

"Nigeria: Antitrust Imperatives for an Energy Sector in Transition"
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I. INTRODUCTION

Reforms of energy markets involve deregulation. This requires the replacement of state regulation and service provision with less burdensome and more independent regulatory and institutional structures that provide investors with the necessary assurance of stability of the industry.

In the context of the energy sector, deregulation is expected to result in the structural efficiency of the energy chain, the production of least cost power riding on the back of reasonably priced gas supplies and ultimately, lower energy prices for consumers. In view of the current structure of the gas to electricity value chain and the continuing absence of regulatory measures to safeguard the public interest these objectives are unlikely to be attained in Nigeria in a long time. If not accompanied by regulations that will focus on industry structure, competitive access to both market and to product and economic regulation deregulation can in fact lead to the substitution of public monopolies with private monopolies¹.

Proposals for reform: Liberalization

The current policy of the Government is to reduce public sector expenditure on energy infrastructure and to seek alternatives to government involvement in the sector. The expectation is that by replacing public sector involvement in all aspects of energy infrastructure and service provision, private sector investment will engineer rapid economic recovery through more efficient energy distribution and low cost energy supply to consumers.

Sector reforms have commenced in Nigeria with the announcement of a sector restructuring and privatization program for the natural gas and electric power sectors, amongst others, by the privatization agency, the Bureau for Public Enterprises [BPE]. It is hoped that the reforms will be accompanied by a process whereby genuine competition is introduced into the energy sector market.

Implications of liberalization - Policy issues confronting Government

Antitrust effects are a common result of energy sector liberalization and they involve difficult policy decisions about trade-offs between its various objectives as it attempts to deal with the transition of the state from a command structure to a market economy. Given the strategic position of the energy sector, potentially grave macroeconomic effects could result from these potential antitrust effects if unattended to. Antitrust policy must therefore be a central issue in the sector reform process. The main policy issue arising is

¹ Martha Morgenkamp: "Implications of Privatization and liberalization of network bound energy systems". Journal of Energy Law Vol. 13 No. 1, 1997.

structural: the extent to which government intends to maintain a monopoly structure, natural or otherwise, in the sub - sectors under review and the degree to which it wishes to rely upon a competitive structure to provide economic discipline in the industry. A related issue is regulatory: the question of how the sector will be regulated in a liberalized environment.

The Nigerian energy sector is a very strategic sector with strong linkages to the macro economy. To illustrate, the petroleum sector accounts for 90% of Nigeria's foreign currency earnings while its electricity sector utilizes 85% of natural gas produced into the domestic market. With the 10th largest gas reserves in the world, the largest known resource in Nigeria is natural gas. However, up to 75% of daily production is being flared – the latest figures estimate 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 tons, this 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 to reduce these phenomenal levels of emission of environmental hazardous substances. 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 mass tort actions, disruptions and sabotage of oil and gas installations by restive youths.

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 monetization of gas reserves. The dilemma of the Government of Nigeria as it seeks to deal with its electricity crisis and the phenomenal gas flaring levels is compounded by the fact that oil production cannot occur without associated gas production.

The Government's efforts towards encouraging increased domestic gas utilization are focused on electricity projects powered by natural gas. For the oil companies, there could be no better opportunity to capture dormant revenues lost from gas flares and diversify into a new market which is synergistic with its gas production. For both government and the oil producers, this partnership presents major political capital: it is both a sound opportunity to respond to the environmental lobby and to address the age - old electricity crises in the country. The strategy of the government to this end involves the introduction of fiscal incentives for gas utilization, dismantling of the statutory monopoly held by the National Electric Power Authority [NEPA] and the approval of various project risk mitigation mechanisms for natural gas and electricity projects.

As will be seen, one of the difficult policy difficulties that will confront the Government arises from the program for the restoration of power generating capacity. This program requires the infusion of major private sector capital into the power sector to upgrade power generation capacity. Whereas an ideal policy choice would require that the contorted energy chain be straightened before private sector involvement is solicited, other imperatives seem to have won the day: power will be restored regardless or in spite of the implications.

The antitrust impacts of the proposed changes to the regulatory framework and the emergency power program in Nigeria will be reviewed in this paper in the context of the proposed liberalization and privatization of the Nigeria energy sector. The hypothesis is that the incumbent gas producers have been effectively positioned by these changes to capture the burgeoning electricity market in Nigeria.

It may however be argued that the desire for a competitive market environment is a fanciful idea, which can impede the achievement of the immediate political imperative of reducing the gas flares and delivering power to the Nigerian masses. The ultimate question is whether privatization is compatible with these immediate problems.

It is important to note that more gas off take from power production will not necessarily reduce gas flares so long as Nigeria continues to produce more crude oil. Indeed, there are concerns as to potentially more serious gas flaring levels as Nigeria proceeds to an era of oil production from its prolific deepwater fields. In addition, there remains the outstanding question as to the potential levels of electricity tariffs when the electricity market would have been fully captured by incumbent gas producers. If the market is limited to these companies, will they exploit market power by producing more expensive electricity or will Nigerians enjoy cheaper energy production? Further, are these solutions compatible with the equally important objective of ensuring a competitive market for power and natural gas supply? These are the questions.

