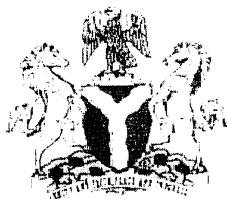
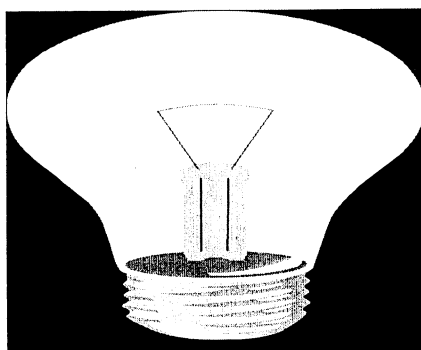


4. National Electric Power Policy (3. の法案の背景)



FEDERAL REPUBLIC OF NIGERIA



NATIONAL ELECTRIC POWER POLICY

ADOPTED BY THE

**ELECTRIC POWER SECTOR REFORM
IMPLEMENTATION COMMITTEE**

**AND APPROVED BY THE NATIONAL COUNCIL
ON PRIVATISATION**

PREFACE

The reform of the electricity sector is of extreme priority to the Government of Nigeria and the citizenry. The efforts made in the past have not yielded much result as the sector could not attract the desired investment for maintenance and expansion of generation, transmission and distribution systems. As a result of the lack of investments in new systems and maintenance of existing facilities, electricity demand from existing consumers cannot be met.

The current administration has chosen privatisation as a cardinal economic programme to address the problems of the power sector and other sectors of the national economy.

Consequently, the National Council on Privatisation (NCP) under Vice-President Atiku Abubakar has empowered a 23-member Electric Power Sector Reform Implementation Committee (EPIC) to develop recommendations to promote the policy goals of total liberalization, competition and private sector led growth of the electricity sector. The first task of EPIC included the determination of the policy direction that will form the basis of a new beginning in the development of the electricity sector.

In keeping with democratic norms and for purposes of transparency, openness and stakeholder consultation, the policy recommendations of a world-renowned electricity sector expert was discussed at a workshop. The forum provided an opportunity for the general public to express their views and articulate their interests. Thereafter, EPIC reviewed the recommendations and prepared a policy draft for the adoption of NCP and the approval of the Federal Executive Council.

The objectives of the reform contained in this policy go beyond attending to the immediate needs of the electricity sector, though this is also important. The Government of Nigeria also wishes to put in place a system that will ensure in the long term, that the problems currently facing the sector do not arise again.

A reform programme is therefore proposed that will permit the flow of private sector resources to fund power sector expansion and ensure that the performance of the sector is enhanced in such a way as to contribute effectively to the socio-economic development of Nigeria.

By our choice of privatisation, the framework for resolving the crisis that constituted a serious bottleneck in the past is being put in place. We are, through this policy document extending invitations to investors and other stakeholders in the power sector, the world over, to avail themselves of the abundant opportunities that the reform, restructuring and privatisation of Nigeria's electricity industry offer.

DR. OLUSEGUN AGAGU

**HONOURABLE MINISTER OF POWER & STEEL
OCTOBER 2000.**

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91 of 132/33KV sub-stations

Voltage Control Policy: 330KV + 5% & – 15%; 132KV + 10% & - 15%

Frequency Control Policy: 50Hz + 0.4% & – 0.4%

Distribution: 23,753km of 33KV lines
19,226km of 11KV lines
679 of 33/11 KV sub-station
20,543 of 33 / 0.415KV or 11/0.415KV sub-stations.

Frequency Control: 50Hz; 33KV +/- 10%

There are also 1790 distribution transformers and 680 injection sub-stations.

Although the installed capacity of the existing power stations is 5906MW, the maximum load ever recorded was 2,470MW. Presently most of the generating units have broken down as they have not been maintained as and when due. As at August 2000, the peak generation was 1,500MW. This is grossly below the demand, which is estimated to be about 4,500MW. The transmission lines are radial and are overloaded. The switchgears are obsolete while power transformers have not been maintained for a long time.

The distribution sub-sector is in dire need of upgrading as many of its distribution transformers are overloaded while the lines look more like "Cobwebs". Overall transmission and distribution

losses are in the range of 30 – 40 %. When these are added to the poor payment record of consumers, collections are less than 50% of power generated.

