

**EMERGING ISSUES IN
NATURAL GAS UTILISATION AND DEVELOPMENT
IN NIGERIA**

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**Presented at the Offshore West Africa '99 Conference and Exhibition
March 23-25, 1999 Abidjan, Cote d'Ivoire.**

1.0 INTRODUCTION

With the 10th largest gas reserves in the world, the largest known resource in Nigeria is Natural Gas. The country's reserve estimates of 110 trillion standard cubic feet of gas do not take account of the reserves in the deep water offshore basin which has already recorded a few world class oil discoveries in its early period of exploration. Indeed, gas is largely produced in Nigeria in association with oil.¹

Paradoxically, the country is not regarded as a major gas producing nation in view of the fact that up to 75% of its daily production is being flared – the latest figures estimates the flaring levels as somewhere between 180,000 and 257,000 barrels equivalent of crude oil per day.

At an annual carbon emission of over 35 million metric tonnes, this a world record contribution to the depletion of the ozone layer and continues to generate an outcry both locally and in foreign environmental circles. Nigeria has been under sustained pressure from foreign environmental lobby groups over the years to respect its various treaty commitments to reduce these phenomenal levels of emission of environmental hazardous substances. More recently, it entered into The Kyoto Protocol which has placed more responsibilities on it to reduce the flaring levels and also provides for Certified Emission Credits as a carrot to encourage gas utilisation.²

Also, continued environmental degradation from flash gas fires, acid rain and oil spills has engendered a growing awareness in the host communities of the Niger Delta region of environmental issues and rights. Inevitably, Nigeria is now witness to Green peace–scale sit-ins, disruptions and sabotage of oil and gas installations by restive youths. If the situation persists, mass tort actions will almost certainly follow.

Nigeria's competitive advantage as a major gas resource owning nation was lost to other gas producing nations because the relative long distance of the country to the main gas markets implied a high transportation cost for its gas. Also, there were several other institutional bottlenecks affecting the investment flows required to accelerate the development of the sector. These include: the absence of a formal gas policy to address the interests of all stakeholders in the sector, a regulated gas price for domestic sales, inadequate infrastructure for transmission of gas locally, a limited domestic market and a tax regime that was more designed for crude oil exploration and development.

¹ Reserve estimates are limited to data gathered from exploration for oil - no specific exploration for gas has yet commenced in the country. Hence the country is regarded more as a gas province with some oil in it.

² This is the Clean Development Mechanism provided for in Article 12 of the protocol.

2.0 BOTTLENECKS

2.1 Gas Policy

One of the factors responsible for the phenomenal flaring of associated gas in Nigeria is the absence of a formal and coherent energy policy which would have articulated the roles of all players in the gas chain. At the very least, a gas policy will address the clamour by producers for appropriate fiscal treatment and pricing of natural gas sales in the domestic market and introduce the institutional reforms and regulatory changes necessary to attract investment into the sector.

The practice in the past few years has been for senior government officials to make periodic statements on certain aspects of gas utilisation as may be considered topical enough to deserve a benevolent change of policy direction by government. The main problem with this practice as far as investors were concerned was these statements often had no force of law even though they were often respected, albeit grudgingly in instances, by the relevant government departments whose duty it was to interpret and apply them.

There was therefore a problem of stability and sanctity of arrangements. However, as will be later seen in this paper, a rash of legislation has been enacted recently by the new administration in Nigeria in an attempt to redress the policy shortcomings in the gas sector. The impetus for the recent policy shifts has come largely from the efforts of the Vision 2010 Committee, a think-tank of industry captains, professionals and entrepreneurs established by Government to work with civil servants to formulate the policy direction of the country up till year 2010. In addition to a recommendation that a comprehensive gas policy be introduced along with a review of the fiscal regime for gas projects, the committee also advised Government to focus on regulatory changes with the ultimate aim of privatisation across the entire spectrum of the economy. The committee also recommended the continued pursuit of the West African Gas Pipeline project and the promotion of power projects as strategies for accelerating gas utilisation.