The central argument in this paper is that the current structure of the Nigerian energy sector is a ready - made recipe for abuse of market power by the leading players in the sector due to the absence of antitrust policy and regulation in Nigeria. This scenario could worsen post - privatization and compromise the expected gains of liberalization if the necessary antitrust issues are not dealt with ex - ante. Close supervision of the energy sector as it transits to a fully private sector - led center of the economy is recommended. Lastly a framework is proposed for relevant regulatory mechanisms for sector management post reform.

As in every antitrust case, this article begins by presenting the facts: a diagnostic review of the structure of the natural gas and electricity sectors and identifies where they stand on the spectrum between competition and monopoly. A review of the proposed deregulation of these sectors and the impact that the proposed policies can have on the competitive process will follow.

II. THE GAS TO ELECTRICITY VALUE CHAIN: diagnostics and structural issues

A non – competitive industry structure is evidenced by high concentration and entry barriers. This will result in the exercise of market power. Market power is evident in a firm's ability to lessen competition in price, product supply quality and service innovation [US Department of Justice Merger guidelines], collusion on price and product supply, lack of independence in decision making amongst the operators,

predatory and exclusionary dealing arrangements, unfair methods of competition, monopolization, tying, raising of rivals' costs and other forms of anti-competitive conduct.

Direct evidence of market power abuses is however, often difficult to monitor and is rarely available. Hence, a "relevant market" analysis is often applied as an analytical tool to estimate the relative power of a firm or a group of firms in order to identify which company poses a threat to other companies in the industry or which companies are in a position to deter market entry by potential competitors.

The market structure approach infers a firm's possession of monopoly power from its possession of a dominant share of a relevant market that is protected by entry barriers **US V MICROSOFT**. It is therefore important, when appraising market power to consider the conditions of entry into the market. The key issue is whether, and to what extent, barriers to entry exist. Entry barriers are those factors that deter the entry of new firms or those that prevent new rivals from responding timeously to an increase in price above the competitive level. If there are no barriers to entry, there is no monopoly power.

In this section, an analysis of the industry or relevant markets for natural gas transportation and sale and that for power generation and transmission in Nigeria will be undertaken to determine whether potential substitutes [product, prices, and competitors] exist as these could constrain a firm's ability to raise prices above the competitive level.

A. Natural Gas Sector

Production – Natural gas is produced for domestic use in Nigeria by multinational oil companies operating crude oil development operations in joint venture with the Nigerian National Petroleum Corporation [NNPC] the state – owned oil company¹. Some of these companies, including the largest producer, Shell Petroleum Developing Company [SPDC] which accounts for up to 50% of Nigeria's gas production, ship gas mainly to **NEPA**, the state – owned electricity company, and to other state - owned and private sector industrial plants under long term take - or - pay contracts.

Transmission and distribution – Natural gas utilized in the domestic market is transported to customers through an 11,000-kilometer network of transmission pipelines owned by the **Nigerian Gas Company [NGC]**, a 100% owned subsidiary of the NNPC. This infrastructure is virtually a natural monopoly² in view of the front – end capital [or "sunk

¹ NNPC holds a participating interest of approximately 60% in joint venture upstream operations operated by Shell, ExxonMobil, ChevronTexaco Agip, TotalFinaElf and Pan Ocean Oil Corporation. The Corporation also has several other acreages operated by several other international oil companies under Production Sharing Contracts.

² The technology and economic features of the utility sector are such that a single firm can satisfy the overall demand for its output in a geographical area at a lower total cost than any combination of firms. Because natural monopolies typically have a high ratio of fixed costs to total costs and low operating costs, their costs of production therefore decrease as output increases. They therefore have high economies of

costs”] investment which cannot be duplicated in the absence of economic justifications for a competing transmission system. The main transmission pipeline in Nigeria, the Escravos – Lagos Pipeline System (ELPS), was developed by the NNPC as part of an integrated gas infrastructure plan. It is the trunk of a pipeline network linking a web of associated gas fields in the Niger Delta for the transmission of natural gas to power plants and industries along its route. The pipeline has been extended since it was commissioned in 1988 and now virtually spans the entire breadth of southern Nigeria. This places the Nigerian Gas Company, the gas transmission subsidiary of the NNPC in a dominant position in respect of gas transmission. Discussions are on – going at several levels about the extension of the transmission network from Oben on to Abuja and Kaduna. Other major projects being actively considered by Government include the West African Gas Pipeline and the Nigeria – Algeria pipeline project.

The strategy of the NGC for extending the pipeline transmission and distribution network has been to grant pipeline franchises for gas distribution under a BOT basis to Shell Nigeria Gas (SNG) and Gaslink Nigeria Limited, subsidiaries respectively of Shell Petroleum Development Company of Nigeria (SPDC), and Unipetrol, a petroleum marketing company³. In its role as a merchant, the NGC purchases gas from oil producing companies for resale to industrial customers or to NEPA, its largest customer⁴.