1.3. Supply And Demand Imbalances

As noted above, the present generation level of about 1,500MW is much below the estimated demand of 4,500MW. There is about 2,400MW of self-generation in the form of small diesel and petrol generating sets. The Federal and State government have vigorous policies of connecting local government headquarters and other towns and villages to the National Grid. This, coupled with the creation of new States and Local governments, have transformed additional parts of the so-called rural areas into load centres, thus adding pressure to the already overloaded electricity supply system. The estimated percentage of Nigerians having access to electricity from NEPA is only 36%.

The forecast load for the year 2001 is 4,833.7MW. In order to meet this demand, a generating capacity of about 6000MW is required. Furthermore, the estimated demand for power in 2005 and 2010 are respectively 9780MW and 20,000MW. These will require generating capacities of 12,700MW and 25,000MW by the respective years. Thus it is necessary to fully rehabilitate the existing power stations (which will provide a maximum of 5400MW generating capacity) rehabilitate some critical transmission and distribution lines and their associated substations and add new generating, transmission and distribution capacity to the grid, in the immediate and foreseeable future.

1.4 Need For Reform

The power sector is very capital intensive. It is obvious that Government, with its many responsibilities in other sectors of the economy, cannot fund its development as outlined above.

There is therefore the need to reform the sector so as to:

- (i) attract and encourage private sector participation
- (ii) attract capital to fund the sector and

- (iii) ensure a level playing ground for all investors.

The Electric Power Policy Statement therefore is to ensure that Nigeria has an Electricity Supply Industry (ESI) that can meet the needs of its citizens in the 21st Century. This will require a fundamental reform at all levels of the power industry. The Federal Government will therefore:

- (i) provide overall direction for the development of the electricity supply industry.
- (ii) ensure the general consistency of electric power policy with all other national policies, and specifically with other aspects of energy policy.
- (iii) enact promptly the necessary laws, regulations and other measures required to support the electricity policy.

It is expected that there will be an independent regulatory agency, which will also be responsible for the issuance of licences to companies operating in the Electricity Supply Industry.

CHAPTER TWO

POLICY OBJECTIVES

2.0 General

The overwhelming objective of the Electric Power Policy Statement is to ensure that Nigeria has an ESI (electricity supply industry) that can meet the needs of its citizens in the 21st Century. This will require a fundamental reform at all levels of the industry. A technically and commercially efficient ESI is critical for achieving Nigeria's growth and development goals.

The time has come for a new start that will enable the ESI:

- a) to meet all current and prospective economically justifiable demands for electricity throughout Nigeria;
- b) to modernize and expand its coverage; and
- c) to support national economic and social development, including relations with neighbouring countries.

The priority is to create efficient market structures, within clear regulatory frameworks, that encourage more competitive markets for electricity generation and sales (marketing), which, at the same time, are able to attract private investors and ensure economically sound development of the system. This will ensure that, the Nigerian electricity sector meets current and future electricity demand in an efficient and economically viable manner. The policy objectives are divided into the short-to-medium term (3-5years) and the long-term (to commence beyond 5years).

2.1 Short – To – Medium Term Objectives

The Short to Medium Term Objectives are:

- a) to ensure a system of generation, transmission, distribution and marketing that is efficient, safe, affordable and cost-effective throughout the country;
- b) to ensure that the power sector attracts private investment both from Nigeria and from Overseas.
- c) to develop a transparent and effective regulatory framework for the power sector;
- d) to develop and enhance indigenous capacity in electric power sector technology;
- e) to participate effectively in international power sector activities in order to promote electric power development in Nigeria, meet the country's international obligations and derive maximum benefit from international cooperation in these areas;
- f) to ensure that the government divests its interest in the state-owned entities and entrenches the key principles of restructuring and privatization in the electric power sector.
- g) to promote competition to meet growing demand through the full liberalization of the electricity market;
- h) to review and update electricity laws in conformity with the need to introduce private sector operation and competition into the sector.

2.2 Long – Term Objectives

The Long – Term Objectives are:

- a. to provide a new regulatory environment that is sufficiently flexible to take into account new technological developments and the international trends in the power sector;

- b. to ensure that electricity supply is made more reliable, economically efficient and equitable so as to effectively support the socio-economic development of the country;
- c. to provide universal access to electricity, although not necessarily through the grid;
- d. to encourage domestic production of electrical equipment in Nigeria, and the development of related software and services;
- e. to establish and meet aggressive targets for the rural electrification programme;
- f. to protect the integrity, and ensure the security, of the state and its citizens;
- g. to encourage Nigerian electric power sector operating companies to become global leaders in the industry;
- h. to ensure minimum adverse environmental impact;
- i. to create the enabling environment, including the provision of incentives, that will attract investors and resources to achieve the objectives earlier stated;
- j. to ensure a leadership role for Nigeria in the development of the proposed West African Power Pool.
- k. to minimize government guarantees for privately funded investment; and
- l. to ensure that subsidies are efficiently targeted.

