THE ROLE OF NIGERIAN NATIONAL PETROLEUM CORPORATION (NNPC) IN MARKETING AND DISTRIBUTION OF PETROLEUM PRODUCTS IN NIGERIA.

A CASE STUDY OF PIPELINE AND PRODUCT MARKETING COMPANY LIMITED.
A SUBSIDIARY OF NNPC.

BY

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A PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF BUSINESS ADMINISTRATION (MBA) DEGREE OF THE AHMADU BELLO UNIVERSITY, ZARIA.

SEPTEMBER, 1996.

DECLARATION

I hereby declare that this Project has been written by me. The ideas, opinions, assumptions and errors in this Project work therefore remain completely mine. However, all information not original to this Project have been duly acknowledged.

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CERTIFICATION

This Project entitled "**The Role of Nigerian National Petroleum Corporation (NNPC) in Marketing and Distribution of Petroleum Products in Nigeria: A case Study of Pipeline and Product Marketing Company (PPMC) Limited**", by **SAYYADI SULEIMAN ABUBAKAR** meets the regulations governing the award of the **Degree of Master of Business Administration of Ahmadu Bello University, Zaria** and is approved for its contribution and literary presentation.

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DEDICATION

This Project is dedicated to all members of my family and particularly to my parents, my wife Hadizat whose support and understanding have assisted in making the MBA Course a success.

ACKNOWLEDGEMENT

A study of this nature requires guidance and commitment. In the course of this work a number of individuals, many more than I can mention, in one way or the other gave their token contribution which invariably led to the success of the study. To all these people I give appreciation and thanks.

My special and sincere gratitude goes to my Supervisor, **Mr. Essiensak J. Ubom** who gave me useful advice, counselling, encouragement and made numerous valuable criticisms and suggestions that made my project a reality. I equally thank my various Lecturers whose guidance contributed immensely towards successful completion of this programme.

This acknowledgement is incomplete without extending my profound gratitude to the entire staff of N.N.P.C. Zonal Office Library, and National Library, Kaduna for their assistance. In this regard I hereby express my special thanks to Mallam Aminu Abba and Mallam Adamu Mika'ilu who provided me with most of the data for the project.

I also wish to acknowledge the contribution made by friends through their companionship and encouragement.

ABSTRACT

Distribution and Marketing of Petroleum Products in Nigeria has always been constrained by a number of problems. To alleviate the problems, the Federal Government established the Pipeline and Product Marketing Company Limited as a Subsidiary of the Nigerian National Petroleum Corporation (NNPC) which became operational in 1987. Has this company been effective?.

In an attempt to determine whether the Organisation is effective in distribution and Marketing of Petroleum Products throughout the country, the performance of the company was measured against the set objective.

To measure the performance or otherwise of the company, analysis of Petroleum Products, produced by our local Refineries and products consumed in the country were made. Also analysis of products lifted by Pipeline from our four domestic Refineries were made. Methods of product transportation and the changes in transportation mode of refinery off-take were assessed. The growth of petroleum products retails outlets before and after the advert of Pipeline Network System was also assessed.

The study attempts amongst other things to analyse as succinctly as possible the various factors affecting the products distribution. However, it deals with a particular brand of products - **"the white products".** The recommendations **and other** relevant considerations and suggestions for better performance of the Organisation were made.

Based on the analysis, therefore, the company was found to be effective in distribution and marketing of petroleum products in Nigeria.

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INTRODUCTION

1.1 Preamble

The Pipelines and Products Marketing Company Limited (PPMC) was incorporated in November, 1998 as a subsidiary of the Nigerian National Petroleum Corporation (N.N.P.C.).

The emergence of the company was by no means accidental, but as result of a painstaking effort at revolutionising, modernizing and Commercialising the activities of N.N.P.C. and its integral parts.

Its evolution Commenced some twenty years ago as a result of the economic boom of the early 70s which led to unprecedented and phenomenal rise in domestic petroleum Consumption. The private sector's capacity and capability then proved rather inadequate to service effectively the demand growth. The ensuring production and distribution constraints precipitated incessant supply- demand crisis. Long queues at the limited retail outlets (filling stations) was a common sight. The Government responded decisively by planning and executing the construction of two more Refineries one each at Warri and Kaduna respectively.

In order ensure the continuous and adequate supply of products the N.N.P.C. established a network of strategic storage Depots and Pipelines throughout the country. Additional Depots (at Suleja, Minna and Yola) and Pipelines have been recently constructed to interconnect the Refineries. This is expected to improve the efficiency and effectiveness of the system and to facilitate the distribution of products.

Specific items like those stated above can be identified and installed if the resources are available. But there are other factors that may not be amenable to easy solution. Examples are the operational problem that cause frequent breakdowns in the refineries inspite of the resources expended on the repairs and rehabilitation of the plants. Smuggling is another

problem to which there seems to be no solutions. The N.N.P.C. is normally not responsible for anti-smuggling operations, but the competent agencies appear to be helpless in the face of an unprecedented scale of illegal transactions.

Petroleum products scarcity in Nigeria resulted not as a result of lack of it but due to inadequate distribution channel and to various factors including those stated above. Following these observations coupled with attention the company has been attraction concerning illegal oil deals recently attracted me to research on this topic.

This project will be divided into six chapters. Chapter one gives an introductory background of the study. The chapter also outlines the scope, problems, objectives, limitation of the study and definition of terms. Chapter two gives a synthesis of related literature on the distribution and marketing of petroleum products in Nigeria. The third chapter present distribution of petroleum products. Pipelines and depots facilities as well as other ways of products transportation were discussed in this chapter. The fourth chapter presents the marketing of petroleum products by the Pipelines and Products Marketing Company (P.P.M.C.). This chapter gives an over-view of billing and collection of petroleum products sales. Chapter five is on data collection and analysis. Data on the domestic supply and Consumption of petroleum products in Nigeria and data analysis are presented in this chapter. Finally, the sixth chapter presents a summary of findings and workings of the first five chapters, the conclusion of the study and the recommendations.

1.2 Problem of the Study

The major aim of establishing Pipelines and Product Marketing Company (P.P.M.C.), as a subsidiary of the Nigerian National Petroleum Corporation (N.N.P.C.) is to ensure adequate and reliable supply of petroleum products to the domestic market, safely and at low operating cost and to provide excellent customer service by effectively and efficiently transporting crude oil to the refineries and moving products to the market.

There are four domestic refineries with a combined installed capacity in excess of normal local demand. Yet the country imports conventional petroleum products to meet internal requirements .

Petroleum products scarcity have become part of the vocabulary of the retail trade. When products are not available at the filling stations they are sold illegally along country roads and in urban street corners.

What went wrong? Has N.N.P.C not been able to perform her responsibilities of supplying marketing and distributing of petroleum products effectively and efficiently to the domestic consumers ?
These are what this study intends to find out.

1.3 Objectives of the study

The objective of the study is to collect, compare and analyse data on petroleum products distribution and marketing in order to identify the capabilities of N.N.P.C in effective and efficient distribution and marketing of petroleum products particularly " the white products " in Nigeria.

1.4 Scope of the study

The study is limited specifically to distribution and marketing of petroleum products in Nigeria. It will also touch on the aspect of local supplies of the products from our refineries . However, it will exclude importation and exportation of the products into and outside the country .

Also emphasis would be given to conventional petroleum products (also known as white products), that is, Premium Motor Spirit (Gasoline), Automotive Gas Oil(AGO) Dual Purpose Kerosene (DPK) and Liquefied Petroleum Gas (LPG) This is because they form the most important of the petroleum products in terms of usage in the country.

1.5 Limitation of the study

There has not been any significant research done in the field so far and to some extent this accounts for lack of adequate information and data for quantitative comparison of the present study with the previous works . The work of Schatzl, L.H.(1969) and some unpublished works remain the only sources of data.

Also worth noting is the fact that most available data were obtained from N.N.PC. official records.

1.6 Research Methodology

The methodology employed in this study did not entail the use of questionnaires. Most of the information and statistics required in the study were obtained from N.N.P.C. documents and publications and the rest of them from other publications .

However all information in this study were fully verified .

1.7 Definition of terms

AGO : Automotive Gas Oil also known as diesel oil, this oil is used by heavy automobile vehicles, electric generators and other heavy machineries .

ATK: Aviation Turbine kerosene, the fuel used by aircraft

Barrel : A unit of measurement of volume for crude oil and oil products . It has its origin in United states where it is equivalent to 42 U.S gallons or 35 imperial gallons. It is also equivalent to 0.158987 cubic meters.

