pipelines)

- Lack of storage facilities and uneven spread of existing facilities across the country

- Lack of clear-cut government policy/subsidies on Autogas and high cost of Autogas conversion equipment

- HSE challenges in LPG Operations and Sales

- High switching cost for households intending to switch from kerosene/firewood to LPG usage

- Low awareness on the benefits of LPG usage as cooking fuel of choice

- Standardization of cylinder specifications by cylinder importers and manufacturers

- The LPG market has great potential for growth and development as only 5% of Nigerian households use LPG for their cooking needs.
FGN LPG Expansion and Penetration programme targets 5,000,000 MT domestic consumption by 2022 as well as the injection of 20 million cylinders by the same year.

FG needs to give incentives to local cylinder producers, importers of LPG accessories and in-country LPG production facilities to achieve these targets.

Also improvement in public transportation infrastructure will go a long way in easing LPG distribution for the benefit of Nigerians.

Encouraging private sector development of storage and handling facility for LPG will also boost the sector.

Government backed public awareness campaigns on the benefits and advantages of LPG usage will help increase awareness and encourage more citizens to switch from kerosene and firewood use to LPG.

Finally, providing affordable long-term financing for private sector organizations with the intention of participating in the LPG value chain will provide the much-needed stimulus for this all-important sector of the Nigerian economy.
CONCLUSION

- The time for an LPG revolution in the Nigerian energy sector is now!!
- All hands must be on deck to make this happen.
THANK YOU