Network access - Presumably on account of the limited development of its domestic gas market, the regulation of access to gas infrastructure in Nigeria is relatively unsophisticated in comparison to more developed gas provinces where extensive access rules exist. The only regulation on network access simply provides that any person may apply to the Minister of Petroleum Resources for the right to use an oil pipeline constructed, maintained and operated by another person under a license granted subject to this act⁵. In practice however, gas producers interested in shipping gas to purchasers downstream often enter into a negotiations with NGC for access into the pipeline.

Pricing – Wellhead prices are regulated by virtue of the powers given to the Minister of Petroleum Resources to regulate the price of natural gas produced both at the flare and

scale particularly at the transmission and distribution segments of the energy chain. Hence, it is more efficient for one firm, rather than two, to supply a market.

³ The concession to Gaslink covers the greater Lagos area while SNG will build operate and transfer more transmission and distribution infrastructure in phases over the next 10 (Ten) years for gas supply to industrial customers located in the outer Lagos area and in Abia State.

⁴ Gas is the fuel of choice for power generation in Nigeria; hence, the power sector is responsible for 85% of gas utilization in Nigeria today. NEPA accounts for more than 75% of the natural gas supplied by NGC to its customers.

⁵ Section 18 Oil Pipelines Act. Oil is defined in the Act to include gas.

otherwise⁶. In its role as a merchant, NGC buys gas from gas producers at a price of N12.00 [approximately 12 cents] per standard cubic feet of gas. Gas is sold to industries at a 40% discount on fuel oil. With respect to NEPA, Government has in the exercise of its regulatory powers continued to regulate the price of natural gas sold for power generation at N138.00 [approximately \$1.38]. These tariffs are neither fully reflective of gas production or transmission cost. However, the full impact on natural gas prices of the deregulation of LPFO, the main competing fuel to gas remains to be seen.

Fiscal terms - Gas producers enjoy a major tax/fiscal advantage compared with companies involved in the transmission and distribution segment of the gas chain. They may offset 85% of capital costs invested in gas development [gathering, treatment, production and transmission of gas to utilization points] against crude oil income. Chargeable income due after other deductions and offsets is then subject to a 30% tax rate as against the statutory 85% tax rate chargeable for oil production. A similarly attractive suite of incentives are available to companies involved in downstream gas utilization [pipelines, power plants, industrial plants, refineries and fertilizer plants]. These include a minimum tax holiday of 3 years, accelerated capital allowances after the tax holiday, exemptions from VAT and import duties on plant and machinery imported for their projects and a company tax rate of 30%.

In effect, the capital costs for developing downstream gas project sponsored by a gas producer can be offset against its tax liabilities arising from crude oil production. A firm competing or intending to compete in the downstream market with an affiliate of a gas producer will however be unable to pass its capital costs up to its parent company if that parent company is not engaged in oil and gas production in Nigeria. As will be seen, this fiscal disadvantage could have significant implications for market behavior downstream.

B. Electricity

Structure - The Nigerian electricity sector is controlled by a vertically integrated state - owned electricity monopoly, National Electric Power Authority [NEPA]. The corporation owns and operates the main power generating, transmission and distribution infrastructure in Nigeria. NEPA's assets comprising eight power plants⁷, approximately 11,000 kilometers of 330/132KV transmission lines, several subs - stations and distribution lines are old, overstretched and often sabotaged, resulting in frequent system collapse and technical losses. Not surprisingly, the utility is often unable to meet Nigeria's capacity demands.

The Emergency Power Program- The government introduced the Emergency Power Program [EPP] in year 2001 as a short – term measure for the improvement of power

⁶ Low Pour Fuel Oil (LPFO) is sold locally at prices in parity with import prices, thereby reflecting the costs of its production, transportation and sale. With the removal of subsidies on LPFO prices, customers are expected to by government opt for gas which is a cheaper and more energy efficient fuel.

⁷ 3 hydro [Kanji, Shiroro, Jebba] and 5 gas fired Stations [Egbin, Afam, Sapele, Ijora, Ughelli]

generation. This will involve the production and sale of power by private sector power generating companies to NEPA.

The first EPP contract was signed with **Enron** [later assigned to **AES Corporation**] for the production and supply of three 90mw barge – mounted power plants for emergency power supply to the Lagos area. Recently, NEPA awarded a \$540 million ROT [Rehabilitate – Operate – Transfer]⁸ contract to Shell Petroleum Development Company of Nigeria [**SPDC**] for the rehabilitation of units 1 – 4 of the gas - fired Afam power plant and a LOT [Lease – Operate – Transfer] of unit 5 of the same plant⁹. The plant will generate 930MW or 20% of Nigeria's current power generation capacity. Other transactions include a 20MW and 30MW diesel plants located at Abuja and an IPP sponsored by the **AGIP/NNPC** joint venture for the development of a 300MW at Kwale in Delta State. Discussions are on – going in respect of other projects, notably the **ExxonMobil** Bonny 350MW IPP and a **SPDC/ABB** proposed 1000MW IPP to be located in Abuja.

