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Review

An assessment of the distribution of Petroleum products in Nigeria

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Nigeria is endowed with abundant natural resources of which petroleum resources play a dominant role in the economy. These resources can be effectively harnessed and managed for the benefit of all Nigerians. Unfortunately, the distribution of petroleum products in the Nigerian economy is fraught with complex problems resulting sometimes in petroleum products outages, inflated prices of products and contentions on the pump price of products. This paper examines the various issues regarding the distribution of products and recommends that the downstream activities of the industry be completely deregulated to allow private sector and entrepreneurs' full participation in the distribution of the products. It is hypothesized that the participation of entrepreneurs will drive effectiveness in the sector. Effectiveness will bring down cost of operations with the consequence reduction of price of products for the benefit of all the stakeholders in the industry.

Keywords: Deregulation; Prices; Private sector

INTRODUCTION

Nigeria is blessed with abundant natural resources of which petroleum products play a major role. At present, Nigeria is the ninth world producer and sixth world exporter of crude oil. On the domestic economy, the petroleum sector generates over 90% of the country's foreign exchange earnings, and provides employment in various forms to Nigerians (Central Bank of Nigeria Annual Report and Statement of Accounts, 2010). In addition, the tremendous growth in oil earnings has influenced significantly Nigeria's international relations, and sometimes the politics of oil has taken centre stage in the nation's history of international relations in the last few decades.

Eromosele (1997) observed that after almost half a century of oil exploration in Nigeria, the oil industry is earning a mature status in comparison to other industries in the country such that significant progress has been made in terms of oil exploration and sale of crude oil abroad. Unfortunately, the domestic management of petroleum resources is fraught with a number of problems. There are occasional product shortages, inefficient product distribution and contending pump price of petrol. These problems are compounded by ethnic and civil disturbances in the Nigeria-Delta oil producing areas. This situation sometimes leads to destruction and vandalization of oil pipelines, disturbances in operation of the oil explorations and damage to life and properties.

The objective of this study is to provide an insight into the nature of petroleum products distribution in Nigeria, and to ascertain the effectiveness and efficiency of the distribution system. The paper also offers suggestions for improvement of the overall management of downstream sector of the petroleum resources.

The Nigerian petroleum industry

In the last two decades, petroleum industry has occupied strategic importance in the Nigerian economy accounting for as high as 78 percent of Gross Domestic product and up to 90 percent of the country's total annual revenue and foreign exchange earnings as given in Table 1(National Bureau of Statistics, 2008).

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In Table 1 a breakdown of the federally collected revenue from 1965 till 2007 shows that the oil sector maintained and continues to maintain its dominance accounting for over 90 percent of total revenue in some years. At any rate since 1980, the percentage contribution of the oil sector to the total government revenue has not fallen below 70 percent of the total receipt. This tends to demonstrate the strategic importance of the petroleum resources in the Nigerian economy.

The petroleum industry can be classified by type of actors or by sector. The actors in the Nigerian industry consist of both private and public organizations. The public actors are the government agents and functionaries such as the Nigerian National Petroleum Corporation (NNPC) and its subsidiaries, the Department of Petroleum Resources (DPR), the petroleum products pricing regulatory authority (PPPRA), among others. The private segment consists of both indigenous and foreign actors.

The indigenous sector consists of private independent marketers. As far back as 1978, the concept of independent petroleum products marketing was introduced with a view to bringing indigenous independent marketers to that sector of the industry. According to Edoreh (1997), in 1979 a year after the scheme of independent marketers was introduced, there were not more than 20 (twenty) "independent marketers". By 1993, the number had risen to 1000. Today, the indigenous independent marketers are well over 7,948 (according to the Petroleum Product Pricing Regulatory Authority, PPPR, 2010). As a measure of the growing involvement of the indigenous petroleum products marketers in the economic development process of Nigeria, it is interesting that in 1981, they accounted for less than half – percent in terms of volume of petroleum products marketed in Nigeria. By 1998, they had captured about 25 percent of the market. Today, they account for nearly 40 percent of the volume of products marketed in country. (NNPC, 2010). In terms of outlets, the major marketers have 2218 while the Independent marketers have 7948 outlets. The NNPC has 18 mega stations nationwide as at June, 2010. (See Table 2).