CHAPTER THREE

POLICY AND REGULATORY INSTITUTIONS

3.0 General

Across the world, countries are unbundling their electricity supply industries. Only the network elements of electricity transmission and distribution are natural monopolies. Both electricity generation and the sales/marketing of electricity are potentially competitive activities.

Technological developments, such as the development of combined cycle gas powered generators, have greatly reduced economies of scale and increased the gains from introducing competition into generation. Similarly, the development of modern computing technologies has brought improvements in transmission and system dispatch systems which allows for the introduction of short-term and contract markets in bulk power. Such markets encourage the introduction of private management methods and private investment as well as fostering the privatization of existing assets.

The intention is that the proposed reforms should introduce these now widely applied developments to Nigeria, as laid out in this policy document.

To support these reforms, it will be necessary:

- a) to update the role of Government and the Ministry of Power and Steel; and
- b) to establish an effective regulatory framework, based on an independent regulatory agency.

3.1 **Components**

Nigeria's Power Sector shall consist of the following components:

- a) Federal Government;
- b) Ministry of Power and Steel;
- c) State Governments;
- d) Nigerian Electricity Regulatory Commission;
- e) Competing Generation Companies;
- f) A single Transmission Company;
- g) A Special Purpose Entity;
- h) On – grid Distribution Companies.
- i) Off-grid generation and distribution companies.
- j) Grid connected auto generators

3.1.1 **The Federal Government**

The Federal Government will:

- a) provide overall direction for the development of the electricity industry in Nigeria;
- b) ensure the general consistency of electric power policy with all other national policies and, specifically, with other aspects of energy policy and Federal Government policy on foreign investment and borrowing; and
- c) enact promptly the necessary laws, regulations and other measures required to support the Federal policy on electricity.

3.1.2 The Federal Ministry of Power and Steel

The Federal Ministry of Power and Steel will have the overall responsibility for formulating electric power policy. The policy issues that need to be addressed include issues such as: fuel use and the fuel mix in generation, the relative role of private and public finance; the role of competition relative to central direction, rural electrification objectives and criteria and electricity import and export targets/limits. Many of these issues are discussed in this paper.

The specific functions of the Ministry will include:

- (i) Proposing policy options and recommendations to government concerning legislation, policy on investment, etc;
- (ii) Monitoring and evaluating the implementation and performance of government policy in the industry;
- (iii) Establishing, monitoring and evaluating the performance of policies for increasing the access to electricity, particularly in rural and semi-urban areas, as set out in this Policy Paper.
- (iv) Representing Government on electricity matters pertaining to regional and international bodies and organizations; and
- (v) Liaising with the National Assembly on matters concerning the electricity industry.

3.1.3 State Governments

The State governments will carry out their responsibilities for the development of off-grid electrification and their joint responsibilities with the Federal Government on the establishment of Electricity Power Stations as set out in the 1999 Constitution.

The state role will also include regulation of off-grid non-centrally dispatched electricity operations, which are wholly limited within the state boundaries;

3.1.4 **Nigerian Electricity Regulatory Commission**

3.1.4.1 A privatised electricity industry, with competition over monopoly transmission and distribution grids, requires an effective regulatory agency that is independent both of Government and of all the companies operating in the industry. The Ministry of Power and Steel will therefore provide in a new Electricity Law for an independent regulatory body that:

- (i) has clear appointment and dismissal rules;
- (ii) has a source of independent funding; and
- (iii) faces appropriate checks and balances to ensure that regulation not only operates in a fair and transparent way but is also seen to operate in a fair and transparent way.