Given that most of these transactions have been structured by the NNPC and its joint venture partners, a question arises as to whether these transactions implicate any barriers to market entry by new entrants into the power generation segment of the energy chain, particularly new entrants without a gas producing sponsor or parent. In the context of the potential antitrust impact of the EPP program on the proposed power sector privatization and the desire for a competitive market in power generation, one of the matters that will require a careful consideration of the policy makers relates to the arrangements regarding gas sale and transmission in these projects. The issue focuses on whether new entrants into the power generation segment of the electricity sector will be offered natural gas at the same price and terms as that supplied to the EPPS sponsored by the NNPC and its International Oil Company partners. The additional issue is the impact that the long – term nature of the power purchase agreements [PPAs] for these plants will have on market entry.

Electricity tariffs - As Nigeria deregulates its energy sector, NEPA's inability to charge cost – reflective tariffs¹⁰ and the fact that most of its revenues are due from a largely government – owned clientele will constitute a major bankability issue in power project

⁸ The ROT program envisages that a "rehabilitator" will finance the rehabilitation program and operate the plant for a period of 15 years. This arrangement is likely to result in a conflict between the interest of a rehabilitator, which is to recover its investment in the program and turn a reasonable profit over the concession term, and that of the Federal Government of Nigeria, which is to ensure the privatization of NEPA.

⁹ Nigeria Country Analysis Brief <http://www.eia.doe.gov/emeu/cabs/nigeria.html>. See also: Industrial Information Energy Alerts – January 28, 2002 <http://www.Industrialinfo.com>

¹⁰ NEPA's current tariffs are N3 (approx 0.3 cents) per kilowatt hour for domestic customers and N6 (approx 0.6 cents) for industrial customers. The tariffs to domestic customers are well below wheeling costs of producing and delivering electricity to customers. In order to address the anomaly in the tariff structure and ensure that tariffs do at least cover operating costs and the full cost (including a normal, risk-adjusted rate of profit) of new investments

development. The solution proposed to government by some oil producers is for power tariffs payable by NEPA to be offset against government share of revenues from upstream oil production operated by these oil companies. This is a practical solution to an enormous problem, but there is a question as to whether a level - playing field solution will be offered to new entrants in power generation who do not produce oil¹¹.

The ultimate solution is for government to shift this risk to the power producer and the market by removing subsidies in the energy chain such that customers will pay cost-reflective tariffs. A move in this direction commenced with the increase in March 2002 of the power tariffs by 31% for domestic customers and 138% for industrial customers¹².

Market and network access - The Electricity (Amendment) Act 1998 removed the monopoly granted to NEPA over power generation, transmission and distribution. S.3 (2) of the Act empowers the Minister of Power and Steel to grant a licence for the supply of electricity to “any person other than the National Electric Power Authority” under the terms of a license issued by the Minister. However, given that distribution infrastructure are natural monopolies, a licence issued under S.3 (2) of the Act is only useful to the extent that a licensee may have access into existing electricity distribution equipment in order to supply electricity to its customer. There are however indications that NEPA is unwilling to provide access to distributed power generators into its transmission and distribution infrastructure in fear of losing its market share. In the circumstances, it would appear that NEPA’s natural monopoly on transmission and distribution equipment is favourable to companies in partnership with Government for upstream gas development for power generation whilst it constitutes an entry barrier to the electricity market against companies interested in private and small scale power generation including gas marketers and smaller gas producers.

Energy Sector Supervision

The Minister of Petroleum Resources through the Department of Petroleum Resources (DPR) regulates the Petroleum industry, an arm of the Federal Ministry of Petroleum Resources charged with the task of overseeing the activities of all participants in production, distribution and export of natural gas. The mandate of the DPR also includes the enforcement of all laws affecting the petroleum industry. However, its lack of financial and operational independence and weak institutional capacity continues to limit its ability to enforce a complex industry.

¹¹ Credit risks in power offtake by a state – owned entity can be effectively mitigated by the issue of a government guarantee to the power producer. However, the negative pledge granted by the Nigerian government in favor of the IMF in respect of its external debt restrains the government from issuing such guarantees.

¹² Tariffs for commercial customers were raised from N4.74 [approximately 47 cents] to N8.50 [approximately 85cents] while tariffs for low demand consumption of between 5kw to 15kw went up from N2.60 [26 cents approx] to N4.00 [40 cents] per kilowatt hour.

NEPA has always been supervised by the Federal Ministry of Power and Steel due to its peculiar history as an integrated monopoly established at the time when Government was at the commanding heights of the economy. Hence, no regulator comparable to the DPR exists for the Electricity sector. This is a major issue as Nigeria's electricity laws are at best rudimentary and will remain so until the draft Electricity Bill currently before the National Assembly is passed into law.