2.2 Gas Pricing

Energy prices, including the price of natural gas sold for use as fuel and feedstock in the domestic market, are controlled. Government approved price is N5.24 (five naira, twenty-four kobo) per million standard cubic feet of gas or 37 cents of crude oil equivalent - this is applied in the industry as 60% of fuel oil. Gas producers frequently contend that the current price levels constitute an effective subsidy to consumers and are insufficient to justify their investment in gas development and production nor maintain operating equipment.

Arguably the issue of appropriate gas pricing constitutes the major hinderance to the development of the gas sector. This issue is particularly relevant in light of the fact that the main driver for domestic gas sales is the power sector which utilises over 70% of the gas produced in Nigeria and the gas price will undoubtedly be the main factor regarding the proposal by government to deregulate the sector. Clearly, the current gas prices and electricity tariffs are unlikely to attract the levels of investment necessary for gas utilisation.

The dysfunctionalities of the gas price and energy tariffs is best illustrated in the sensitive relationship between the Nigerian Gas Company (**NGC**), the subsidiary of the Nigerian National Petroleum Corporation (**NNPC**) responsible for the transmission of gas throughout the country, and **NEPA**, Nigeria's power utility. NEPA itself is burdened by a regulated tariff structure which essentially has hampered its ability to invest in the expansion of its generating and distribution capacity. This constraint in NEPA's revenue generating capability has become a source of constant attrition in its relationship with the NGC as it is frequently unable settle NGC's bills for gas sales.¹

2.3 Infrastructure

The existing infrastructure comprises two main pipelines owned by the NGC. The first pipeline, the Alakiri-Obigbo-Ikot Abasi Pipeline is also known as **The Eastern network** being located in the Eastern part of the country. The main gas supply sources are Shell Petroleum Development Company of Nigeria's fields at Egwa, Batan and Odidi and recently, Chevron's Escravos fields. Several spur lines run off the pipeline for the distribution of gas by NGC to some thermal stations owned by NEPA and by Shell Nigeria Gas Limited (SNG) to industries in Aba, Owerri, and SPDC's residential estates at Port-Harcourt and Warri. The second pipeline, more widely known as **The Western Network or The Escravos-Lagos Pipeline**, has spawned a network of distribution pipelines, again by the NGC to NEPA's thermal station at Egbin near Lagos² and by SNG to several industries in Lagos.

As more LNG and gas transmission projects are being developed in North Africa, Asia and Europe there appears to be a growing awareness in official circles that the country's long-term interest lies in the development of a local and regional market for gas. This of course implies the necessity of the development of transmission infrastructure which currently is limited in Nigeria.³

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¹ NGC charges NEPA N3.00 per 1000 scf - well below the industry rates. NEPA bills its customers N2.05 per kilowatt hour and a weighted production rate of N8.00 per kilowatt hour.

² The NGC also supplies gas to WAPCO PLC's cement plant at Ewekoro and Shagamu.

³ There are only 960 kilometres of gas pipelines in the country. This state of affairs is largely due to the low industrial capacity utilisation and the dis-economies brought by the current gas price levels to infrastructural development projects.

Observers of government policy in Nigeria may however be aware that the new approach of government is to substantially reduce funding commitments to the gas sector. This is in contrast to its policy throughout the 90s of being a co-sponsor of virtually all the gas projects commissioned in the country. In effect, private sector capital will now have to be mobilised to take the sector into the gas age. However, the desideratum of the expansion of the transmission network by the private sector is inextricably linked to the issues of gas policy and price review earlier discussed. The acid test will almost certainly be to some extent, the proposed West African Gas Pipeline Project and definitely, the expected take-off of Independent Power Producer Plant projects.¹

3.0 OPTIMAL UTILISATION STRATEGIES

Understandably, a combination of pricing problems, lack of transmission infrastructure and an absent energy policy are the main factors responsible for the phenomenal levels of gas flaring. The main challenge in the gas sector in Nigeria over the years has been and remains how efficient strategies will be adopted to achieve flaring elimination and effective monetisation of the reserves.