These indigenous independent marketers are competing with the established big (foreign) multinational enterprises usually referred to as the major oil marketers comprising:

- Mobil Oil Nigeria Plc
- MRS Nigeria Plc
- Total Nigeria Plc
- Con oil Plc
- Oando Nigeria Plc
- African Petroleum Plc

These six major oil marketers control about 60 percent of the market. There are two major classification of petroleum industry by sector. These are the "Upstream" and Downstream sectors.

Activities in the upstream sector include:

- Geodetic survey
- Civil works such as site surveys and preparation of drilling locations
- Seismic data acquisition
- Drilling operations
- Geological activities
- Crude oil transportation and storage
- Exploration and production

The downstream sector of the petroleum industry which forms the basis of this study is characterized by such activities as

- Gas treatment
- Crude oil and gas conversion into refined and petrol chemical product and
- Transportation and distribution of refined products

In the downstream sector, activities are progressively falling within the control of private entrepreneurs, especially the indigenous independent marketers. It is the policy of the federal government that petroleum products be distributed by private companies. To this end, government divested a sizeable portion of its interest in oil marketing companies by selling some of its share to the public through the Technical Committee on privatization and commercialization.

In the last three decades, the petroleum industry has occupied strategic importance in the Nigerian economy accounting for as high as78 percent of Gross Domestic Product and up to 90 percent of the country's total foreign exchange earnings.

In view of the strategic importance of the industry in the economy, in 1999 the Federal Government formulated strategic objectives for the effectiveness of the industry (according to the Nigerian National Petroleum Corporation Statistical Bulletin, 2006) as follows:

- Maintaining self sufficiency in refining
- Ensuring regular and uninterrupted domestic supply of petroleum products at reasonable price
- Establishing facilities and infrastructure for the
- production of refined product targeted at the export market and support domestic petrochemicals
- Providing gainful employment and enabling Nigerians to acquire technical know – how in refining and distribution business.

Table 1: Revenue of Nigeria 1960-2007 (N million)

Year	Total Revenue	Oil Revenue	Share of Oil revenue	Non-Oil Revenue	Share of Non- Oil Revenue %
1960	330	8.8	2.7	321.2	97.3
1965	536.8	136.2	25.4	400.6	74.6
1970	885.2	514.2	57.6	385.4	42.4
1975	4925	4563	92.6	362.4	7.4
1980	14077.6	13307	94.5	770.6	5.5
1985	1172.8	11223.7	95.8	497.1	2.7
1990	74649	71887	96.3	2762	3.7
1995	459987	324547.6	70.5	135440	29.5
1996	520190	369190	70.9	151000	29.1
1997	528811	416811	78.8	112000	21.1
1998	463608	324311	69.95	139297	30.05
1999	949187	738798.7	77.84	210388	22.16
2000	1906159.7	1591675.8	83.5	314483.9	16.5
2002	2,231,532.9	1707562.8	76.5	523970.1	23.5
2003	2,575.1	2,079.3	80.73	500.8	19.4
2004	3,960.9	3,354.8	84.6	606.1	15.3
2005	5,597.5	4,762.4	85.08	835.1	15.70
2006	6,061.0	5,287.6	36.72	773.4	12.8
2007	5, 715.0	4463.0	78.1	1252.6	21.9

Source: Central Bank of Nigeria: Annual Report and Statement of Accounts, Various Editions. National Review of Statistics, Abuja, Annual Abstracts of Statistics, (2008).

The above listed strategy was to be the guiding principles for the effectiveness of the industry.
Government believed that the above stated aspirations could be achieved through twin process of deregulation and liberalization of the downstream petroleum sub – sector. In spite of the efforts of government, the industry was still characterized by series of problems. The problems include the following:

- Scarcity of petroleum products leading to long queues, at the service station in some states and town of the country at regular intervals;
- Low capacity utilization and refining activities at the nation's refineries;
- Rampart fire incidents as a result of mishandling products;
- Pipelines vandalization;
- Large scale smuggling due to unfavourable economic product at home and higher borders prices with the neighbouring countries; and
- Low investment opportunities in the sector.

On 14th August, 2000 the Federal Government of Nigeria set up a special committee on the review of petroleum products supply and distribution. The members of the committee were drawn from various stakeholders and other interest groups to examine the problems of the downstream petroleum sector. The committee submitted its report to the government for study and approval.