Bill of lading : A document duly signed by master of a ship by which he makes himself responsible for the cargo. It contains, the quantity, quality, consignee, consignor, port of origin, destination, carrier and date of delivery.

Bridging : This is the movement of petroleum products from one zone to another to offset a shortfall in petroleum products marketing. It is usually by road trucks.

Conventional petroleum products : These are also called white products. Examples of these are liquefied petroleum gas, petrol, domestic kerosene, aviation kerosene, diesel oil, low pour fuel oil and high pour fuel oil.

Cubic meter : is a unit of measurement of volume which is equivalent to 1,000 Litres or 6.2898 barrels.

DPK :Dual Purpose Kerosene (domestic kerosene)

ENI : Ente Nazionale Idrocaburi - Italy's National Hydrocarbon Agency

Fuel Oil : These are low pour fuel oil (LPFO) and high pour fuel oil (HPFO) These products are mostly used by industries with heavy machinery.

Gasoline : The same as Petrol or Premium Motor Sprit (PMS)

Gas Oil : The same as diesel oil or automotive gas oil (AGO)

Independent Marketers: These are wholly owned indigenous oil marketing companies granted operating licenses by the government to market petroleum products for domestic usage.

Liftings : The quantity of crude oil or refined petroleum products moved from petroleum storage facilities by road tankers, rail tank wagon coastal vessels and pipelines

LPG : Liquefied petroleum gas , cooking gas.

Major oil marketers : These are the major multinational oil marketing companies operating in Nigeria .

OPEC: Organisation of Petroleum Exporting Countries

Petroleum products: Products manufactured from crude petroleum, examples of these are the conventional petroleum products like liquefied petroleum gas (LPG), premium motor spirit (petrol) dual purpose kerosene (domestic kerosene) Automotive gas oil (diesel engine oil) Aviation Turbine kerosene (aviation fuel) low pour fuel oil and high pour fuel oil e.t.c.

Pipelines : is a transportation system for the conveyance of minerals oils, natural gas and any of their derivatives or components

Pump price: the retail price fixed by the government at which the public buy petroleum products at the retail outlets (filling stations)

PMS Premium Motor Spirit: (petrol) also known as gasoline

Shut - down : Overhauling session in a refinery, during which maintenance work is effected.

Through - put : The volume of feed stocks charged to a process equivalent in a specified time . It also applies to the volume of crude or products pumped through a pipeline or lifted from a depot.

White products : these are conventional petroleum products like premium motor spirit (PMS), Dual purpose kerosene (DPK) and Automotive Gas oil (AGO).

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

Prior to 1979 the pattern or petroleum products movements was by batch transportation by sea or coastwise tanker, rail tanker wagon and road tanker trucks. The use of pipelines in the oil industry in Nigeria was introduced in 1979 . The purpose of pipelines network systems in the petroleum industry is to transport large volume of crude oil, gas and refined product overland, from a fixed centre of production to a fixed centre of consumption. Our study centres on the evaluation of the performance of Nigerian National petroleum corporation (N.N.P.C) The organisation which shoulders the responsibilities of distribution and marketing of petroleum products in Nigeria. To this extent therefore, an understanding of the physical distribution and marketing of petroleum products in Nigeria and the problems associated with it is obvious. On this account, this chapter attempts to provide a frame work of petroleum products distribution and marketing as well as an insight on measuring organisational performance.

2.2 Distribution and Marketing of Petroleum Products in Nigeria

The first petroleum product to be marketed in Nigeria was "Sun flower" Kerosene introduced by Socony vacuum oil company (now Mobil Oil) in 1907. Since then marketing and distribution of petroleum products were in the hand of foreign oil companies and it was not until the 1970s that government took the decision to be involved in the development of petroleum products marketing.

At the moment there are Eight major oil companies operating in Nigeria, namely, Mobil, Total, African petroleum (AP), Agip, Texaco, National, Unipetrol and ELF.

Apart from these companies government through its "independent marketers" scheme has encouraged small scale indigenous companies to be involved in productions marketing throughout the nation.

In the early days of oil industry in Nigeria crude oil produced was wholly exported and local needs for products were met through importation. However, in 1965, a refinery with a processing capacity of 35,000 barrels per day was established in Port-Harcourt. The supply of "white products" from this refinery was enough to meet domestic demand and surplus fuel oil was available for export. The processing capacity was subsequently expanded to 60,000 barrels per day to meet increasing domestic demand. However, the economic recovery from the civil war in the early seventies was very rapid resulting in large increases in demand for the products. This development resulted in acute shortage of petroleum products and government had to enter into offshore processing arrangements to refine Nigerian crude oil in Caracas and Rotterdam for re-importation. (Amu,1983)[1]

Petroleum products consumption has been growing steadily; it was only 32,600 barrels per day in 1971 and by 1975 it had risen to 63,217 barrels per day. By 1981, total consumption had increased to 175,988 barrels per day and inspite of the economic down-turn, it is currently estimated at over 250,000 barrels per day (David West, 1985)[2]

In order to avert major crisis from shortages of petroleum products, government took a number of crucial decisions in the mid-seventies. Domestic refining capacity had increased to 260,000 barrels per day with the commissioning of Warri refinery of 100,000 barrels per day capacity in 1978 and the Kaduna refinery of 100,000 barrels per day in 1980. Government in addition constructed 3001 Kilometres of multi-products and single-product pipelines making a total of 18 petroleum product depots strategically located throughout the country.

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[1]See Amu, L. (1983) A review of Nigeria's Oil Industry. NNPC Public Affairs Publication Pg. 14-15

[2]David West, T. (1985). Perpective of the Nigerian Oil Industry,"Golden Medal Lecture" Lagos, 16th August, pg. 9-10

The low level of liquefied petroleum Gas(LPG) production before the dramatic increase of 1979 was due to the fact that only one refinery owned and managed by the then Nigerian Petroleum Refinery Company Limited, Port-Harcourt, was in operation . With the expansion of refineries to include Warri and Kaduna refineries in 1978 and 1980, Liquefied petroleum gas production was increased by more than 100 per cent.

The phenomenal increase in Liquefied Petroleum Gas consumption is attributable to rapid increase in Urbanisation following the oil boom and the absence of clear cut policies on income distribution between the Urban and rural sectors of the economy. Urban concentration led to increase in demand in Liquefied petroleum Gas and kerosene as fuel-wood and charcoal prices rose in response to demand pressures and government subsidies

Nigeria imports products as the effective operating capacity of local refineries could not meet the demand. As a result government decided to build another 150,000 barrels per day refinery in Port-Harcourt and increase the capacities of Warri and Kaduna refineries by a process of debottlenecking which brought the total refinery capacity to about 445,000 barrels per day in 1990. Despite this increased refining capacity, the country still imports petroleum products. The chairman of the National Economic Intelligence Committee (NEIC) Professor Sam Aluko was quoted saying, "about $45million (N36.5billion) had been spent by government in fuel importation between January and June this year. This figure is $51 million more than the $400 million budgeted for oil imports for the whole year. The huge imports, in spite of the fact that the combined output of the nations four refineries at 445,000 barrels per day, by far exceeds the 250,000 barrels per day expected to be used up by the domestic market" [3]

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[3]Quoted from **This Day Newspaper,** (Lagos), 1996. Fuel Imports, 23, July Pg. 1

2.3 International Petroleum Products Demand and Supply.

The world energy marketing mix are quite difficult to forecast. This is because of the complex nature of various factors that determine their patterns. Certainly, events of the past few years have shown market that has an unpredictable behavioural pattern and one that has often rendered well articulated projections grossly inaccurate.

With regard to petroleum products, demand and supply balance are in general influenced by;

(a) economic factors such as growth rate;

(b) Consumer behaviour;

(c) Environmental factors and

(d) Technical factors.