3.1 Anti-flaring legislation

The initial strategy was through anti-flaring legislation. However, this strategy was introduced in the 70s when the gas industry worldwide was relatively at its infancy and, being the era of the oil price boom, gasfield development and utilisation was understandably not a priority for oil exploration and production companies.

The first statute was the **Petroleum Act of 1969**. This statute required oil companies to cease gas flaring after 1st January 1984 except through the consent of the Minister. Oil companies were required to submit programmes to the NNPC for utilising associated gas produced in their fields within 5 years of putting the fields into production.

There was a general consensus in the industry about the failure of this statute as far as gas flaring was concerned, hence the **Associated Gas Re-injection Act** was promulgated in 1979. This statute was enacted to compel oil companies to formulate integrated plans for gas re-injection and utilisation of all associated gas produced.

¹ In two landmark legislations, the new Government in Nigeria enacted **The Electricity (Amendment) Decree 1998** and **The National Electric Power Authority (Amendment) Decree 1998**, the monopoly of NEPA was effectively broken and a new era of IPP projects ushered into the power sector.

This legislation was further amended in 1984 upon the enactment of the **Associated Gas Re-injection (Amendment) Decree** and the **Associated Gas Re-injection (continued flaring of gas) Regulations Cap 26 Laws of the Federation of Nigeria 1990**. The amendment introduced conditions upon which the consent of the minister will be granted under the principal statute for continued flaring by an operator.¹

Notwithstanding the threatened sanction of fines or of revocation of oil mining leases, gas flaring continued throughout the 80s and 90s albeit at slightly lower levels than was experienced in the 70s. The E & P companies have simply preferred to opt for the more accommodating sanction of flaring penalty².

The efficacy of flaring penalty as a strategy for gas utilisation has been called to question by industry analysts – some consider that the Nigerian government is effectively penalising itself since it will indirectly contribute 55-60% of any penalty paid. The key issue however is that anti-flaring legislation has proved successful as a strategy to stimulate the development of integrated gas plans in the E & P companies for ultimate diversification into the gas business.

3.2 Promotion of Gas Utilisation Projects

The extremely low sulphur levels of Nigeria's gas makes it more technically and environmentally attractive as a premium fuel. The E & P companies in conjunction with the NNPC are now pursuing a range of cutting edge technologies with the aim of increased gas monetisation and flaring elimination. Natural Gas liquids and Condensates projects are considered particularly attractive in view of the burgeoning international markets for these products and their exemption from the country's OPEC oil production quotas. We are even more likely to see a wave of Gas-to-liquids projects in the next few years in view of the superior quality of GTLS as a fuel and its attractive economics in relation to other types of Gas projects. Also, as E & P activity increases offshore Nigeria, we may see a few floating LNG projects.

¹ Section 3 of the 1979 legislation provides that flaring may be allowed:

- (a) If more than 75% of the associated gas produced is utilised or re-injected
- (b) If the gas produced contains more than 15% of impurities as would affect their use for industrial purposes
- (c) If the ratio of gas production is minimal in relation to the distance to the utilisation point or the nearest transmission pipeline
- (d) If an existing utilisation programme is temporarily disrupted for technical reasons
- (e) Upon the minister's discretion

² This was 3 kobo per 1000 scf when it was introduced and was very soon after reduced to insignificance by currency devaluation in the 80s. It was then subsequently increased in 1992 to 50 kobo per 1000 scf and promptly suffered further devaluation. Only recently, in 1998 was it increased to N10 per 1000 scf.

In apparent recognition of the importance of increased gas utilisation as a least-cost strategy for the diversification of Nigeria's foreign earnings in an era of depressed crude oil prices, the 1999 budget specifically provided new incentives for NGL and GTL projects.¹ More importantly, a ground-breaking provision contained in the budget speech provided that all previous incentives for the utilisation of associated gas would now apply to non-associated gas projects. This is the first time that non-associated gas has received a fiscal treatment in Nigeria and represents a signal particularly to those promoters of methanol, ammonia and urea projects who have been frustrated over the years by the E & P companies in negotiations for gas sales². Presumably, they may now take over and operate relinquished non-associated gas fields and operate integrated gas utilisation projects along the lines perfected in Saudi Arabia and other developed gas provinces.