According to Oluleye (2004), on 29th September, 2003, the Governing Board of the Petroleum Pricing Regulatory Authority (PPRA) announced full deregulation of the downstream petroleum sector. This implies that the Nigerian National Petroleum company (NNPC) will be paying market prices for crude petrol, diesel and kerosene.

As highlighted by Oluleye (2004), following the announcement, the downstream operators embarked upon massive investment in the sector, culminating in building and commissioning of jetties, depots, building of new service stations with new pump deployment. There were also the expansion of trucking fleet, modernization of HSE equipment and considerable investment in the training of staff.

Okafor (2006) observed that the policy of deregulation has globally been embraced by several countries in order to lessen the public sector dominance and for developing a liberalized market while ensuring adequate supply of products. According to Okafor (2006), such is the story in Peru Argentina, Pakistan, Chile, Philippine, Thailand, Mexico, Canada, Venezuela, Japan and U.S.A. In those countries complete deregulation has brought significant turning point in the success story of the oil industry

Table 2: Nationwide retail outlets 2009 census – summary distribution by zone

Geo - Political Zone	Marketer type Major	Marketer type Independent	Total No of Outlets
North Central	355	1318	1673
North East	163	726	889
North West	265	1023	1288
South East	194	1227	1421
South South	224	1519	1743
South West	1017	2135	3152
TOTAL	2218	7948	10166

Source: Petroleum Products Pricing Regulatory Authority Available at www.pppra-nigeria.org

reform efforts. If Nigeria should borrow a level from these nations and allow the downstream sector to be fully deregulated, there would be an improvement in the supply and distribution of petroleum products.

Petroleum products distribution in Nigeria and the role of oil marketers

Product is an important element of the marketing mix. According to Kotler and Armstrong, (1969) a product is anything that can be offered to a market for attention, acquisition, use or consumption which might satisfy a want or need. It includes physical object and intangible objects.

From the above conception petroleum and its bye products may include the following:

- Premium motor spirit (PMS OR PERTOL)
- Automotive Gas Oil (AGO or Diesel)
- Household Kerosene (HHK)
- Aviation Turbine Kerosene (ATK or jet-Al)
- Industry Fuel:
- High pour Fuel Oil (HPFO)
- Low pour Fuel Oil (LPFO)
- Liquefied petroleum Gas (LPG)
- Bitumen
- Base oil

In any established organization, decision about how to distribute products and services to ultimate consumers are among the most the important decisions confronting management because distribution decisions must be made in terms of various and sometimes divergent objectives and strategies. Under such situations, Kotler and Armstrong (1975) suggested that distribution decisions should be guided by three overall criteria as follow:

- Market coverage i.e. the size of the potential market that needs to be served
- Control i.e. control over the product and;
- Costs i.e. fixed and variable

Petroleum products distribution is therefore concerned with the movement of refined petroleum from the refinery to the final consumers across various locations of delivery in the country. In the Nigeria situation, the pipelines and products Marketing Company (PPMC) is responsible for the wholesale supply, distribution and marketing of petroleum products in Nigeria.

Until recently, the petroleum products available for distribution were through an elaborate, network of nearly 4,000 kilometers of pipelines inter connected to 21 widely dispersed depots across the country. The products may be obtained from the four local refineries or in the event of a supply short-fall from off-shore refineries by way of imports. In addition to pipelines, some twenty marine tankers are used to ferry from the coastal refineries of Warri and Port- Harcourt, heavy products and other products in high demand to Lagos metropolis. As mentioned above, Nigeria presently has four refineries owned by the federal Government but being operated by the NNPC with the following operation capacities shown in table 3 Movement of products from the depots is the responsibility of the six major oil companies and the numerous independent marketers. Imported refined products are received at NNPC-PPMC depots at Atlas Cove. From here, products are pumped to nearby depots at Mosimi in Shagamu, from which products are pumped into various other depots through the pipelines; Booster pump stations are provided along the route and between two adjoining depots. This arrangement is necessary to boost the flow of products in the pipelines along the routes. The pipelines are of various diameters which include 12”8 and 6”. Figure 1 shows product distribution routes used by oil