III. THE STATUS OF THE ENERGY SECTOR REFORM

Gas

In spite of the fact that the NGC is one of the state owned companies listed for privatization in the Privatization and Commercialization Act, its future role remains unclear. This is due to the strong lobby within certain quarters of government against the privatization of NNPC's subsidiaries. NGC's affiliation with NNPC has resulted in significant market power in gas purchase and marketing in a constricted gas market. A clarification of the future role of NGC in the gas market is thus essential if restructuring options are to be pursued effectively.

Power Sector

Deregulation – The power sector deregulation process has advanced far ahead of gas. The process had commenced in 1998 upon the abrogation of NEPA's statutory monopoly over the electricity sector with the enactment of the **Electricity (Amendment) Act No. 28 of 1998** and the **NEPA (Amendment) Decree No 29 of 1998**. Decree No. 28 of 1998 gives a licensee the same rights and obligations as any state government or its agencies while No. 29 of 1998 makes the position clear that any of the licenses under the Electricity Act may be granted to any person other than NEPA¹³.

As a prelude to NEPA's privatization, BPE, the privatization agency has secured government's approval of an electricity policy while a draft Electricity Bill is presently before the National Assembly for debate prior to its enactment as the governing statute for the electricity sector. BPE's vision of a new sector structure involves the reduction of the degree of vertical integration between generation, transmission and distribution and retail. This functional separation [unbundling] of NEPA into several generation and distribution companies that will acquire NEPA's assets and liabilities prior to privatisation transactions is expected to ease the possibility of competition in generation and distribution segments to the electricity sector. Only one transmission company is proposed by the BPE.

¹³ The main statute, the **Electricity Act Cap 106 Laws of the Federation 1990** contains provisions for the regulation and control of electrical installations and for the generation, supply and use of electrical energy. The statute provides that a license must be obtained for the use of any apparatus for supply of electrical energy. The Act also empowers the minister charged with responsibility for electricity to make regulations prescribing the conditions upon which licenses for the supply of electricity may be issued, their extension, suspension, revocation and the fees payable thereon.

The Electricity Sector Policy envisages the establishment of the office of an independent **Electricity Regulator** to be called the **Nigerian Electricity Regulatory Commission (NERC)**. NERC will have the power regulate the entry of all participants in the sector through a licensing regime. Its also has “Federal” jurisdiction over the technical, economic and antitrust regulation of electricity companies. Economic regulation will include tariff regulation, oversight of capacity tendering competitions, approval of capacity expansion plans and business plans of regulated companies. A company wheeling power into or from the transmission grid [Transco] will come under the NERC’s “Federal jurisdiction”. This will exclude companies producing off – grid electricity – these will be regulated by intra – state regulators. However, NERC will have appellate jurisdiction from decisions of state electricity regulators. Appeals from NERC will be to the Federal Court of Appeal.

Electricity sector competition policy - The power sector policy document proposes the emergence of an effectively regulated competitive electricity industry upon the functional separation and unbundling of NEPA. Competition is expected to occur in the generation and distribution segment while the transmission company will be retained as a monopoly entity. The power generation companies [Gencos] and the distribution companies [Discos] will compete between themselves in the wholesale and retail electricity market in the long - term when the market is expected to have developed to a stage where the cost of retail sales of electricity to households can be reflected in the tariffs. In the near – term, the existing electricity subsidies will be gradually reduced. In addition, electricity distribution companies will be granted a monopoly franchise in respect of their final customers.

Ownership restrictions – Vertical integration between companies in separate functional segments of the chain are prohibited except gencos with less than 20MW capacity. Horizontal or cross mergers may however be allowed if these will not impede competition. Off – grid distribution and sales companies will however be allowed to own their own power generation sources.

Tariffs and subsidies – The policy proposes a solution to the pricing subsidies. Until NEPA is privatized, tariffs will be gradually adjusted while subsidies will be funded out of the Federal budget [Para 4.2.4] in order that power producers actually receive cost – reflective prices for power produced. In addition, government guarantees or credit support may be provided to emergency power providers in order to support the viability of NEPA’s unbundling and privatization [Paras 4.2.4, 4.2.6, 4.2.7].

In the long term, the policy envisions a situation in which tariffs will be “*market driven reflecting actual costs of service provision by operators enabling participants in the market to recover investment over a reasonable period of time whilst at the same time seeking to be affordable to the broadest possible range of service providers*” [Para 6, P.33 National Electric Power Policy]. Furthermore, cross – subsidies between service and service categories will be generally prohibited except for a public purpose and where competition is not threatened by such subsidy. Most importantly, the tariff commits

government to a review of NEPA's tariffs to the extent that they are inconsistent with the desiderata of an efficient market.

IV. ANTITRUST ISSUES LIKELY TO ARISE FROM THE DEREGULATION OF THE NIGERIAN ENERGY SECTOR

Antitrust law

Antitrust law seeks to respond to anticompetitive conduct, prevent abuse of dominant position and introduce controls over how participants in a market can collaborate, including equity acquisitions. The ultimate goal of antitrust law in all sectors is consumer protection through a framework for competition in market related sectors of the economy and prescription of standards of business conduct. In addition to a general antitrust law, network - bound sectors like electricity, natural gas, telecomm, public transport are often subject to sector specific antitrust - regulation. Nigeria however currently has no competition policy or legislation save for scanty merger approval provisions in the current company and securities law.