3.1.4.2 There will therefore be an independent regulatory agency for electricity in the form of a Regulatory Commission, which shall be called the Nigerian Electricity Regulatory Commission (NERC), based on the following regulatory arrangements:

- (i) NERC will be an independent Federal agency and electricity regulator for grid connected services;

- (ii) NERC will have decision making powers on the key aspects technical and economic regulation (viz: tariff regulation, approval of capacity expansion plans and regulated company business plans, oversight of capacity, tendering, competition, standards, quality of service, service obligation etc);
- (iii) NERC will be properly established with its powers, duties, constitution etc, laid down in a new Electricity Act;
- (iv) NERC will have the main responsibility for issuing licences to the companies operating in the Nigerian ESI. These regulatory licences will specify the rights and obligations of each business and company and will provide the basis under which NERC will monitor and enforce the economic and technical regulation of the sector. There will be separate licences for:
 - a) Transmission (including dispatch);
 - b) Generation;
 - c) Distribution; and
 - d) Retail sales.
- (v) NERC will have all the necessary regulatory functions for electricity. In particular, it will, through the licences, have the responsibility for decisions on regulatory approval for:
 - a) electricity tariffs and prices, wholesale and retail;
 - b) business and capacity expansion plans for transmission, generation and distribution;
 - c) the enforcement of competition over the transmission network, including the regulation of (a) transmission connections, (b) transmission access rights and (c) fair cost reflective use-of-system prices;

- d) enforcement of competition over electricity generation, distribution and sales;

 - e) setting and enforcing national quality standards; and

 - f) enforcing the legal rights of consumers.
- (vi) NERC will also be responsible for:
- a) ensuring that all major investments in generation capacity expansion are carried out by competitive tender; and

 - b) agreeing on the rules for supervising such competitive tenders, including acting as an appeals body in the case of accusations or complaints over the conduct of tenders.
- (vii) NERC will act as an appeals agency over regulatory decisions taken at state level.
- 3.1.4.3 Appeals procedure against any faults in the regulatory process committed by NERC shall be as defined in the new electricity law.

CHAPTER FOUR

STRUCTURE OF THE ELECTRIC POWER INDUSTRY

4.0 General

The main objective of the reform is to ensure that in the future, Nigeria will enjoy an efficient and competitive electricity industry, which provides a continuous supply of electricity at defined quality standards to consumers in all areas of Nigeria at the lowest necessary price.

This objective will be met by the introduction of competition and the appropriate regulatory framework. In order to introduce competition, functional segmentation of NEPA is crucial.

This will require:

- (i) the separation of transmission and dispatch from generation;
- (ii) the establishment of a transmission company;
- (iii) the establishment of a number of competing, privately owned generation companies from existing NEPA generating facilities;
- (iv) the opening up of generation to new market entrants; and
- (v) the establishment of a number of distribution and sales (marketing) companies which will also be privatized.

Later, competition in wholesale and retail sales (marketing) will be developed, including the opening of trade in the sales (marketing) of electricity to generators and to other new market entrants.

4.1 Licensing Of Power Sector Operators

The companies created out of NEPA, plus the new companies, will all operate under licences issued by NERC which will monitor and enforce the licence conditions.

The picture above applies to grid-connected services. In addition, the Government anticipates considerable expansion of off-grid electricity supply. This will be encouraged to develop under a wide range of industry and ownership structures.

4.2 Key Transition Arrangements

The success of the reform programme depends, critically on the specification and successful implementation, during the transition period, of clear and realistic measures, which are compatible with the short and medium term objectives of the reform. Some of these have been stated elsewhere in this policy document. This section presents, further, some key transition arrangements.

4.2.1 Duration of the Transition period

(i) Start of the Transition period:

Government is committed to ensuring adequate power supply and the viability of the short-to-medium term plans. To achieve these, some form of private power generation ownership will have to be built during the transition period. The plan for IPPs and EPPs, which will bridge the energy gap by 2002 and 2003, will have to be made now. Consequently, the transition period is to start forthwith.

(ii) End of Transition Period:

The end of the transition period will correspond to the following benchmarks:

- a) That is when management and ownership control of distribution companies (discos) whose combined sales revenues exceed 85% of the total sales of all discos are transferred to the private sector
- b) All thermal plants are either sold or are on concession to private operators.