The complexity and interplay of these factors in dictating energy requirement and supply make forecast of future market situation almost impossible. However, analysts believe that world energy and indeed oil consumption will grow continuously but at a low rate in the next 10-15 years. In the highly industrialised countries, considerable growth in demand is expected in the gasoline and the middle distillate range while the consumption of heating oil is likely to decline. It is also widely believed that rapidly growing economies of the less industrialised nations of Asia and Africa will have energy demand growth far out pacing those of the Organisation of European Community Development countries (O.E.C.D.)[4]

Looking at the supply side of prospective markets United States of America has now sufficient refining capacity to meet her domestic needs while Western Europe has excess of her requirements. This notwithstanding, many market watchers contend that stringent environmental regulations currently being put in most of these countries will eventually lead to short fall in supply. Some older and marginal refineries are likely to shut down while

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[4]See Export oriented refinery and export processing zone. Lecture delivered at a seminar organised by the Calabar Chamber of commerce and Industry, Calabar. NNPC Public Affairs Publication, 17-18 March, 1992. Pg. 8-10

relatively newer ones would require high level of capital to install equipment needed to meet regular standards. It is, of course, becoming increasingly difficult to build new plants in the united states, as permit requirements are practically impossible to fulfil. Moreover, petroleum producing countries are progressively replacing crude oil sales with products export. This will strain some United States and European refineries and make their products less competitive in the market.

We are well aware of the market implications and the strong challenges that the creation of an America free-Trade Zone (being planned by the United States, Mexico, and Canada) will pose. We are, also mindful of the fact that the collapse of the Soviet Union and the Communist block countries would affect oil market dynamics but it can be reasonably assumed that the impact on the petroleum products supply will take some time to manifest.

Regardless of the forgoing Nigeria's export refinery should be able to have a niche in the major market of Organisation of European Community Development (O.E.C.D) countries but more importantly bigger markets will open-up in the growing economies of Asia and Africa where energy consumption, currently dismally lagging behind those of Organisation of European Community are expected to increase significantly. At home such refineries could be called upon, from time to time, to bridge shortfalls in local supplies.

There is, therefore considerable assurance of very good prospects for our export refinery but being mindful of the fact that many oil exporting countries that are manning or already building such refineries are eyeing the same consumer, we should recognise the paramount importance of timely entry into the market.

2.3 1 Organisation of Petroleum Exporting Countries (0.P.E.C.) -

Production and Demand.

Bearing in mind the increase in domestic product demand and the advantages of expanding their market share in the inter-national product markets, member countries have been involved

in various refining projects during 1991. In Latin America, Venezuela is currently involved in down stream refinery unit expansion and modernisation. In Africa, Nigeria is reviving its domestic refinery units to full capacity following a series of refineries mishaps that have limited the country's potential as a supplier of gas oil and fuel oil to the international product market. Algeria and Libya have begun to implement a programme to modernise and upgrade their refineries.

In the Middle East, Iran is constructing wholly new refineries at Bander Abbas and Arak and a condensate refinery at Bander Taheri, with the completion of its second phase, the capacity of the Abadan refinery has been increased to 297,000 barrels per day. Iraq is also involved in modernising and upgrading its refineries. Kuwait's Mina Al-Ahmadi, and Mina-Abdullahi refineries have been revived from war damages. Saudi Arabia has also embarked on extensive domestic refinery expansion and upgrading programmes to enhance the output of value-added products, mainly for export. The united Arab Emirates (U.A.E.) has also under taken projects to expand and upgrade its domestic refineries. In the far East, Indonesia has constructed two new refineries for domestic consumption and export.

Early in the year 1992, Iraq recommissioned its Basrah refinery and this has restored its local refinery capacity to its pre-1990 Middle East Crisis level. This total capacity is now excess of the country's domestic requirements.(OPEC annual report, 1992)[5].

2.3.2 Products Demand in Italy and Japan.

In Italy the country's refining capacity amounts to 175 million tons per year, greatly exceeding the domestic demand of petroleum products which is at present on the order of 100 million tons.

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[5]See OPEC Annual Report, 1992. Pg. 23-24

A large part of the refining capacity was built by private national operators who were during this period have kept going 50 per cent of this total refining capacity thus substantially exceeding the shares of the major international Oil companies (35%-37%) and that of country's National Hydrocarbons Agency, Ente Nazonali Idrocarburi (ESN) Group (12%-15%).

Sfligiotti (October, 1975)[6] advanced two reasons which have led to the installation of a total capacity far in excess of the domestic needs. These factors become highly significant in a situation where there is an intensively dynamic development of the technology and the market.

The first factor, wholly institutional is tied to the fact that a large part of oil activities are normally carried on by a small number of very large companies, in a market characterised by fast growing demand and by heavy competition, these companies have followed a policy objective aimed at guaranteeing in the future their individual market share.

The second factor, is tied to the noticeable advantages of larger refineries from the stand-point of unit production costs. The maximum size of the plant now operating in Italy is exceeding 15 million tons per year,

On the other hand the yearly increase of domestic demand during 1967-73 period was equal to about 7 million tons. As a consequence, each individual company has increased its refinery capacity at a growth rate of its product demand. Today there are 33 refineries in Italy with a total capacity of 175 million tons per year. Average unit annual refining capacity is therefore about 5.3 million tons. However, only 17 of these refineries have capacities equal to or

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[6]Sfiliotti, G. (1975) Origin and Present Prospective of ENI as Italy's National Hydrocarbon's Agency. A lecture delivered at a seminar on prospect of Arab refining industry, held in Damascus, Syria, 18-23 October.

greater than the average while some ten or so plants have capacities below 2 million tons per year.

The dispersion of the refining activity among large number of plants has not been favourable as well for the development of a rational system of pipelines for transporting products. This of course, is because pipelines, generally are competitive means of transport only if large amount of products are involved, which obviously can be provided only by large size refineries.

Japan is working towards diversification of energy sources to alleviate dependency on petroleum products. Kuboto(October, 1975)[7] in his paper titled petroleum Refining Industry in Japan, writes; "Since the beginning of calendar year 1974 like most other countries in the world, the diversification of energy sources has been strongly advocated, and increased use of nuclear energy for electric generation and acceleration of import of Liquefied Natural Gas (LNG) has been emphasised so as to alleviate dependence on petroleum."

The share of petroleum energy supply in 1985 in Japan decreased to 63.9% from its 77.6% in 1973, while the shares of nuclear energy and Liquefied Natural Gas increased to 9.6% from 0.6% and to 7.9% from .08% respectively.

[7]See Kubota, K. (1975) Petroleum Refining in Japan. A proceedings of the seminar on prospect of Arab refining industry held in Damascus, Syria, 18-23 October.

2.4 Petroleum products Distribution in Nigeria: Prior to And After Commissioning of Pipelines.

The British Petroleum Oil Company in its book titled "Our industry" (1959)[8], describes distribution of petroleum products to have completed when the products reach the final consumer. The book further describes the organisation of the distribution companies and their distribution process. There are eight of such companies in Nigeria. They include, Mobil, Total, Agip, Texaco, Nolchem, Unipetrol, African Petroleum (AP), and Elf. Since these Companies are multi-nationals which have world wide operation, they normally market their products under their own trademarks and brand names. Side by side with activities of these "major oil marketers" is the competition posed by the activities of "independent oil marketers".

The book further asserts that it was usual for products to be refined near oil fields and later transferred to installations strategically located. The above principle though depicts what operates in United Kingdoms (UK), represent to a large extent what obtains in Nigeria. The book compares products distribution system in UK with that of United States (US) and France.

Contrary to the system of locating oil refineries near oil field in Britain and Nigeria, in Italy refining facilities are located away from the oil fields. Sfligiotti in his paper titled, the Experience of Ente National Indrocarburi (E.N.I) as a national Corporation in the development and expansion of the refining industry in Italy, writes, " this accelerated development of oil refining industry in Italy in that period can be explained on the basis of the general world trend to locate refining facilities away from the oil fields (resource refineries) and near consumer markets (market refineries) or intermediate areas (intermediate refineries)[9] ".

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[8]For futher discussion see the BP Oil Company, (1959). Our Industry. The BP Oil Company, London, pg. 201-202.

[9]This quotation is adapted from Sfiliotti, G. (1975). Origin and Present Prospective of ENI as Italy's National Hydrocarbon's Agency. A lecture deliverd at the seminar on prospects of Arab refining industry held in Damascus, Syria, 18-23 October

Such a tendency can be justified on the basis of a number of reasons, mainly of an economic nature, as indicated in the following .

(a) It is economically more convenient to move crude oil rather than a whole series of products, larger tankers could be employed, the facilities for oil receiving and movement (ports, rails, roads, and pipe lines) are less complex and less expensive .

(b) Nearness to markets allow sizing and structuring of refineries as a function of demand patterns of the individual area to be served.

(c) Certain refinery products, due to either chemical and physical characteristics or the small amounts involved, cannot easily and economically be transported over long distances.

(d) Crude oils of different sources and quantities can be processed in order to tailor refinery production according to the products local demand . This factor is peculiar to Kaduna refinery and petro-chemicals . This refinery utilises crude oil exported from Venezuela and Kuwait which contain chemicals required by her petrochemicals plant .