Table 3: Refining Operations of Nigerian Refineries 2010

Name	Port Harcourt Refinery I	Warri Refinery	Kaduna Refinery	Port Harcourt Refinery II
Year of Establishment	1965	1978	1980	1989
Installed production capacity	66,000 barrels per day	125, 000 barrels per day	110,000 barrels per day	150, 000 barrels per day
Throughout	40,000 barrels per day	90, 000 barrels per day	74,000 barrels per day	135, 000 barrels per day
Utilization rate	60.6%	72%	68%	90%
Typical yield: LPG	n/a	0.6%	0.4%	1.5%
Gasoline	n/a	21.9%	24.5%	15.5%
Kerosene	-	21.9%	24.5%	34.5%
Gas Oil	-	20.3%	17.6%	24.2%

Source: NNPC Statistical bulletin, Abuja.

companies in Nigeria. Unfortunately, most of the oil pipelines have been damaged through vandalization by unscrupulous Nigerians. Consequently, most of the products are been transported and distributed by trailers, and tankers, a situation that has led to the ineffectiveness in the downstream sector of the industry.

From the foregoing analysis, petroleum distribution is a complex task that involves transporting and storing across the country. This process is done by a variety of players including the major marketers that transport products from the refineries to their branded station, independent distributors that transport products from the depots to the service stations.

According to Nothingham (2004) the distribution segment of the petroleum value chain holds the most promise for domestic initiatives. The effectiveness of the distribution is therefore significant for the economic development process. This is why a discussion of distribution of petroleum products is relevant in the Nigerian situation.

Kupolokun (2006) highlighted that in the past years, the downstream sector of the petroleum products started under a market structure in which price were determined by the interplay of the forces of supply and demand. Then, the product market was dominated by the multinational oil companies until 1973 when the Government introduced uniform pricing of petroleum products in order to ensure even distribution of products nationwide. In 1975, the Petroleum Equalisation Fund (PEF) was established to deal with the problem of cost differentials arising from the transportation of petroleum products to various parts of the country, based on the uniform pricing policy. As observed by Kupolokun (2006), the introduction of the Independent marketer's scheme in 1978 as earlier mentioned broke the dominance of the multinationals.

Adamolekun (1999) observed that over the years, managing and administering petroleum product prices in Nigeria has not been easy. These have been marked with series of protest and crises, irregular supply of products, acute product shortages, hoarding, smuggling, adulteration and long queues were the main features of the supply and distribution process. The situation became worsened by the low performance of the domestic refineries, which resulted in excessive dependence on imports. Additionally, there was limited inflow of investments into the downstream due to low margins, uncompetitive pricing structure and prior incentive mechanism.

It was against this backdrop that the imperative of opening up the sector became evident in line with the deregulation programme of the Nigerian economy. Consequently, in September 2003, the Federal Government deregulated the supply and distribution of petroleum products.

As highlighted in the NNPC bulletin (2006) the responsibilities of the oil marketing companies are as follows:

- To contract for petroleum products supply from refineries in line with prescribed regulations.
- To import, supply and market petroleum products throughout the country.
- To contract for capacities from logistics companies (jetties pipelines, depots) in line with regulations and pay prescribed tariffs
- Ensure that marine tanker parcel size, quantity of products and conditions of vessel meet prescribed regulations
- Ensure that onward delivery of petroleum products from regional depots to retail stations
- using road tankers comply with stipulated regulations.
- Ensuring holding of strategic petroleum stocks in regional depots, refinery tank forms or company owned depots in line with regulations.