4.2.2 Energy Trading Arrangements

The energy trading arrangements during the transition period will be in accordance with the following provisions:

- (i) An Autonomous Special Purpose Entity (SPE) created by the unbundling of NEPA will take over NEPA's energy purchasing obligations. The SPE will sign subsequent PPAs (subject to the specified annual limits) and will sell power to the distribution companies.
- (ii) During the transition period, it is expected that NEPA will have been unbundled into four functional areas, namely, generation, transmission/System Operator, power trading (by the SPE) and distribution. When generation and distribution sectors are further unbundled into daughter companies, contracts between the generation companies/entities and the SPE will be established. The transmission entity / company which is also the system operator will wheel power from the generation to the distribution companies.
- (iii) The FMPS and NEPA will ensure that appropriate contractual arrangements are put in place, in time prior to unbundling. The trading arrangement at each stage, from unbundling to corporatisation, should be compatible with the expected arrangement at the next stage in order to ensure a smooth transition.

4.2.3 IPP / ROT and EPP Contracts

- (i) In view of the fact that the rehabilitation of NEPA's power plants prior to their privatization is necessary and may:
 - a) require private sector participation;
 - b) be inadequate to meet the expected demand by the year 2002/2003;

it is necessary to sign some IPPs, ROTs and EPP now to ensure power sufficiency in the short/medium term.

- (ii) The Special Purpose Entity shall enter into IPP, ROT and EPP contracts and resell power to NEPA, its distribution subsidiaries or privatized distribution companies.
- (iii) The amount of power to be contracted under IPPs shall be limited to no more than 800MW in 2001 and 700MW in 2002 subject to the findings of the demand and supply forecast.

4.2.4 Subsidies

- (i) Tariff shall be adjusted in a gradual manner subject to increase in power supply. Subsidy shall be available as long as tariff remains lower than the cost of purchase of energy from EPP and IPPs.
- (ii) The Federal Government of Nigeria shall explicitly make provisions for necessary subsidies in its annual budget.

4.2.5 Tariff Changes

- (i) Government recognizes the urgent need to revise tariffs upwards.
- (ii) Government will take steps to ensure an early completion of the tariff strategy study, as provided for in this policy document, so as to provide a basis for the tariff adjustments that need to be made during the transition period.

4.2.6 Federal Government of Nigeria Guarantees and Limits on Guaranteed IPP Capacity

It was noted that as long as tariffs are not adequate to cover the full cost of supplying power and the billing and collection remained inefficient, there will be need for government guarantees of the PPAs (IPPs, EPPs, ROTs). In specifying the guarantees, the following points are to be considered:

- (i) The guarantees must be tangible, dependable and enforceable;
- (ii) The maximum IPP capacity to be guaranteed shall be limited to 800MW in 2001 and 700MW in 2002, subject to the findings of supply and demand forecast, in order to prevent excessive burden from the cost of the guarantees.

4.2.7 Contractor Financing of ROTs, EPP and IPPs

- a) NEPA should not put its revenue into Escrow Accounts for contract financing
- b) In place of Escrow Accounts for NEPA revenues, FGN shall set up a credit support arrangement for ROTs, EPP and IPPs that avoids creating impediments for the unbundling and privatization of NEPA.

4.2.8 Improvements of Billing and Collection

Improvements of Billing and Collection will, among other benefits, reduce the amount of increase to the tariff. Appropriate measures, including the following, shall be put in place, by NEPA, to ensure the expeditious attainment of this objective. NEPA shall:

- a) Install as soon as possible grid meters at sub-stations.
- b) Proceed with and complete its programme for installation of prepayment meters, expeditiously. However, NEPA shall ensure that the financing arrangement for the programme result in a net gain in cash flow for NEPA.
- c) Complete its customer Census.
- d) Expand the use of banks as vehicles for bills collections in preference to the use of NEPA Kiosks.
- e) Encourage illegally connected customers to become legally connected by reducing connection charges.
- f) Progressively concession billing and collection to the private sector.

4.3 Competition In the Medium Term

The outline of the proposed structure of the Nigerian ESI after it has been unbundled and after both the generation and the distribution companies have been privatized (as specified in 4.2.1 [ii]) are outlined below:

4.3.1 Generation and the Bulk Power Market

The proposed post-privatization industry and trading structure for bulk power is as follows:

- (i) There will be a number of competing generating companies – to be spun off from NEPA, plus new IPPs;