From the monetary point of view, the purchase of these crudes by Nigeria instead of middle distillates required for the petrochemicals feed, results in currency savings and therefore an important factor for the country with heavily deficitary trade balance.

According to L.H. Schatzl[10], in his book "Petroleum in Nigeria" published in 1969, the Nigerian Petroleum Refining Company (N.P.R.C.) Port-Harcourt formed in 1959 was the result of the agreement reached between the company and the Shell B.P. The refinery was constructed between 1962 and 1965. It was commissioned in 1965.

On distribution of petroleum products, Schatzl worked on the regional consumption of petroleum products. He divided the country into three zones in line with individual oil companies zones of selling operation. Zone one was made up of Lagos, Western and Mid-Western regions, zone two and three covered Eastern and Northern region respectively. From

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[10]See Schatzl, L.H. 1969. Petroleum in Nigeria. Oxford University Press, Ibadan, Pg. 223

his assessment, the oil companies distributed 61% of the country 's total oil trade in zone one in 1964, zone two disposed of 21.5% and 17.5% in zone three. Schatzl used local concentration of retail outlets within the three zones for determining the regional consumption of petroleum products.

Schatzl discusses the distribution of petroleum products before and after the premier refinery in Port-Harcort in some lengths. His work pointed out that there were two base depots situated in Apapa and Port-Harcort. In addition there were intermediate depots in the hinterland. These played an important role in the distribution of products in Nigeria . The storage depots were owned by individual oil marketing companies. However, the severe shortages of petroleum products experienced in the country during 1974 and 1975 were attributed to poor distribution network for the products. Storage facilities provided by the individual oil marketing companies were inadequate to hold sufficient stocks for the country's consumption. To solve this problem the government abolished all the storage depots owned by the marketing companies and established seventeen (17) storage depots nation wide.

Prior to opening of the refining at Port-Harcourt about 77% of Nigerian petroleum products requirements were distributed from the base depot at Port-Harcourt in 1964. Similarly, the depot at Apapa supplied 56.4% of the national demand. The products were transported to the depots in Western and Northern Nigeria by railway and inland waters.[11]

With commissioning of the Port-Harcourt refinery the individual oil companies lift products from it . The companies may choose to deliver to end user or deliver at their depots.

Schatzl concluded his work with a projection that products would be supplied from Port Harcourt refinery to all depots in the North. That Jebba and Lokoja would be served by

[11]Adapted from the works of Schatzl, L.H. (1969) Petroleum in Nigeria. Oxford University Press, Ibadan. Pg. 223

barges through Niger. He asserts that railway line running Northwards from Port-Harcourt will transport1/6th of the total consumption in future.

Schatzl worked with available data in his time to project the future of products distribution . Perhaps he underrated the rate of change and development of Nigeria .
The Nigerian economy has increased and is increasing every day. For example , in the period 1975-1980, growth in domestic consumption rose by an average of 19% annually, to reach 250,000 barrels per day in 1984. There is therefore, a need for reliable and effective distribution and marketing system in the country , which our study is addressing itself to.

Abubakar (October,1987)[12], in his work, titled the effectiveness of pipelines and depots system as a solution to petroleum products marketing in Nigeria, assessed the pipelines and depots system as an efficient one . He writes, " consumption and therefore distribution of petroleum products (gasoline , kerosene and diesel gas oil) has increased by an average of 72% when compared with what was distributed between 1975-1979 when pipelines network was yet to be fully operational . If one considers the economic activities of the 70s and down - turn of the 80s , a decrease rather than an increase would have been envisaged. On this note the pipelines and depots system has therefore improved the distribution of petroleum products in the country."

He also found that pipelines off-take of products produced by all the nations' refineries between 1980-1986 totalled 68% as against 32% moved by other transportation modes. According to him, on this alone pipelines network has been effective method of distribution of petroleum products in the country. He was of the view that without the pipelines system, the incidence of petroleum products shortages would have been wide spread and crippling .

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[12]The quotation in this paragraph is drawn from the works of Abubakar, A.(Oct. 1987). The Effectiveness of Pipelines and Depot system as a solution to petroleum products marketing in Nigeria, 1982-date. Unpiblished MBA Project, ABU Zaria, Pg. 77

Abubakar, also noted that the petroleum licensed retail outlets throughout the country have been showing increasing trend since since 1974. He pointed out that the proliferation of many indigenous filling stations (independent marketers) would not have been possible without pipelines network and depots system. However, the fuel scarcity which the country experienced recently (from 1993-1994) , clearly shows that provision of pipelines network alone is not the only factor to reckon with in ensuring effective petroleum products distribution in the country . Other factors such as smuggling, diversion, hoarding, illegal bunkering etc.. of petroleum products play an important role in contributing to ineffectiveness in distribution of petroleum products in Nigeria .

In his work titled, "Distribution problems and determination of future demand for petroleum products in the Northern states of Nigeria ", Isiaku (1982)[13], noted some problems of products distribution related to operations emanating from N.N.P.C. to include:

i) Breakdown of loading equipment in the depots and lack of spare parts.

ii) Disruption of loading operation as a result of tank -truck drivers strikes.

iii) Diversion of products by tankers drivers

iv) Inadequate programming and planning of trucks by marketers

v) Inadequate retail outlets especially in rural areas.

It is important to note that out of the problems enumerated by Isiaku in his work, only problem (i) could be directly linked to N.N.P.C. For example, NNPC is not responsible for transporting products from depots to filling stations , it is not responsible for controlling diversion of products and is also not responsible for the insufficiency of retail outlets.

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[13]The problems of product distribution quoted in this paragraph were discussed in details in the works of Isiaku, M.A. (1982). Distribution problems and Determination of future demands foe petroleum products in Nothern state of Nigeria. Unpublished MBA Project ABU, Zaria.

This study centres on evaluation of the performance of Nigerian National Petroleum corporation in effective distribution and marketing of petroleum products in Nigeria. The literature review revealed the role of the company in this aspect and even the distribution and production problems encountered by more developed countries (such as United States, Japan and Italy) which are yet to be witnessed in Nigeria .

It is our intention therefore, to learn from mistakes and experiences of these countries that have been in this business before us. The work attempts to quantify the effectiveness of the company in performing its corporate functions . To do this we weigh the set goals against the performance of the company.

TABLE 3.1
CHANGES IN TRANSPORTATION MODE OF REFINERY OFFTAKE 1977-1985

YEAR	ROADS		RAIL		SEA		PIPELINES	
	% Share	Change over Previous Year	% Share	Change over Previous Year	% Share	Change over Previous Year	% Share	Change over Previous Year
1977	39.4		9.4		51.2			
1978	50.2	10.8	6.6	-2.8	43.2	-8	43	
1979	36.9	-13.3	4.4	-2.2	37.2	-6	21.5	-21.5
1980	32.4	-4.5	2.7	-1.7	31.2	-6	33.7	12.2
1981	30.2	-2.1	0.9	-1.8	25.3	-5.9	43.6	9.9
1982	26.2	4	0.9	0	22.8	-2.5	50.1	6.5
1983	28.4	-2.2	0.8	-0.1	22.9	-0.1	47.9	-2.2
1984	23.9	-4.5	1	0.2	22.7	-0.2	52.4	4.5
1985	26.2	2.7	1.47	0.47	25.12	2.42	46.79	-5.6
TOTAL CHANGE 1977-85		-12.8		-7.93		-26.1		3.8

SOURCES: NNPC ANNUAL PETROLEUM PRODUCTS STATISTICAL BULLETIN 1985

CHAPTER FOUR

MARKETING OF PETROLEUM PPRODUCTS

4.1 Introduction

Products sales are made through eight (8) major marketing companies and five hundred (500) independent marketing companies who have numerous dealers all over the country. The major marketers are National, Mobil, Total African Petroleum (AP), Texaco, Agip, Unipetrol and Elf.

Most products liftings are lifted by marketer's truck at depots nearest their outlets. The marketers purchase products at ex-depot/Refinery prices and sell at the approved pump prices. This is to ensure uniform prices throughout the country. Products shortage at depot is met by bridging the product from next depot or from other areas at no extra cost to marketers.

Most of the independent marketers are required to pay before being allowed to lift any product from the depots. They are thus usually referred to as cash customers or non-credit customers. The Major Marketers on the other hand may lift products and be billed later from PPMC'S finance and accounts headquarters. These are the credit customers.