Large capital investments required to deliver energy to customers are often difficult to replicate or compete against once these investments are made or "sunk" since they require a feasible baseload of customer demand to justify that level of investment. Any attempt to replicate existing energy infrastructure in any given location must therefore be justified by an effective demand [demand backed by customer ability to pay for the services to be rendered] for the new infrastructure; otherwise, the investment stands the risk of being an "economic waste". Hence, economic realities often make it "natural" to have a monopoly infrastructure service provider in an area.

The antitrust implication of a natural monopoly and other monopoly power is that it creates a significant barrier to entry by newcomers. The monopoly gains an advantage by virtue of its position over those who are outside or might be willing to enter the market. Thus potential entrants are at such disadvantage that they are discouraged from entry. It is important to note that a natural monopoly or market power in itself is not a negative issue. These become matters of antitrust concern when such power is exercised in an anti-competitive manner like raising of prices, engaging in price discrimination, horizontal market division and, predatory pricing.

A monopoly franchise or concession granted in respect of the energy infrastructure would facilitate recovery of sunk costs. The contending issue in the context of a sector in transition to a liberalized market structure is for players in the market to operate in an unhindered manner. The expectation is that this process will stimulate competition in energy supply and ultimately lead to lower prices and efficient services to customers. Hence, the third parties often clamor for access into sector infrastructure to service consumers downstream while natural monopolies often argue for exemption from competition. In reality, access often stimulates competition; however, it might delay recovery of sunk costs.

The Nigerian Energy Sector – Antitrust impacts

The structure of the Nigerian energy sector is a monopoly model from wellhead to wire. Government is involved in gas production through its upstream interests while it operates as a merchant and transporter of natural gas, infrastructure developer and as a regulator. This multiple role has created an oligopoly in the production segment, a monopoly in transmission, a duopoly in distribution and dominant power in gas purchase. Therefore market forces do not operate within the sector.

In spite of the pro-competitive justifications for natural monopolies, a vertically integrated energy sector can only create distortions in the energy chain¹⁴. As we have seen, the dominance of state owned enterprises has so far discouraged private and entry into the gas sector while current policy has skewed investment in the electricity sector towards gas producers.

Natural gas – The attraction of a liberalized gas transmission segment is that it could accelerate the development of more supply markets and the concomitant distribution infrastructure. There is therefore little justification for a nationwide gas transmission company to the exclusion of others - there is in fact a significant potential for a regional gas grid system in Nigeria starting with a concession of the northern pipeline network expansion.

Electricity - With respect to the power sector, it would appear that deregulation has raised more issues rather than resolved Nigeria's current energy crises. An analysis of the prevailing problems in the sector discloses fundamental areas of difficulty that could hinder private sector participation. The reality of the situation is that the power sector, as presently structured, favors oil and gas producers currently operating in Nigeria. Moreover, these companies possess such clout, local knowledge and infrastructure that this will place them at all times in a competitively advantageous position beyond any new entrant into the power sector.

One of the main issues is whether exclusive distribution rights should be given to infrastructure providers against the necessity, in a liberalized environment, for players in the market to interface with each other in an unhindered manner. The former will require that a natural monopoly right be granted in respect of the distribution network to allow recovery of sunk costs whilst the imperative of non - discriminatory open access rights to infrastructure will accelerate market activity faster.

Although the power policy and the draft Power Sector reform Bill envisage a competitive electricity supply market in the short and long – run, it will be interesting to see how the NNPC/gas producer IPPS fare against the “baby NEPAs” post privatization. A related litmus test will be how both types of generators fare competitively against NEPA's privatised generators and new IPPS which are not affiliated to any of the gas producers. The benchmarks in this regard will be the impact of the fiscal terms available to each of

¹⁴ According to the efficiency argument, vertically integrated entities offer superior efficiencies as they can reduce operating costs and make stable profits against price fluctuations.

these entities, the prices at which gas is supplied to them by producers, and the impact of their entry capital expenditure costs on their profitability and competitiveness.

Two possible scenarios could occur in respect of gas sales from a producer to a gas-fired power plant. The first scenario would involve a significant transfer price between the producer and the IPP if they are affiliated parties. This scenario could be facilitated by the virtual lack of capacity within government in undertaking an informed financial analysis of these types of projects and the absence of institutionalised power procurement procedures. The absence of a regulator for the electricity sector makes this even more possible. On the gas side, there are similar institutional limitations. The institutions are not sufficiently sophisticated to deal with these issues. Hence, if power project capital expenditure costs are above normal levels and gas prices are structured on a non – arms length bases, these costs will not only be passed through to the consumer ultimately in form of power tariffs; the producer can offset the capital expenses against its crude oil income. The resulting assessable profit on the gas sale is then taxed at a company tax rate of 30% compared to the usual upstream tax rate of 85%. In the final analysis, the entire project burden results in a loss to the Nigerian government and a complete win for the gas producer.