- (ii) All thermal generating companies will be 100% privately owned. Large hydro stations may remain partially or wholly state-owned, in which case they shall be concessioned to private sector operators;
- (iii) Power will be traded primarily on the basis of bilateral contracts between generation companies and distribution companies so that each distribution company will have a portfolio of power purchase contracts with various generators and generators will have a portfolio of sales contracts;
- (iv) Generators and distributors will be able to trade power and capacity in the contract market by contract exchanges and sales;
- (v) Generators pay the full price of natural gas and other fuels;
- (vi) For within-day power imbalances, there will initially be a set of imbalance tariffs ('top-up' tariffs for when generators are required to provide power in excess of contracted demand and 'spill' tariffs for when generators are required to provide power at levels below contracted demand). Over time, these imbalance tariffs may well be developed by voluntary agreement into a simple spot market for daily or hourly power imbalances with an associated settlement system and a market operator, probably managed by the transmission company;

- (vii) For generation capacity expansion, the following will apply:
- a. The distribution and/or generation companies in discussion with the transmission company will initiate generation capacity expansion. The transmission company will retain the responsibility for making projections of future demand and likely future capacity requirements;
 - b. Capacity expansion plans will be approved by the regulatory agency;
 - c. following regulatory approval of the capacity expansion plans, the distribution and/or generation companies will prepare business plans (including the proposed planned increase in contracts for generation) and submit these business plans for regulatory approval;
 - d. following regulatory approval of the distribution and/or generation companies' business plans, they will commission expansions in generation capacity on the basis of tenders for new capacity. These tenders will be supervised by the regulatory agency which will act as an appeals route in cases where due process is not followed or where there are complaints of malpractices.
- (viii) Companies that generate power for their own use will have the right to sell power to distribution companies.

4.3.2 Transmission, Dispatch and System Planning

- (i) There will be a single transmission company which will co-ordinate the electricity system. It will: (a) handle the transmission of power on an open-access basis, on the basis of regulated transmission tariffs, (b) manage system operation and dispatch and (c) manage the settlement system. The transmission company will be responsible for all power lines of 132 KV and above;
- (ii) The transmission company's role will be that of electricity transport. It will neither buy nor sell electricity nor will it be able to own (or have any ownership stake in) electricity generation, distribution or sales (marketing) businesses;
- (iii) The transmission company will not be purely privately owned and may remain 100% state-owned. To the extent that there are private shareholdings in the transmission company, these will be under limits to ensure the independence of the transmission company in the electricity market and trading structure. If remaining in state-ownership, the management of some or all of the transmission company's activities may be franchised or leased to a private operator;
- (iv) The transmission company will buy ancillary services (e.g. reactive power, black start capability etc) from generating companies under specific contracts;
- (v) All generation in stations of more than 20MW or more will be centrally dispatched;

- (vi) The transmission company will have the responsibility for network expansion planning and load forecasting. It will work with generation and distribution companies for the planning of increases in generation capacity.

4.3.3. Distribution and Sales (Marketing)

- (i) There will be a number of distribution companies connected to the grid which will both distribute and sell power in their franchise areas (but with separate licences and separate businesses for (a) distribution and (b) power sales). Distribution companies will be responsible for managing network power lines below 132 KV;
- (ii) Distribution companies should, if possible, all be privately owned. Special arrangements may be needed for any distribution and sales franchises that are expected to be chronically loss making in the longer term;
- (iii) Distribution companies that are connected to the grid will retain a monopoly sales franchise to all final customers, large and small, but will be required to operate their retail sales (marketing) activities as separate businesses operating under separate licenses;
- (iv) Distribution companies will be prohibited from building or owning generating plants other than very small scale embedded generators (below 20MW);
- (v) There will be a number of off-grid small distribution and sales companies most of which will have their own generation or other power sources;

- (vi) Users will continue to be allowed to meet their power needs from their on-site generators;
- (vii) Distribution companies may initiate generation capacity expansion, in consultation with the transmission company.

4.3.4. Ownership and Cross-Ownership Issues

- (i) All non-core NEPA business activities will be separated out and, if possible, privatized as soon as possible (i.e all business activities not directly related to the transmission, generation, distribution or sale of electricity, e.g. engineering businesses, electricity goods retailing, etc);
- (ii) Neither distribution nor generating companies will be allowed to own shares in the transmission company;
- (iii) Generating companies will not be allowed to own shares in distribution / sales (marketing) companies and vice-versa;
- (iv) NERC will monitor the exercise of market power in the sector with a view to preventing mergers and cross-mergers a) amongst generating companies, b) amongst distribution /sales (marketing) companies, and c) between generating and distribution/sales (marketing) companies, - that would restrict competition.

- (v) In cases where NERC considers that there is abuse of market power, it will refer these to an Anti-Trust Commission. Prior to the establishment of such a Commission, the NERC will undertake the responsibilities of the Commission with regards to the ESI.