Beyond the export projects however, opportunities for conversion of gas-to-electricity will perhaps provide the best opportunity to develop a viable domestic market in view of the growing linkages between the gas and power sectors in Nigeria. Much fillip has been provided in this direction with the enactment of two legislations³ in 1998 allowing for private sector entry into the power sector and the announced privatisation of NEPA.

NEPA had in the past couple of years been engaged in discussions for the development of an Independent Power Producer Project with Mobil Producing Nigeria Unlimited.⁴ NEPA also has plans for additional thermal power plants. This will involve the laying of 15,000 kilometres of transmission lines. Clearly capital will be an issue and we can therefore expect to see a few joint ventures on either build-operate-and transfer basis and of course some other IPPs sponsored by other E & P companies.

Another trend in the sector is the establishment of gas distribution subsidiaries by the major E & P companies to focus on gas supply to local industry. Shell seems to have made a headstart with its Shell Nigeria Gas Limited; however, Mobil and Chevron are likely to implement their programmes for the consumer end of the gas chain before long.

¹ (i) capital investment in NGL facilities will be treated as chargeable tax allowance under PPT and may be recovered against oil income,

(ii) current petroleum investment allowance on all capital investment for NGL plant and facilities shall be increased to 35% from 15%,

(iii) royalty on gas transferred from NGL facilities to GTL facilities are to be zero rated for tax purposes.

2 Presumably, investors in the West African Gas Pipeline project may opt to pursue a non associated gas field development project if its economics will present it with the advantage of a better gas price than an eventually deregulated gas price will provide.

3 The Electricity (Amendment) Decree No 28 1998 and The National Electric Power Authority (Amendment) Decree No 29 1998.

4 Amongst other reasons, regulatory constraints have kept this project on the drawing board for an unduly long period.

3.3 Project Finance

Funding of the oil industry by the Nigerian Government has consistently been below budgeted levels since 1993 leading to cash call arrears in Government's equity commitment to E & P joint ventures.

The concerted strategy for accelerated gas utilisation is now converging in a number of gas projects competing for NNPC's counterpart equity funding. However, funding of the gas sector and the oil industry in general is likely to present major challenges to the NNPC and its joint venture partners as from 1999 in view of the oil price crash and government's intention of divesting from the downstream end of the sector. The 1999 federal budget seems to have alluded to this problem already – public sector funding is expected to fall 30% below 1998 levels while the budget itself has been based on an average oil price estimate of N10 per barrel for the year.

The focus of the industry over the next few years must therefore be the pursuit of alternative funding sources and creative financing arrangements for the several projects under consideration. Time has perhaps come for the industry as a whole take a closer look at the production sharing and risk service contracts and sole risk arrangements which the NNPC and the E & P companies have traditionally utilised for crude oil production to see how these arrangements may be better optimised for gas development and utilisation. Some potential may also exist to tap into the several emerging market and eco funds available in the international finance market.

3.4 FISCAL INCENTIVES

The basic law governing the taxation of gas projects is **The Petroleum Profits Tax Act (PPTA)** which was enacted¹ when the gas industry was in its infancy. The focus of this statute was the taxation of crude oil projects; however, it was drafted to tax the profits accruing from both crude oil and natural gas production at 67.75% within the first five years of production and subsequently, at 85% after the amortisation of pre-production capitalised expenditure.

Consequently, no substantial gas project was promoted by the E & P companies until government began to demonstrate a better understanding of the true nature of the international gas business in the 80s. This new focus resulted in anti-flaring legislation and the execution initially in 1986, and subsequently, in 1991 of a Memorandum of Understanding between the Federal Government and the E & P companies for an improved fiscal regime for oil production. A series of negotiations then followed for a gas-specific fiscal regime in order to cure the deficiencies of the **PPTA**.