As at December 1988 there were a total of 27,520 petroleum products licensed retail outlets in the country out of this number 2,190 were industrial consumers, 4,710 were petrol filling stations, 18,884 were for kerosene surface tanks and 1,736 were for storage and sales of Liquefied petroleum gas (LPG). The details of the petroleum product licensed retail outlets in Nigeria is given in Appendix I and II respectively.

4.2. Billing and Collection of Petroleum Products Sales:

Billing and collection of petroleum products sales is one of the key aspect of marketing operations in PPMC. This important activity is carried out by various departments in the company. These include supply and distribution departments, Sales department and Finance and Accounts Department.[14] The functions of each these department would be examined.

4.2.1 Supply and Distribution Department:

Supply and Distribution Department (S&D) is the unit charged with full responsibility for scheduling physical movement of petroleum products. As the name implies, it collates marketers product requirement and destination and schedules the supply to meet those requirements. It sets the price for domestically consumed products taking into account governmental regulations. It keeps track of stock and movement of products using information such as stock balance and out turn Reports from Depots. At the instance of S&D, products are moved from one storage facility to another. For example, from jetties to Depots using vessels.

4.2.2. Sales Department:

Sales Departments is essentially responsible for sales of all petroleum products for both domestic and international marketers. It negotiates with buyers on destination, quality required and determine the price and mode of payment.

4.2.3. Finance and Accounts Department:

Finance and Accounts Department (FAD) is responsible for all finance accounting matters in PPMC. In this respect, it is solely responsible for billing marketers and collecting payments accruing to corporation. This function is performed by placing billing staff at Depot where the primary documents for billing (invoice) is originated. FAD keeps ledgers for all marketers and

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[14]Much in this section is drawn from the works of billings and collection, school for PPMC staff, instructors guide, April to June 1990 edition. NNPC public affairs publication pg. 1-5

therefore is in a position to determine and inform management on the level of indebtedness of each marketer.

4.2.4 Interface between supply and Distribution Department, Sales and Finance and Accountant Department.

Having mentioned briefly the functions of each of these departments, let us examine the interface between them.

For the purpose of billings and collection, FAD is the collection centre and I will therefore relate the functions of the other departments to it. S & D is linked to FAD through bills of loadings for liftings made in barges at jetties which are passed on to FAD together with the out-turn reports. S & D effect this transfer of document after it has checked the transaction for accuracy in quantity, price and destination.

Sales department raises invoicing notes for export and banker sales which are passed together with bills of lading to FAD for invoicing.

Since each of these units has an input into what eventually becomes the marketers statement, it is imperative that each and everyone of them does so within the minimum stipulated time in order for the marketer to get the statement on time. Timely delivery of matters statement would enable FAD collect payment on time, which is the ultimate goal of the system.

4.2.5. The process of billings and collection:

PPMC Depots basically deal in "white products" which include premium motor spirit (PMS), Dual purpose kerosene (DPK), and Automotive Gasoline oil (AGO). The exceptions are refinery depots that also deal in special products like Base Oil, asphalt, benzene, wax etc. The refinery depots include Warri, Port-Harcourt, and Kaduna. Returns from these depots include invoices, meter tickets, and invoice listing sheets, these are sent by all depots to PPMC headquarters. The process is as follows:

(i) Sales supervisor prepares meter tickets based on allocation by sales.

(ii) Depot billing staff raise invoices and are checked by the marketers representative, who collects the original copy 24 hours after the product is lifted.

(iii) Depot Accountant batches Monday to Sunday invoices on the 8th and 9th day following the first day of lifting .

(iv) Depot Accountant delivers the batch to the Area office on the morning of the 10th day.

(v) Area office delivers consolidated batches from all these depots within the area to PPMC-FAD headquarters, on the 11th day .

(vi) PPMC-FAD, headquarters compiles and relays delay report via a radio massage to defaulting area offices/ depots, at the end of day 11.

(vii) Receiving officer in Lagos despatches the invoices on day 12 to the computer room for processing.

(viii) The schedule offices (computer) process the depot returns to form part of the consolidated marketers sales report.

4.2.6. Sources of Disputes between PPMC and Marketers:

There are three major sources of disputes between PPMC and marketers at the depots. These include the following:

(i) Over-invoicing or under-invoicing

(ii) Arithmetic error

(iii) Volume disputes.

Over-invoicing or under-invoicing

Over-invoicing or under-invoicing occurs when wrong rates are used to invoice a marketer example, when domestic rates are used to bill export sales or when bunker liftings are invoiced at export rates or vice versa.

Arithmetic error

This occurs when there are errors in the arithmetic calculation of volume of products lifted multiplied by its price.

Volume disputes

This is commonly found in jetty liftings where volume of shore and off-shore readings differ. The same applies to the Apapa marketers joint facility where products shared amongst the marketers need to be confirmed by each marketer.

4.2.7. Procedure for Dispute Resolution at Depots:

Disputes are usually resolved at depot level. If there is any discrepancy the marketers representative at the depot or the billing staff would point it out. Thus the billing staff and the sales supervisor will resolve it immediately. In a situation where wrong rates are used to bill a marketer resulting in over or under invoicing, a credit or debit note respectively are issued to the marketer immediately.

CHAPTER FIVE

DATA COLLECTION AND ANALYSIS

5.1 Introduction

In the 1980s petroleum product have constituted approximately half of the country's energy consumption. Taking commercial energy consumption alone, petroleum products have been supplying over 80 percent of needs. (Appendix III)

However, since the onset of recession in 1982, the consumption of petroleum products in Nigeria has tendered to decline. Between 1983 and 1984 demand for premium motor spirit, i.e.. petrol, fell by 5.4 per cent to 4,900 million Litres. Diesel oil purchases fell by 25.4 percent to 695 million Litres for 1984, while fuel oils, experienced sales erosions of between 20 and 50 percent. Only consumption of liquefied petroleum gas (LPG) and kerosene registered increase in that period (Appendix IV).

The OPEC New agency attributed the reduced consumption of most fuels in 1984 to the government stiff regulation against illegal deals and smuggling. The recession's damaging effects on the industrial and commercial sectors have also played their part in reducing domestic demand.

Market for fuel in most common use i.e. Motor spirit, has fluctuated with the number of vehicles on Nigeria's roads and with additional seepage by the smuggling business. After spectacular growth in demand during the 1970s, from 1.5million tonnes in 1976 to 3.6million tonnes in 1981, it has stabilised at around 4million tonnes in 1984.

Gas oil or diesel is mainly used on Nigeria's roads by heavy goods vehicles, company or individually-owned but also by the railways, private power generating units, ferries and fishing

crafts, construction companies and commercial farms. Consumption had been expected to rise at an approximate rate of 10 percent a year, but it fell between 1993 and 1994 by 32.4 percent.

Kerosene is still in great demand for cooking and lighting in urban areas. Demand grew by 13.2 percent a year between 1977 and 1981. It stood at 939,422 million Litres in 1994.

The main users of fuel oil have been textiles and cement factories as well as ocean-going vessels. Low pour fuel Oil (LPFO) is favoured domestically and there is a substantial surplus of High pour fuel oil (HPFO), a fact which was exploited by product smugglers in the 1980 - 1981 period. Production of HPFO in 1981 was 946,000 tonnes, although domestic consumption was only 247,000 tonnes. Combined LPFO and HPFO Consumption stood at only 805, 900 tonnes in 1984, down from 1.2 million tonnes in 1982[15] (Appendix V).

5.2 Petroleum Product: Production and Consumption

5.2.1. Production.

A look at the product out-put from the local Refineries in 1993 and 1994 (Table 5.1) show a decreasing trend in the quantity of petroleum products produced by the Refineries. This confirms the fact that the Refineries were always operation at far below installed capacities.