The ownership structure of off-grid and mini-grid electricity suppliers will be as flexible as possible and allow for public, private, co-operative and mixed ownership arrangements.

4.4 The Long-Run Competition Structure: Key Features

The long-run is defined here as the point at which:

- (i) There is no longer a generation deficit (and there exists a normal capacity reserve margin).
- (ii) The transmission and distribution grids have been rehabilitated and reinforced so that there is no more than the normal level of network constraints.
- (iii) Payments discipline has been fully established from generation through to retail customers.
- (iv) On average, electricity prices cover the full economic costs of supply, including the expectation of a reasonable, risk-adjusted rate of return on capital.
- (v) For each class of grid-connected consumer, the price of electricity at least covers the full costs of supply to that class subject to a "Lifeline tariff" or other arrangements to protect low-income household consumers.
- (vi) Supply quality and standards are being met.

- (vii) Once these conditions have been met, sales (marketing) competition can be introduced without threatening the financial viability of the main participants in the system. This point might be reached in around 5-7 years time.

4.4.1 Framework Modification

Given these conditions, the medium-term framework shall be modified to introduce progressively more competition. The main steps, in increasing order of complexity, are:

- (i) Large industrial consumers are allowed to purchase directly from generators or from any other power supplier;
- (ii) Distribution companies lose their monopoly sales (marketing) franchise and the market for sales to final customers is opened up to a range of new companies who are allowed to compete in the sale of electricity to retail consumers;
- (iii) Combined distribution and sales (marketing) businesses are split into separate companies with limits on cross-ownership;
- (iv) A much fuller and deeper wholesale market is established, a wholesale pool, with formal membership rules, procedures, etc;
- (v) Full retail sales (marketing) competition is established with open access to the low voltage distribution network.

4.4.2. Off-grid Systems

The proposed clear separation of business activities between generation, transmission, distribution and sales (marketing) would not apply to off-grid systems. They could continue as vertically integrated systems and without any imposed separation of functions or cross-ownership restrictions.

CHAPTER FIVE

RESTRUCTURING AND PRIVATISATION

5.0. General

The centre-piece of the proposed reform is the unbundling of NEPA into:

- a. a number of competing, privatised generation companies;
- b. a number of privatised distribution and retail sales (marketing) companies; and
- c. a company responsible for transmission and dispatch.

This will be accompanied by the encouragement of competition from new entrant companies initially in generation and later in wholesale and retail sales (marketing) of electricity. The companies will be issued new licences by NERC designating their role and responsibilities in the liberalized market. The restructuring and privatisation of the sector shall be of the highest priority, and shall not delay or preclude other steps to open the electricity market to attract private investment and intensify competition as outlined in this policy.

5.1 Strategy for Unbundling NEPA

Government shall set out the sequence for moving from the current NEPA structure to an unbundled and privatised structure in an effective and speedy manner as follows:

- i. creation of 100% state-owned holding company and subsidiary generation and distribution companies within it;
- ii. incorporation of subsidiary companies vested with their assets and liabilities by 2002;
- iii. privatising the subsidiary companies leaving a transmission and dispatch company plus a residual 100% state-owned holding company by 2003;

- iv. development of trading arrangements among these companies which will evolve into a bulk power market;
- v. employing the Rehabilitate, Operate and Transfer (ROT) and similar schemes as early privatisation options, with transfers going back to the Bureau of Public Enterprises and not NEPA;
- vi. commissioning of a restructuring study to provide the details of the transition from the current structure to the privatisation of the subsidiary companies.

The objective of the above sequence is to provide for an early privatisation of the main elements of NEPA after the restructuring which allows for an effective market and trading structure that will support an efficient Nigerian Electricity Supply Industry (ESI).

5.2 **Priority Actions to Enable the Unbundling and Privatisation of NEPA**

NEPA currently faces major problems, technical and commercial, in maintaining its services. Some of these problems must be addressed prior to or in parallel with the early stages of the unbundling process. The key areas in which the Government is committed to such action are:

- (i) Improvements in electricity supply through the conclusion of Emergency Power Programme (EPP) contracts;
- (ii) Putting out to tender some of NEPA's existing generation as Rehabilitate, Operate and Transfer (ROT) projects;

- (iii) Carrying out essential investments as proposed in NEPA's Action Plan, with agreement both on essential priorities and on what is to be financed by the Government, as opposed to what is to be financed by the new owners;
- (iv) Contracting out NEPA's billing and collection;
- (v) Repairing and upgrading the system control and communications facilities;
- (vi) Priority strengthening of the transmission network to be able to support the new contract markets for bulk power;
- (vii) Developing a strategy for the equitable treatment of NEPA's employees during the reform process; and
- (viii) Developing a public awareness and public relations strategy.