The previous scenario is the “doomsday scenario” for Nigeria. The more sensible scenario with the NNPC/Government – sponsored IPPs however, is that gas be sold at current well head prices subject to an escalator or price adjustment mechanism in the gas sales contract which will allow for a price review at a time that the market allows fully cost – reflective prices.

Another dimension to the present enquiry is that a new entrant in electricity generation with no upstream affiliate will be concerned about its ability to compete against parties that have secured gas contracts at favorable long – term prices. It will also be concerned about possibilities of cross subsidization between related parties who can recover their subsidies at either end of the energy chain: the gas producer can recover by offsetting its gas project development costs from crude oil income while it has the flexibility to pass these same costs over to the consumer through its downstream subsidiary. In effect, it can leverage on the fiscal terms to engage in such anti – competitive conduct like costs pass – through, raise rivals costs and predatory pricing.

The competitive effect of the EPP program therefore is that it has the potential to constitute a barrier to the entry of new entrants or to fair play in the market. The most immediate impact of this dysfunctionality will be the proposed privatizations of the gencos. The proposed arrangements and combined dominance of incumbent power generators controlled by gas producers are bound to worry new entrants given the obvious potential for the exercise of market power by this concentration of firms. In that event, there will be a likely impact on the transactions: they will either be aborted or proceed albeit at a substantial discount to take account of these market distortions. These entities may therefore seek a premium from Nigeria as a price for their entry. This risk premium will likely be in the form of costly long – term PPAs in order to cover initial outlays and assure early return on risk investment.

Another interesting issue is the potential impact that the development of distributed power generation [DG] facilities through micro - turbine and other new generation equipment may have on competition between gas and electricity as primary energy sources. (DG) offers potential benefits to consumers. The draft Electricity Sector Reform Bill exempts off – grid power produced by technologically efficient gas – powered fuel cells and turbines from federal regulation. Subject to grid and distribution efficiencies, the potential market for off – grid power generation and supply is large, especially in the provinces where most Nigerian live. If the demand of this market were to be met by DG, the resulting gas offtake will translate to reduced grid – supplied electricity. These facilities are more competitive than larger plants as they take less time to design and build and involve fewer sunk costs. Apart from their contribution to increased security of supply of electricity, DG use can increase natural gas use and result in the expansion of natural gas transmission and distribution facilities. DG use can also facilitate increased competition between existing large generators of electricity. It can lead to more cross – elasticity of demand for electricity as customers can freely decide whether to self generate or whether to purchase power from the grid².

DGs can also face significant discrimination in access to the grid from vertically integrated incumbent suppliers e.g. NEPA. If more efficient generators fail or are deterred from entering the market to displace less efficient generators, customers are likely to face higher electricity prices. Potential new entrants into the power generation segment may thus be unwilling to enter the market if the system is perceived as biased in favor of affiliates. It is therefore an imperative that the owner of the transmission infrastructure must therefore not discriminate in providing access or grid connections to new generators. Indeed, the ideal structure is that affiliates of generators must be required to operate independently on a bid - based, arms length basis in which other companies participate.

V. POLICY OPTIONS FOR NIGERIA

Structural Restructuring - A sustainable private sector involvement in the gas sector requires comprehensive changes in Nigeria's current legal and regulatory and institutional framework for gas utilization to address the absence of transparent, competitive markets throughout the gas chain.

A critical policy issue is the question of what the future of the DPR will be post – deregulation. Current ideas vacillate between a continued role as a common regulator of the downstream petroleum sector [gas and products] in view of the network bound characteristics of both sectors.

Another option involves a limited role as regulator focused solely on the gas sector. However, the trend worldwide is to converge regulators. The United Kingdom recently accepted the wisdom in this with the merger of electricity regulator, OFFER, with the gas

² US FTC Report: "Competition and Consumer Protection Perspectives on Electric Power Regulatory Reform". July 2000.

regulator, OFGAS to create OFGEM. This structure is more efficient as it pools regulatory resources, is more likely to reduce possibilities of regulatory capture and will ensure consistency of decisions across sectors¹⁵.

The complexity of the regulatory challenges that will arise from the deregulation and restructuring of the gas and power sectors in Nigeria combined with the fact that regulatory experience locally is very limited, and certainly unsophisticated, suggests that a combined downstream regulator for these related sectors will be more in Nigeria's best interests. The latter idea has some attraction given the potential regulatory synergies that will result from a multi – sectoral role and the yet unparallel institutional experience of the DPR as a regulator of a complex industry.

Institutional reforms

Gas Sector Regulator – Necessary arrangements must be initiated ahead of the major legal reform to the legal framework to *establish an independent and effective sector regulator* with capabilities of supervising the conduct of operating firms and the economic effects of actions taken or proposed to be taken by the firms. *The eventual role of the DPR post – deregulation must therefore be clarified as urgently as possible* in order to set the stage for the necessary institutional arrangements for sector reform.