A break-down for product out-put from the local Refineries in 1993 and 1994 are presented here for some analysis (Table 5.1)

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[15]Richard S. (1986) Energy in Nigeria, Published by Middle East Economic Digest Limited, London. Pg.49-53

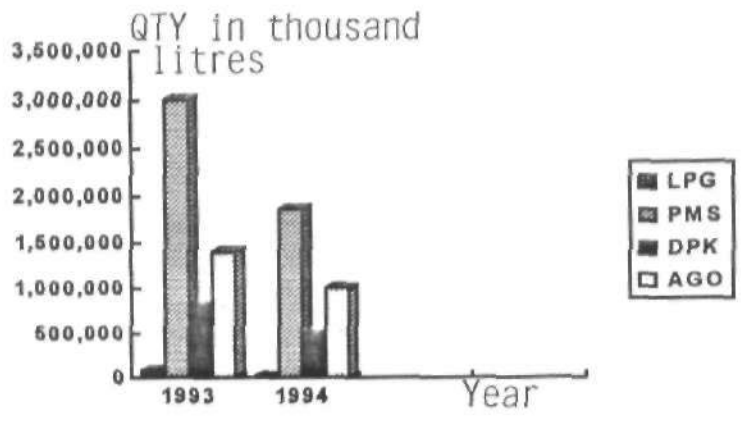
TABLE 5.1
PRODUCT OUT-PUT FROM THE LOCAL REFINERIES IN 1993 AND 1994

PRODUCT	1993	1994	% CHANGE OVER PREVIOUS YEAR
Liquefied Petroleum Gas (LPG)	84816	9467	-88.3
Premium Motor Spirit (PMS)	3000916	1859966	-38
Dual Purpose Kerosine	793759	466824	-41.2
Automative Gas Oil (AGO)	1396633	1000218	-28.4

NOTE: All figures are in thousand litres unless otherwise stated.
SOURCES: Department of Petroleum Resources (D.P.R.)

FIG 1

GRAPH SHOWING THE PRODUCT OUT-PUT FROM THE LOCAL REFINERIES IN 1993 AND 1994.



It can be observed from the above (Fig.1) that all the products were produced much more in 1993 than in 1994. Products were therefore imported from the off-shore refineries in 1994 to supplement Petroleum Products lifted off our local refineries for local consumption (Appendix VI).

5.2.2. Consumption

There has been a fluctuating trend in the petroleum product consumption behaviour of Nigerians over the past two decades. A look over the years will show that there was a decline in petroleum products however, there was a general increase in the volume of conventional products consumed in the country between 1990 to 1992 (Appendix VII). But in 1993 there was a fall in consumption of these products. 1994 also witnessed another decline in general level of these products consumed across the country. (Table 5.2).

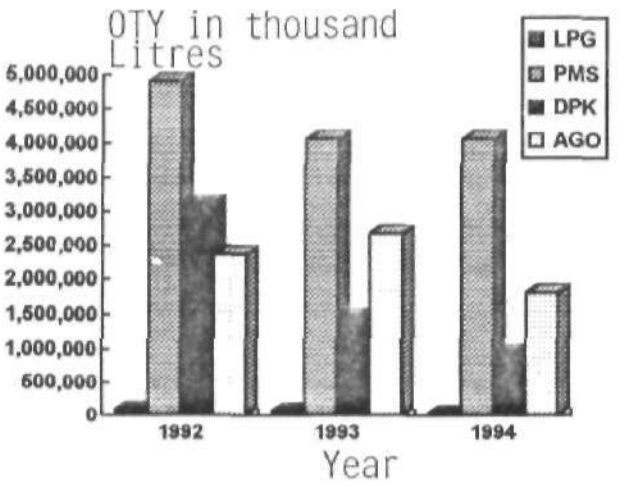
Table 5.2.

Product	1992	1993	1994
Liquefied Petroleum Gas	91,135.0	72,132.0	33,745.0
Premium Motor Spirit	5,110,132.0	4,908,041.0	4,068,238.0
Dual Purpose Kerosene	3,108,936.0	1,466,260.0	939,422.0
Automotive Gas Oil	2,370,920.0	2,673,402.0	1,806,642.0

Note: All Figures are in thousands of Litres
SOURCES: Dept. of Petroleum Resources (DPR) Lagos

FIG. 2

Graph showing Volume of Petroleum Products consumed in Nigeria between 1992 to 1994.



It can be observed that most of the products have maintained a declined trends within the period (Table 5.2). For instance, the annual volume of the Liquefied petroleum Gas (LPG) (cooking gas) in the country since 1992 has been on the decrease. It decreased by 20.9 percent i.e. from 91,135 thousand Litres in 1992 to 72,132 thousand Litres in 1993. It further fell by 53.2 percent to 33,745 thousand Litres in 1994.(See Fig. 2) This is also a pointer to the fact that our local refineries were operating at far below installed capacities.

The volume of kerosene (domestic) consumed in the country in 1993 declined by 52.8 percent, that is, from 3,108,936 thousand Litres in 1993 and 35.9 percent in 1994. The volume of Automotive Gas Oil (Diesel Oil) consumed fell by 32.4 percent within the same period. The details of other changes in the petroleum Products consumption during the same years can be obtained from Table 5.3.

The decline in the consumption of petroleum products in 1994 could be attributed to the recent increase in the pump price of the products in the country, that is to say the price increase might have installed discipline in the consumption habits of the Nigerians.[16]

[16]See Nigerian Petroleum News, No. 122, Energy Publication Limited, August, 1994

TABLE 5.3

PERCENTAGE INCREASE/DECLINE IN PETROLEUM PRODUCTS IN NIGERIA 1992-94

PRODUCT	1992	1993	% CHANGE OVER PREVIOUS YEAR	1994	% CHANGE OVER PREVIOUS YEAR
LIQUEFIED PETROLEUM GAS	91,135.0	72,132.0	(20.9)	33,745.0	(53.2)
PREMIUM MOTOR SPIRIT	5,160,132.0	4,908,041.0	(4.9)	4,068,238.0	(17.1)
DUAL PURPOSE KEROSINE	3,108,936.0	1,466,260.0	(52.8)	939,422.0	(32.9)
AUTOMOTIVE GAS OIL	2,370,920.0	2,673,402.0	12.8	1,808,642.0	(32.4)

Note: All figures are in thousand litres unless otherwise stated.
SOURCES: Department of Petroleum Resources (D.P.R)

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Summary of Findings and Conclusions

The Pipeline and Product Marketing Company (P.P.M.C.) is arm of the corporate NNPC that is actually responsible for marketing and distribution of petroleum products throughout the country. The company was established in 1987. Over years one wonders how well the company has been performing. Out of academic curiosity and pursuit of how the company has been performing since it was established, a plan was set out to conduct the following study. (The role of Nigerian National Petroleum Corporation (NNPC) in distribution and marketing of petroleum products in Nigeria. A case study of Pipeline and Product Marketing company (P.P.M.C) Limited a subsidiary of NNPC.)

In an attempt to measure how the company performed over the years, the study compared the quantities of products produced by the local refineries and the quantities supplied to the domestic market. This work also identified the causes of the effectiveness or otherwise of the organisation and provide some recommendations. Areas of further study have also been identified and suggested.

The study revealed that prior to the establishment of the P.P.M.C. in 1987, the total domestic petroleum products consumption was approximately 5.8 million. metric tonnes. By 1989, the nation consumed about 8.7 million metric tonnes. As at 1991, PPMC processed approximately 12.7 metric tonnes of crude oil. The company sold about 12.3 million metric tonnes of products in 1990. This was 41.7 per cent high than what was realised in 1989. The cumulative products sales, for 1991 was approximately 13 million metric tonnes.

Products out-put from the local refineries in 1993 and 1994 show a decreasing trend in the quantity of products produced by the refineries. For example, production of premium motor

spirit (PMS or petrol) fell by 38 per cent to 1,859,966 thousand Litres. Dual Purpose Kerosene (DPK or house hold kerosene) fell by 4.2 percent to 466,824 thousand Litres. While Automotive Gas Oil (AGO or diesel oil) fell by 28.4 percent in 1994.

This trend confirms the fact that over years the rate of petroleum products consumption in the country has been on the increase, however, the products out-put in each of the years show that the refineries were operating at far below installed capacities.

However, despite that shortfall of products produced by the refineries no one could doubt the fact that NNPC has been effective in distribution of the petroleum products in the country. This is obvious in view of the increasing trend in quantity of products produced and distributed by the company over the years. Also the petroleum licensed filling stations throughout the country have been showing increasing trend after the establishment of PPMC. The study revealed that the proliferation of many indigenous and major marketing retail outlets would not have been possible without adequate petroleum products supply by the PPMC.

It was also found that pipeline off-take of products produced by all the Nation's four Refineries between 1980-86 totalled 68 percent as against 32 percent lifted by other transportation modes. On this note alone NNPC Pipeline Network had been an effective method for distribution of petroleum products in the country.

Inspite of these achievements and efforts, NNPC is constrained by a number of problems. These included, the unscheduled shut down of the Refineries which limits products availability, inefficient monitoring of field operations (Depots, Pump Stations and Filling Stations), smuggling of products out of the Country, hoarding of the products by the marketers and bureaucratic delays in taking actions for the purchase and replacement of important spare parts for repairs. For example, the company is expected to get corporate approval for some decisions approved by its Board.