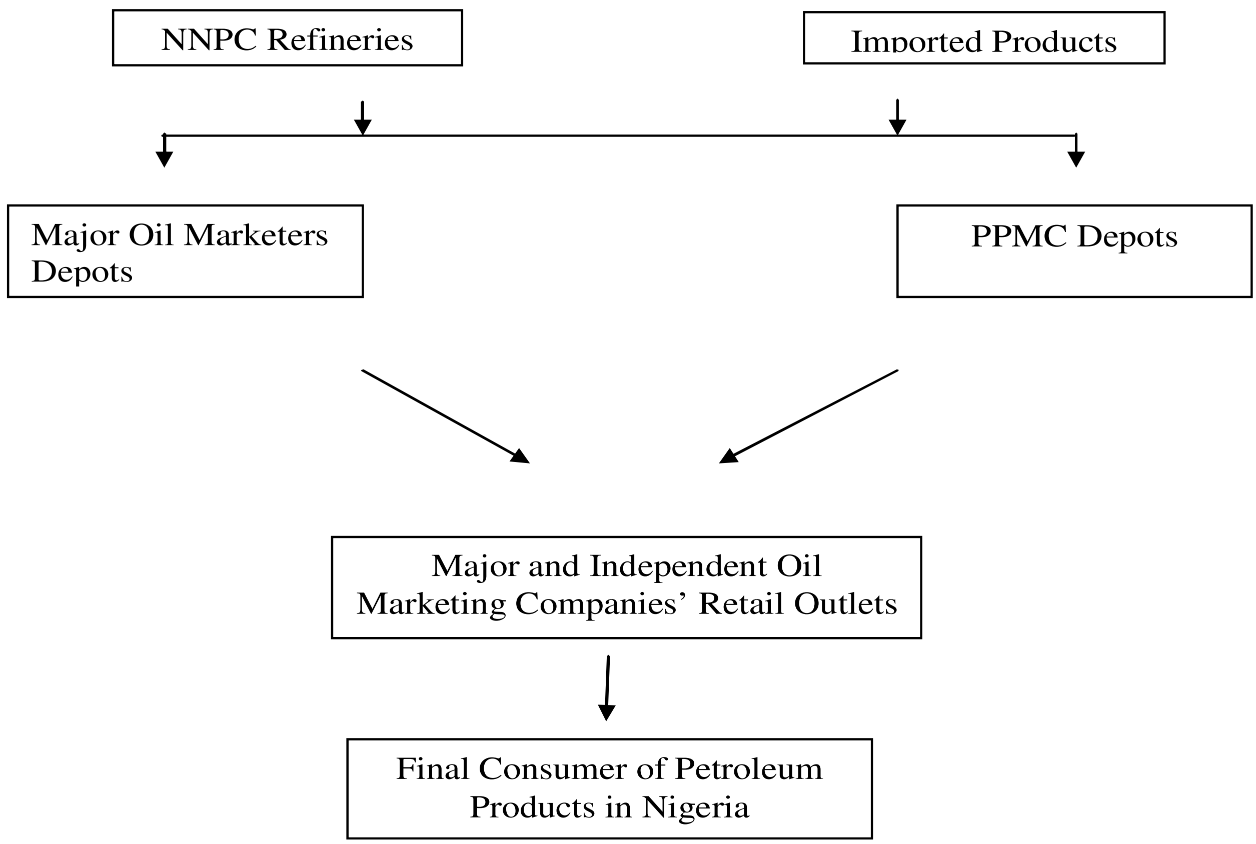

Figure 1: The physical flow of products: the retail route used by major and independent companies in Nigeria. Source**:** NNPC/PPMC Bulletin, 2010.

In discharging these responsibilities, marketers will be able to distribute the products effectively, and still make the normal profit. Emedosibe (2009) observed that in performing these responsibilities, the marketers are making abnormal profit of 106% per litre; an allegation which the marketers have refuted several times. As highlighted in the NNPC bulletin the Pipelines and Product Marketing Company (PPMC) is the product distribution arm of NNPC. PPMC is directly responsible for the comparative ease with which petroleum products are sourced and distributed to all parts of the country, at a uniform price. PPMC, a subsidiary of NNPC, ensures, among other things, the availability of petroleum products to sustain the nation's industries, run automobiles and for domestic cooking.

Petroleum products are either imported or refined locally and received by the PPMC through import jetties and pipelines and distributed through pipelines to depots that are strategically located all over the country called bridging to designated retail outlets. NNPC operates retail outlets with efficient service delivery of petroleum and allied products to customers in an environmentally friendly manner. This situation prevails only in some states of the federation, but it is not the case in other parts of the country. On occasions, some states of the country including Abuja, the federal capital territory, may experience outages lasting for days, and motorists have to queue up to buy the products. This situation ought not to be so.

Note: ATK = Aviation Turbane Kerosine ; Bbls = Barrels ; DPK =Dual Purpose Kerosine; HHK =House Hold Kerosine; HPFO = High Poor Fuel Oil; LPFO = Low Poor Fuel Oil; LPG = Liquefied Petroleum Gas; PMS = Premium Motor Spirit.