These negotiations led to the introduction throughout the 90s of a progressive set of fiscal incentives to investors throughout the gas chain. The first set of incentives were provided in 1992 through the **Associated Framework Agreement (AGFA)** which was geared

¹ In 1959

more towards upstream operators. It provided better PPT rates on profits accruing from gas production¹ and improved CAPEX² offsets, investment tax credits³, royalties⁴ and tax holidays⁵. Regarding OPEX, all expenses identifiable exclusively with gas may be recouped from gas income at CITA rate while inseparable expenses incurred during oil exploration will be recoverable against oil income at the PPTA rate.

These incentives were extended in the **1997 budget** to gas consumers. The key elements of the 1997 package were:

- i. Import duty exemption was provided on plant, materials, equipment and spare parts imported within the first two years of the commission of the plant. Also total VAT exemption was granted on these items.
- ii. The capital allowances were improved and may be claimed after the tax holiday at 60% initial allowance for plant and machinery and 20% per annum thereafter while 1% may be retained in the books;
- iii. Dividends paid on those investments made in foreign currency may be received free of tax during the period of the tax holiday;
- iv. Export proceeds may be kept in offshore escrow accounts;
- v. 100% equity ownership was allowed in the downstream end of the gas sector.

The programme of improved fiscal packages for the gas sector was continued in **the 1998 budget** which provided more incentives for gas consumers – industrial plants, refineries, fertiliser plants etc. Integrated oil and gas operations were to be taxed separately under PPTA and CITA respectively. However, CAPEX incurred under joint oil and gas operations will be chargeable against income under PPTA rates. If the CAPEX was incurred before production commenced, it may be deducted before tax as an allowance at PPTA rates. Further incentives provided were:

- i. Gas transferred to any downstream project or location was exempt from royalty and PPT;
- ii. Dividends paid on all categories of investments were exempt from withholding tax
- iii. Interest on project loans may be claimed as an allowance if the prior approval of the Federal Ministry of Finance is sought and obtained.

These incentives were strengthened upon the enactment of **The Finance (Miscellaneous Taxation Provisions) Decrees Nos. 18 and 19 in October 1998**. These statutes have consolidated the various incentive packages of the 1990s and have accordingly amended the **CITA, PPTA, VAT Decree** and the **Nigerian Investment Promotion**

¹ Reduced from 85.5% to Companies Income Tax Act (CITA) rates of 40% - now 30%.

² New rates of capital allowances were introduced for all phases of the gas chain:
-20% per annum in the first four years, 19% in the fifth year and 1% retention in the books.
-the rates may be offset against crude oil income at the PPTA rates

³ 5%

⁴ At 7% for onshore, 5% for offshore production

⁵ Companies involved in gas transmission and distribution were to be exempt from tax for the first five years of commencement of operations.

Commission Decree to now provide all stakeholders in the gas chain with a basic statutory framework for gas utilisation in Nigeria. Furthermore investors are now assured of a reasonable level of stability and assurance of the sanctity of their investments in the sector.

Lastly, as earlier discussed, **the 1999 budget** incentives were focused towards NGL, GTL and non-associated gas projects.

4. CONCLUSION

The progressive incentives of the 90s and the project-specific fiscal packages have spawned off several world class gas projects in Nigeria today – notably the Nigerian Liquefied Natural Gas Project, the Escravos Gas Projects, The Oso Condensate Projects. As more major projects are in the pipeline one can reasonably conjecture that the gas age has dawned in Nigeria.

There is however a limit to the number of world class gas projects the country can develop. The public and private sector must therefore continue to work to achieve an orderly development of a viable domestic market in order to monetise Nigeria's abundant resources in the next millenium.

Lastly, it appears that the resolution of the issues of gas policy, gas pricing, electricity tariffs and privatisation will drive the requisite levels of foreign direct investment into the sector.

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