A factor of increasing importance in petroleum products distribution is the role of road tanker drivers. The mere threat of an industrial action by the drivers may result for a "run" on the retail outlets, thus, creating real or artificial shortage and scarcity. Diversion of products by the drivers was also identified as a contributing factor to the problems of petroleum products shortage in the country. Consequently when products were not available at retail outlets, they were sold illegally along the city streets and country roads.

In conclusion, NNPC undoubtedly have short-term plans and long term strategies for distribution and marketing of petroleum products in adequate quantities, but lack of adequate planning, forecasting and implementation, poor logistics and inefficient monitoring of field operations, uncoordinated management information systems, outright sabotage manifested in mysteries fire out breaks in refining plants, product tapping along pipeline and more significantly corruption are some of the key problems militating against the effectiveness of the organisation.

Finally, one must point out that if all the recommendations stated in this chapter are implemented and facilities required for the production and distribution of petroleum products are made available it would improve the supply and distribution system and this may eliminate or minimise the petroleum products shortage and scarcity and consequently, may put an end to the importation of products into the country. This will involve additional investment but it will provide the much needed security of supply and reduce the need for large-scale importation with the foreign exchange implications.

6.2 RECOMMENDATIONS

The fact that the organisation has been effective does not mean that it has no problems. However, if the recommendations listed in this chapter are looked into, the performance of the company would improve tremendously. The recommendations offered are:-

1. Rehabilitation of the Refineries:

The efficiency of the existing refineries need to be improved and it is necessary that their number and capacities be increased.

Bureaucracy in taking some management decisions especially in releasing funds for purchase of important spare parts for refining plants maintenance should be minimised so that maintenance work could be carried out without delay.

Also it is important that the Petroleum Trust Fund (PTF) to set aside certain percentage from the products sales for the maintenance of the Refineries and other NNPC installations.

2. Provision of additional Storage Facilities:

NNPC should construct additional storage depots in strategic locations and extend the pipeline system to interconnect all the refineries and to cover areas that are yet to be reached by the system.

3. Provision of additional Road Tankers for the Transportation of Petroleum Products:

NNPC should acquire adequate road tankers. This would strengthened the petroleum products road haulage system, to be able to respond quickly and effectively in times of emergencies, example, when the tanker drivers embarked on strikes.

4. Manufacturing of Spare Parts from the Local source:

NNPC should look into the possibility of manufacturing spare parts in conjunction with some indigenous industries such as Defence Industries, Nigerian Tin Mining, Steel Rolling Mills etc. This will reduce the huge amount of money being spent on importation of spare parts and hiring of foreign firms for the maintenance of our refineries.

5. Establishment of appropriate Prices for Petroleum Products:

The Government should establish an appropriate prices for petroleum products. This will help to make smuggling no longer attractive. The Government should also appeals to the patriotic instincts of Nigerians to refrain from acts that could cause or aggravate the shortage of petroleum products.

6. Private Sector Participation in Petroleum Refining:

The Government should encourage individuals and private sectors to participate in the petroleum refining in order to boost petroleum products production in the country.

So far the Government had already approved the construction of two private refineries Qua and Brass Refineries, located at Ibeno and Brass in Akwa Ibom and Rivers States respectively.

7. Effective Monitoring of Petroleum Products Distribution:

NNPC is not responsible for distribution of petroleum products to the final consumer. The petroleum marketers and Transporters are solely responsible for products distribution to retail outlets. They could divert, or hoard. Also the Petrol Filling Stations could decide not to sell., according to David West,

> "There are all sorts of improprieties in the Oil industry in Nigeria. This is documented. There is mis-management of oil. There is fiddling. There is smuggling. There is illegal bunkering. Our oil industry is not well policed. We have all the official modalities of marketing but then there is a lot of other

marketing outside of the official channels which is not controlled. And there is good evidence of collusion right across the sectors of this society".[17]

Therefore, the Petroleum Inspectorate and the other Government agencies responsible for regulating and monitoring of petroleum products distribution in the country should be strengthened so that they could perform their responsibilities effectively.

Finally, since NNPC exhibits effectiveness in distribution and marketing of petroleum products, no amount of resources devoted to it would be too much.

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[17]This quotation is drawn from AED, African Economic Digest, April 1984 edition

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APPENDIX I

BREAKDOWN ON STATE BASIS OF ALL PETROLEUM S /SALE LICENCES ISSUED AS AT DECEMBER 31, 1988

STATE\CATEGORY	A	B	C	D	TOTAL
AKWA IBOM	8	72	143	26	249
BAUCHI	117	468	1,471	189	2,245
BENDEL	263	334	1,902	344	2,843
BENUE	24	147	282	8	461
BORNO	95	246	1,003	36	1,383
CROSS RIVER	57	201	525	54	837
GONGOLA	38	181	252		471
IMO	89	510	1,052	192	1,843
KADUNA	102	256	1,268	78	1,704
KATSINA	3	49	81		133
KANO	243	256	1,225	80	1,804
KWARA	54	138	1,720	8	1,920
LAGOS	576	275	3,069	344	4,264
NIGER/(ABUJA)	23	178	234	11	446
OGUN	93	218	980	19	1,310
ONDO	47	256	766	30	1,099
OYO	124	345	1,315	48	1,832
PLATEAU	71	189	519	54	833
RIVERS	111	175	430	192	908
SOKOTO	27	85	349	16	477
TOTAL:-	2,190	4,710	18,884	1,736	27,520

CATEGORY A - Industrial Consumer (Storage Only).
CATEGORY B - Storage and Sale of Products at Petrol Stations.
CATEGORY C - Storage and Sale of Kerosene only.
CATEGORY D - Storage and Sale Liquefied Petroleum Gas (LPG) only.

Source: Dept. of Petroleum Resources, (DPR) Lagos,(1989)

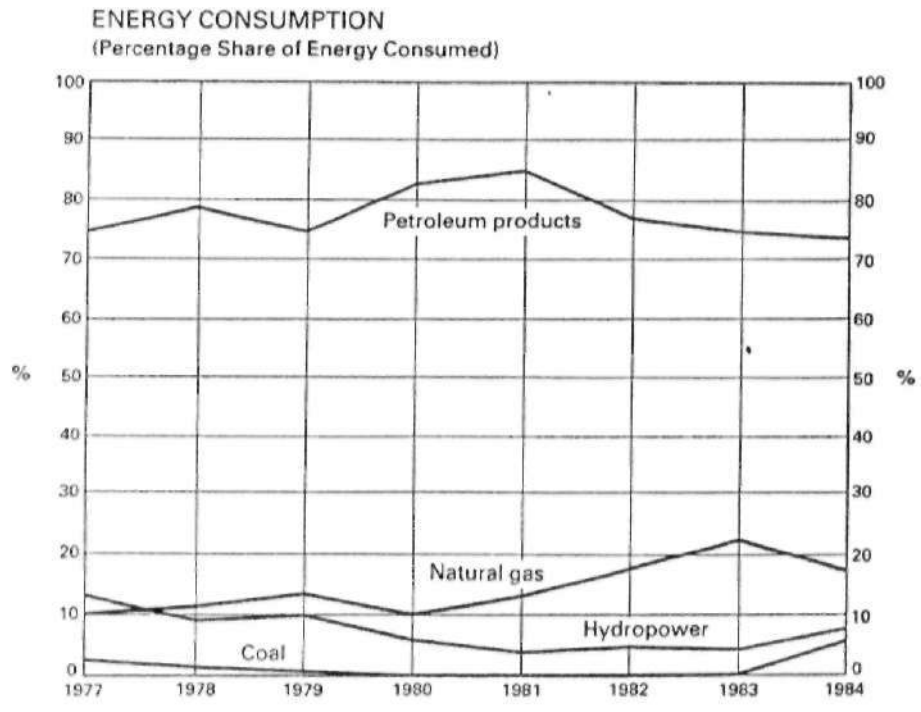
APPENDIX II

PETROLEUM PRODUCTS LICENCED RETAIL OUTLETS IN NIGERIA 1975-1986.

YEAR	NO.OF LICENCE OUTLETS
1975	1,360
1976	1,360
1977	
1978	1,503
1979	1,563
1980	1,714
1981	2,319
1982	8,683
1983	8,894
1984	13,138
1985	32,746
1986	27,424

Sources: Petroleum Inspectorate, NNPC Lagos, 1987.

Appendix III.