As shown in Table 4, in 2009, the major and Independent Petroleum Products Marketing Companies distributed about 8,476,991.86billion litres of different petroleum products in the six geopolitical regions and the Federal Capital Territory (FTC) in 2009. (see Table 4). As shown in Table 4, the southwest has the largest

Table 4: Petroleum Products Distribution by Zone, 2010. (litres).

Products	South West	South East	South South	North West	North East	North Central	FCT	Total
LPG	1,145.31	85.05	22,653.87	438.16	20.48	215.50	154.01	24,312.43
PMS	3,143,506.98	189,225.03	1,068,698.89	419,228.33	302,454.11	869,431.38	356,932.83	6,353,517.99
HHK	52,126.50	13,713.31	409,988.93	20,204.84	17,204.96	141,283.42	14,206.13	688,548.09
ATK	147,013.32	2,538.00	13,699.53	14,113.04	2,892.10	5,4003.73	19,889.01	205,546.72
Auto Gas Oil	144,958.11	26,974.08	379,366.49	46,050.07	43,154.55	214,975.44	23,888.81	879,367.55
LPFO	3,672.97	-	110,750.58	29.18	245.00	158,001.36	-	272,699.10
Lubricating Oil	22,301.78	1,937.06	6,706.36	2,138.66	2,599.04	4,703.62	1,856.16	42,242.87
Ointment Asphalts	2,178.00	-	1,627.00	0.03	53.00	7,246.61	252.00	11,356.64
Brake Fluid	2.82	0.29	3.03	0.56	0.14	5.41	3.20	15.17
Special Product	43.00	5.00	17.00	19.00	-	8.00	5.00	97.00
Others CRS, RSG	-	-	9,587.35	-	-	9,300.95	-	18,888.30
Total	**3,520,948.79**	**234,437.81**	**2,023,097.04**	**502,222.50**	**368,443.38**	**1,410,615.15**	**417,187.20**	**8,476,991.86**
% Distribution	**41.54**	**2.33**	**23.87**	**5.92**	**4.35**	**16.64**	**4.92**	**1002**

Source: Nigerian National Petroleum Corporation Annual Statistical Bulletin, 2010.

percentage share of the product distribution accounting for 41.54% of the total assorted product distribution, while the South East has the least product distribution of 2.73%. From the NNPC statistical bulletin, out of the 8.4 billion litres of oil distributed, 61% was produced locally. The balance was met with importation. The situation was due to the fact that the Government refineries were operating below the installed capacities; sometimes resulting in complete breakdown of some refineries for months. Oladele (1997) had earlier drawn the attention of Nigeria Government to the aging refineries and the need to build new ones.

Transportation of products

Movement of products from depots to service stations numbering several thousand- when they are retailed to the final consumers involves the use of road as the mode of transportation and the products are moved by large trucks. Road transportation is relevant to the bridging activities of **-** NNPC and its subsidiary the Pipelines and products Marketing Company (PPMC). Road transportation is used to make up for shortage in supply across the nation. In fact a greater percentage of the products are distributed through road transportation all over the country.

Sea transportation

Movement of products in large quantities sometimes necessitate the use of sea as the mode of transportation. Marine tankers and coastal vessels are used for coastal transportation of petroleum products and to ferry from the coastal refineries of Warri and Port Harcourt, to Lagos. This involves heavy products in terms of high demand.

Pipelines

The most suitable means of transportation of liquid substance is the pipeline. Hence PPMC, uses pipelines frequently to convey products from refineries to depots which are located in strategic places across the country. However, according to Kupolokun (2006), over 75% of the pipelines have been vandalized, and are not currently in use. The petroleum products available for distribution through an elaborate 4,000 kilometres of pipelines used to be intercontinental to 21 widely dispersed depots. The products were obtained either from the four local refineries or in the event of a supply short-fall from offshore refineries by way of import of processed Nigerian crude oil. In some cases, and mostly through vandalization, these pipelines get burst into flames, causing serious damages to properties and human lives. By multiplier effect the environmental, economic and social negative impact of such damages is usually enormous. In most cases the four refineries produce about 61% of the total petroleum needs of the country. The balance is usually met with importation.