Investors will measure the potential of regulatory risk from the key benchmarks of good regulatory design: independence, expertise and accountability. Hence, the instruments providing for the establishment of a sector regulator must be drafted with these elements in mind.

Capacity building - The lack of institutional capacity in conducting bid assessment procedures and in conducting effective negotiations for major infrastructure projects with sophisticated multinational entities is apparent throughout the Nigerian public sector. These limitations are even more apparent in the DPR. The weakness of the DPR as a regulatory institution can however be addressed by *a focused technical assistance and institutional capacity building program*. Such a program, geared towards developing expertise on infrastructure procurement and on how to react to and undertake an informed assessment of project proposals cannot be over – emphasized given the focus of the government on power generation.

Market structure options

A *clarification of the future role of NGC* is essential if restructuring options are to be pursued effectively.

¹⁵ One of the ideas under consideration is for the proposed electricity sector regulator, the **Nigerian Electricity Regulatory Commission (NERC)**, to become the Federal regulator for the natural gas sector. The NERC will have decision-making powers on the key aspects of economic regulation of the electricity sector, viz tariff regulation, approval of capacity expansion plans and regulated company business plans, oversight of capacity tendering competitions, etc.

The options regarding NGC include whether to retain government ownership with regulatory oversight reposed in an independent body; or whether to fully privatize the corporation. Both options have implications for industry restructuring.

Retention of government ownership in NGC will require a very strong regulatory institution to regulate NGC's activities. In consideration of Nigeria's lack of a history of monopoly regulation and the regulatory risk that often results from the establishment of a new regulatory institution, this model will not be as attractive to private sector investment as its alternative.

A limited role for NGC as a purely gas transmission company is advised. Structural reform must commence with the functional unbundling of NGC from gas distribution and/or marketing.

Cross – shareholding interests throughout the chain must be limited in order to minimize possibilities of transfer pricing and pass - through of costs from one segment to the other and, ultimately to the consumer. This is a significant antitrust issue that requires the attention of the government in view of its potential macro – economic impact. The policy dilemma here arises from the level of government interest in upstream oil and gas production weighed against the imperative of significantly reducing its interest in the NGC to such a threshold that will ensure that these interests do not constitute a significant threat to competition in a deregulated market.

Of equal significance in the context of the potential antitrust impact of related party transactions and cross – shareholdings is the relationship of the gas producers to their downstream subsidiaries.

Legal and Regulatory Reforms

The legal and regulatory reforms necessary to attract private sector participation in the gas industry will require that principles of commercial and technical arrangements be entrenched in the revised legal and regulatory framework for the sector.

These principles could either be recorded through necessary specific amendments to the legal framework, otherwise new frameworks could be drafted. As the current framework is unstructured and can be subject to confusing interpretations, the repeal of these instruments is recommended to the extent that they affect gas development. Rather, new sector regulations should be prepared, including design of new regulatory structures/frameworks.

Deliverables expected from the introduction of a gas - specific legal and regulatory framework would include:

- a. A new gas policy

- b. A new gas code containing grid codes, distribution codes, safety codes, access rules and other relevant sector regulations like principles for establishing infrastructure tariffs and gas pricing policies
- c. Contractual frameworks including operating licenses and draft concession terms for infrastructure providers, transmission and distribution companies, gas marketers and downstream project developers.
- d. A code of conduct for all participants regarding market behavior

Introduce Market Competition

The expected benefits that can result in a competitive market can only be achieved if the market is functioning properly. The sector regulator can ensure this through effective *antitrust and economic regulation of sector participants*. In order to protect the competitive environment that should develop in consequence of the reforms, *an open access regime* for pipelines and associated facilities should be introduced. If buyers and sellers were to be allowed to have access to one another over spare capacity in transportation facilities, including upstream facilities, more sellers of natural gas will be encouraged to enter the market.

V. Conclusion

In conclusion, a vertically integrated gas sector with government sponsored monopolies is inconsistent with a desire for private sector capital into the sector. A further inconsistency is the continued involvement of government as a co – promoter of projects to service the largest market segment for gas demand, which is currently controlled by NEPA. Although the imperative of emergency power is noted, the ramifications of these projects are dispositive and would certainly constitute a potentially more complex legal and regulatory barrier to non - affiliated entrants. *Government must therefore ensure that policies being adopted with regard to the electricity sector are consistent with its desire to accelerate investment in natural gas and related infrastructure.*

Functionally separate markets for gas sales, transmission and distribution with each function performed by separate business entities will encourage the acceleration of natural gas supplies and investment in infrastructure.

The current regulatory, procedural and institutional impediments to trade and investment in energy infrastructure must be dismantled. An ideal regulatory framework for Nigeria will separate the policy, operational and regulatory responsibilities for the sector. As a prelude to a comprehensive structural restructuring program, one of the immediate steps will be the promulgation of a sector policy which will clarify government's proposals regarding the current bottlenecks, followed by the establishment of an effective and capable regulatory institution which will be able to competently deal with the bottlenecks identified.