Source: Nigerian National Petroleum Corporation, National Electric Power Authority and Nigerian Coal Corporation

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* See Richard, S. (1986). Energy in Nigeria published by middle East Economic Digest Limited, London. P. 140.

APPENDIX IV:

PERCENTAGE INCREASE/DECLINE IN PETROLEUM CONSUMPTION 1984.

PRODUCT	1984 CONSUMPTION (LITRES)	INCREASE/ DECLINE %
Premium Motor Spirit	4,900,000,000.00	-5.4
Gas Oil	1,800,000,000.00	-14.4
Household Kerosene	1,390,000,000.00	2.1
Diesel Oil	695,000,000.00	-25.4
Aviation Kerosene	507,500,000.00	-20.8
Low-pour Fuel Oil	606,500,000.00	-28.2
High-pour Fuel Oil	273,000,000.00	-23.7
Lubricating Oils	258,000,000.00	-47.8
Bitumen-Asphalt	99,615.00	-37.0
Liquefied Petroleum Gas	60,630.00	25.5

Source: Nigerian Petroleum News, December, 1985.*

*See Richard S. (1986) Energy in Nigeria, Published by Middle East Economic Digest Ltd.London Pg. 50 for usefull points and futher discussion

APPENDIX V

CONSUMPTION OF PETROLEUM PRODUCTS (METRIC TONNES)

TYPE	1982	1983	1984	PERCENTAGE CHANGE BETWEEN	
	1	2	3	1 & 2	2 & 3
Motor Spirit	4,300,647.0	4,244,798.0	3,849,059.0	-1.3	-9.3
Kerosene	1,551,484.0	1,811,914.0	1,613,799.0	16.8	-10.9
Gas Oil	2,604,160.0	3,035,824.0	2,237,467.0	16.6	-26.3
Fuel Oil	1,232,826.0	1,187,663.0	805,876.0	-3.7	-32.1
Others	549,629.0	458,375.0	562,193.0	-16.6	22.6
TOTAL:-	10,238,746.0	10,738,574.0	9,068,394.0	4.9	-15.6

1 Revised based on the new conversional factor.

2 CBN Estimates based on provisional figures for nine months.

Source: Nigerian National Petroleum Corporation.

APPENDIX VI

IMPORTS OF CONVENTIONAL PETROLEUM PRODUCTS, JANUARY-DECEMBER, 1984

PRODUCTS	APAPA	ATLAS COVE	P/HARCOURT	TOTAL
Petrol	311,392,015	1,125,711,300	396,019,513	1,833,122,828
Household Kerosene	121,823,159	374,200,631	2,492,089	520,945,112
Diesel Oil	8,173,664	16,868,268		25,041,932
5-Star Petrol		32,082,295	132,340,572	164,422,867
Base Oil	103,162,479			103,162,479
TOTAL:-	5,545,517,481	1,548,862,494	553,280,976	2,646,695,218

All figures are in Metric Tonnes.
Source: Offshore Processing: P.P.M.D. NNPC, Lagos, 1984.

APPENDIX VII

VOLUME OF PETROLEUM PRODUCTS CONSUMED IN NIGERIA 1988-1992

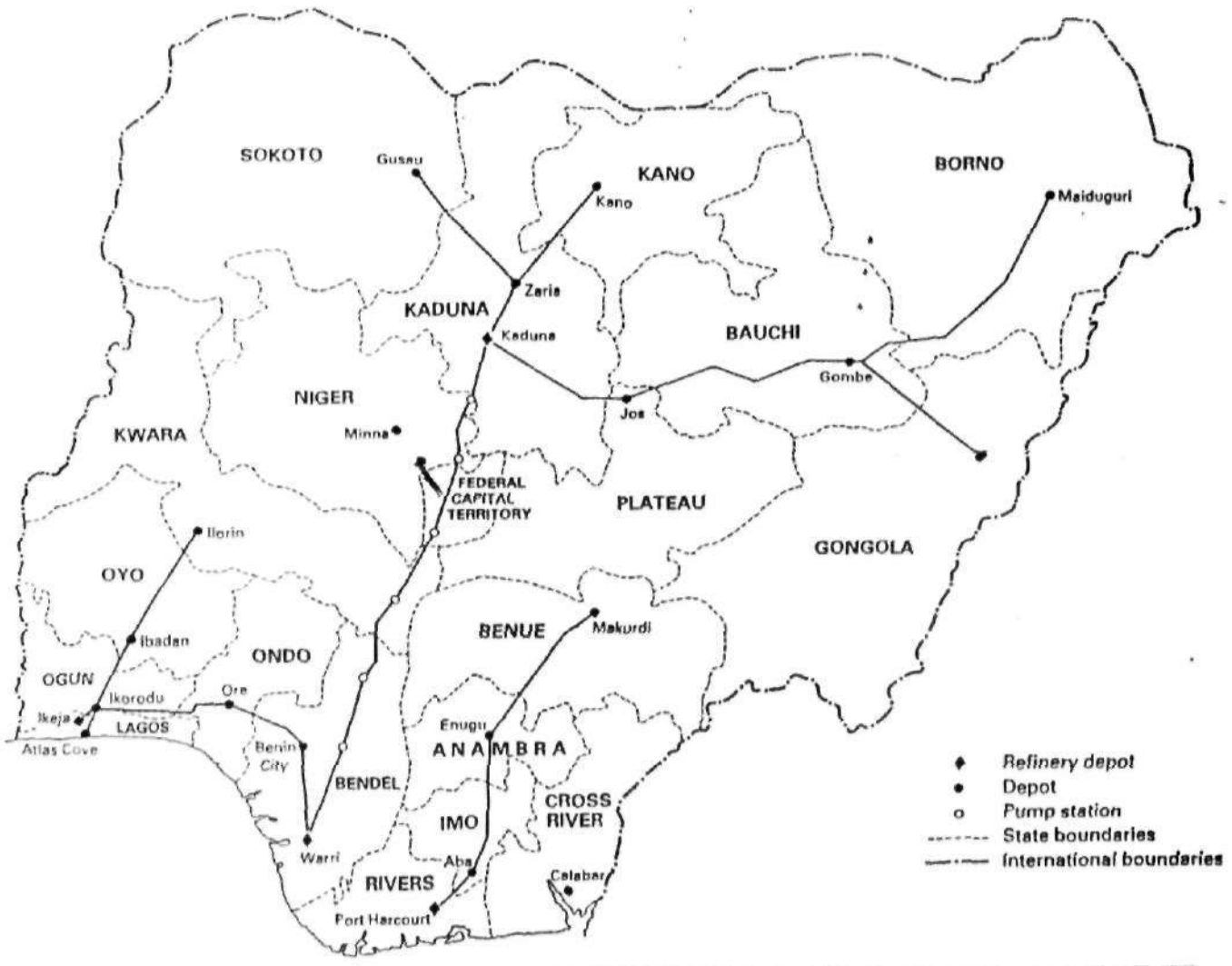
PRODUCT	1988	1989	1990	1991	1992
Liquefied Petroleum Gas	70,125.0	64,062.0	59,264.0	55,661.0	48,384.0
Premium Motor Spirit	3,103,079.0	3,302,808.0	,294,709.0	3,380,049.0	3,639,917.0
Dual Purpose Kerosene	1,554,391.0	1,546,848.0	,277,158.0	1,311,893.0	1,237,970.0
Automotive Gas Oil	1,573,966.0	1,495,739.0	,633,613.0	1,786,919.0	2,331,018.0
Low Pour Fuel Oil	867,235.0	808,725.0	858,646.0	773,803.0	773,198.0
High Pour Fuel Oil	495,350.0	139,569.0	37,669.0	34,134.0	25,110.0
Lubricating Oil	179,499.0	157,336.0	155,939.0	276,167.0	178,289.0
Bitumen/Asphalt	144,164.0	100,825.0	91,598.0	85,685.0	68,881.0
Others	66,049.0	81,050.0	292,025.0	403,790.0	2,198,718.0
TOTAL:-	8,053,858.0	7,696,962.0	,700,621.0	8,108,101.0	10,501,485.0

All figures are in tonnes
1992 figures are estimates.
Other products include Wax, Petroleum Jelly, Grease, Base Oil, etc.

Source: Central Bank of Nigeria Annual Report 1992.

FIG. 3

NIGERIAN NATIONAL PETROLEUM CORPORATION:
REFINERIES PRODUCTS PIPELINE NETWORK AND PRODUCT DEPOTS



Source: NNPC, Public Sector Information Pamphlet, 1978