The challenge

The distribution of petroleum products is facing a lot of challenges in the Nigerian environment. In fact the environment surrounding petroleum products distribution in Nigeria is challenging and begs for immediate solutions.

The low capacity utilization of government owned refineries and petrochemical plants in Kaduna, Warri and Port Harcourt poses a lot of challenge to NNPC. It is the low capacity utilization that often result into petroleum product shortage and eventual importation of the products a situation that puts a drain on the scarce foreign exchange of the nation.

As observed by Oladele (1991) there has been inadequate crude oil allocation to the refineries for domestic consumption. This situation also leads to under utilization of the four refineries with the attendant shortage of refined products for domestic consumption.

One need to recount the despair, neglect and repeated vandalization of the state-run petroleum products pipelines and oil movement infrastructure nationwide, coupled with frequent accidents of haulage trucks on the nations heavily used high ways. All these pose complex problems to managers, and operators in the oil industry.

The collateral damage of institutionalized corruption with the frightening emergence of a local nouveau riche oil mafia that controls and co-ordinate crude-oil, and buying over the established petroleum companies and changing established names and logo of these companies should be a major concern to the future of the Nigerian oil industry. From the NNPC Statistical bulletin, 67% of the total sale of petroleum products are usually under taken by the major oil companies, while the independent marketing companies usually sell the remaining 33%.

There has been contention over the determination of pump price of petroleum products. Curiously, during a period of almost fifty (50) years when the petroleum marketing companies sourced for the products themselves transported and distributed them using their own distribution channels, and retail outlets, subsidy was not an issue, because the oil companies fixed the prices of products in consultation with the government.

Kupolokun (2006) pointed out that in 1973; government introduced uniform pricing of petroleum products across the country. This was done ostensibly to encourage even development in the country. Since then, there has been contention over the determination of pump price of products. In fact, in the last five years, the Nigerian labour Congress (NLC has gone on not less than four nation-wide strikes in order to restrict the federal Government from increasing pump price of petroleum products. In January 2004, the government and the NLC instituted legal actions in the process of fixing pump price. Again in June, 2004, the NLC declared another nationwide strike to press home the demand for reduction in the pump price of products which has jumped progressively from N19.00 per litre to N50.00 per litre over a period of four years. This has led to 263% increase in the price of petrol over a period of four years. The increase in petrol price often lead to increases in the prices of commodities and local transport, a situation that cause hyper inflation, and above the 10% inflation rate planned for in the budget.

The man-hour lost per day of each of the nation-wide strikes and the total grounding of the nation's economy for days have calamitous effects on the wheel of progress of the Nigerian economic development process. Sometimes, the nation- wide strikes may last seven or eight days when the economic and social activities in the country are totally grounded. In the nation – wide strike of January, 2012, it was estimated that the country lost over 120 billion naira.

The illegal bunkering nationwide, the insatiably Task Force Operatives that collaborated with petrol station owners to cheat the consumers, and at times assist in the diversion of petroleum products are all consequences suffered over the years in the industry. All these have done untold damages to the Nigerian economy.

The unparallel huge amount of money spent on Turn Around Maintenance (TAM) of the refineries, which often break down immediately after the maintenance call for a more effective and long lasting maintenance policy. According to Feyide (1994) over $35 million was often budgeted for Turn Around Maintenance every four years with little or no improvement in the functioning and operation of the refineries.

Perhaps, it should also be mentioned that the cross-border smuggling of petroleum products all of which are the root causes of the protracted and seemingly intractable severe level crises that usually bedevilled the country relentlessly are all indications that a more dynamic and effective management of the downstream sector of the petroleum industry is necessary. Under the prevailing situation, a more pragmatic approach is to completely deregulate the petroleum industry sector as the case in the communication industry in Nigeria, Kupolokun (2006) pointed out.

Onakoya (2011) however highlighted that the implications of deregulation will mean in the first place a complete reform of the roles of players in the oil and gas industry. Consequently, deregulation may lead to the following:

- Oil industry infrastructure and investments will be driven by private capital.
- Refineries, pipelines, depots, jetties, and supplies will be released from Government ownership.
- NNPC will become either a regulator or competitor, but no longer both.
- Prices will be driven strictly by plats, local taxes and operating efficiency.
- Supply and Trading (S and T) risk will be transferred from NNPC to the market.
- There will be no more guaranteed landing cost and margins for marketers by PPPRA.
- There will be no more fixed distribution by petroleum Equalisation FUND
- Additional working capital pressure will be on the players for inventory financing
- Pricing margins will become free, and may be initially high but will eventually drop and stabilize in response to competition and new entrants.
- There will be market rationalization which might make some players perish, and drop out, while some will prosper. From the foregoing, complete deregulation and removal of subsidy will no doubt affect the efficient distribution of products at the commencement stage. Later, the prices of products will eventually be determined by the market forces of demand and supply, and eventual stability in the industry. The consequences enumerated above will undoubtedly affect the distribution of petroleum products. The net work is that prices of products will eventually be determined by the forces of demand and supply.

Some policy considerations

The public enterprises in Nigeria have a long chain of problems making them unable to achieve intended objectives. Such problems include ill conceived investments, political interference in decision making, costly and inefficient use of public resources, growing budgetary burden, poor management practice and diversion of credit and other resources from the private sector. Unfortunately, according to El – Rufai (2000), available evidence tends to indicate that the NNPC, being a public enterprise is not immune from the problem listed above. The question is how can the federal government ensure a more effective distribution of petroleum products in the country? There is no easy answer to this question. This may call for a change in policy orientation and development of new programmes in the oil industry and sector.

Suffice to mention that development in many countries throughout the world has shown that initiatives and drive of private investors and entrepreneurs can be important agent of economic growth. Economic analysis suggests that private enterprises contribute most to the generation of high economic returns in a liberal environment characterized by few constraints on access to inputs and market. Events in the world around us tend to suggest that governments are seeking solutions to the problems of public enterprises via privatization and commercialization. Nigeria is the ninth world producer and world sixth largest exporter of crude oil. The country's towering crude oil profile reserve is estimated at over 36.2 billion barrels and estimated to last till 2056 at the ongoing rate of exploration. This scenario points to a positive development in Nigeria.

However, the country is importing refined products for her domestic use. This situation has made the petroleum sector problematic, riddled with incessant shortages, and price hikes which make life most unbearable for the over 150 million citizens of the country.

This paper will like to recommend that government should completely deregulate the downstream sector of the petroleum industry. This deregulation will gradually usher in privatization which will encourage full participation of private sector and entrepreneurs in the downstream operation of petroleum products. As Adams (2001) and Akpieyi (2000) have observed, this process is likely to bread competition which will drive effectiveness in the sector. The effectiveness will bring down the cost of operation with the consequence reduction of the pump price of products. The more effective the sector, all things being equal, the more the market forces will determine the prices of the products outside government control.

The turn around maintenance of the existing refineries should be carried out when due. The Depots should be adequately maintained, and the old pipelines replaced for the effective flow of products from the refineries to the depots. The Nigerian rail system should be refurbished and used for the transportation of products. This will release the heavily congested Nigerian highways and roads being used by haulage trucks. Security in the petroleum products is essential to the nation's economy and expensive at the same time.

Thus the industry needs adequate safety and security operatives. This is more urgent in view of the reported cases of vandalization of pipelines which goes on unabated in some parts of the country. This paper like Feyide (1994) also advocates for the establishment of more refineries in the country. A refinery could be located along Gboko-Jalingo axis in the north-east of the country, and another one long Ikorodu – Sagamu axis in the South-West. This step will increase the supply of domestic refined products, and reduce or eliminate product importation.

The excess refined oil can be exported officially to the neighbouring countries and thereby eliminate smuggling of the products.

CONCLUSION

The distribution system of petroleum products in Nigeria is found to be ineffective and inefficient due to a number of factors which have been identified. It is recommended that the downstream sector of the industry be completely deregulated, and the apparent subsidy be removed such that the prices of the products will be determined by the market forces of demand and supply. It is argued that the private investor and entrepreneurs should be allowed full participation in the sector, a situation that will lead to effectiveness in the distribution of the product. In effect, as discussed by Adeleke (2002), this will create job opportunities for Nigerians and promote further, the development of small and medium scale enterprises in the oil sector of the economies.

Finally, the refineries should be privatized, that is, sold to private investors. The NNPC should hands off the operation of refining petroleum products for domestic consumption. This process, no doubt, will usher in a more effective system and operation in the industry.

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