5.3 **Negotiating Principles for IPP Contracts**

The Federal Government of Nigeria recognises the need to negotiate short-term increases in generation capacity under Emergency Power Project (EPP) agreements. However, the need to conclude fixed-term EPPs must not and will not be allowed to impede the development of effective competition in generation in the medium to long term, nor to pre-empt resources needed for upgrading transmission and distribution. For this reason, the Federal Government of Nigeria is determined that all IPP projects must be considered on their own terms following the guidelines below:

- (i) NEPA shall only conclude contracts, before the establishment of corporatised transmission and distribution companies, if explicit reassignment clauses to the future

inheritor of the contract (prior to majority privatisation of distribution companies) and to future distribution companies (after their majority privatisation) are provided;

- (ii) All Independent Power Projects (IPP), EPP, R-O-T and other large projects must be competitively tendered;
- (iii) Consultations and discussions on proposed regulatory framework will be made with potential IPP partners as well as all Nigerian parties with an interest in the reforms;
- (iv) Government shall not provide guarantees against commercial risks.

5.4 **Privatisation**

- a) It is the intention of the Government that management and ownership control in unbundled generation and distribution companies shall be transferred to the private sector with substantial participation by strategic investors with experience and resources in the electricity industry. The Government may retain minority non –controlling ownership interest in the short run, in which case the Government's shares should be under the control of the relevant Government agency.
- b) The process and timetable for the privatisation of these companies will be published by the National Council on Privatisation (See <http://www.bpeng.org>) based on the recommendations on the privatisation advisers. The privatisation programme is guided by the primary objectives of achieving significantly increased resource mobilization and operational and economic efficiency in the ESI, as well as significantly increased access to electricity, while ensuring that the services are as affordable and technically advanced as possible.

5.5 Nigerian Participation

The Government shall ensure the unbundling and privatisation of NEPA and make provision for:

- a. technological transfer from foreign participants;
- b. a substantial Nigerian role in the share ownership and management of the privatised companies; and
- c. effective national consensus building necessary for the success of reform .

5.6 NEPA Staff

Government will have due regard for the interest of the staff of the companies to be privatised within the provisions of their conditions of service.

CHAPTER SIX ECONOMIC REGULATION

6.0 **General**

The objective of this policy is ultimately to establish a long-term electricity market structure in Nigeria in which multiple operators provide services on a competitive basis to the broadest range of customers. Under such a regime, competitive market forces would be the best determinant of the appropriate and sustainable levels of prices charged by various carriers for their services.

Currently, Nigerian power prices to retail consumers are:

- very low on the average; and
- seriously unbalanced.

Household consumers pay around 3N/kWh or only 1.2N/kWh for the smallest consumers – significantly less than industrial consumers who pay 4-5N/kWh, even though the cost of supplying household consumers is significantly higher.

In addition, much electricity is unbilled and collection rates are low so that only 40-45% of revenues corresponding to these artificially low prices is actually received. The consequence is a grossly under-funded electricity system, which has major difficulties in covering its current costs and providing for essential maintenance. In consequence, it is obvious to all that it has been starved of investment for many years.

The Federal Government of Nigeria recognizes that breaking this spiral and ensuring sufficient revenue to fund the full economic costs of the system, including a reasonable rate of return on capital, is crucial for the success of the reform programme.

Experience in Nigeria demonstrates that people are willing to pay more than the current rates for efficient services. Many businesses, large and small, run generators that provide power at a cost many times higher than the level of NEPA prices. Similarly, many villagers pay significantly more for electric power from off-grid sources than comparable households in villages connected to the grid. Both of these demonstrate a willingness to pay higher prices for a more reliable service.

It is likely that for some interim period active competition will not fully develop throughout the market, leaving one or more dominant operators with the power to control pricing. In these circumstances, it is appropriate for the Nigerian Electricity Regulatory Commission to establish tariff regulation requirements for such dominant operators, which will ensure that service prices are cost-oriented, that consumers' and competitors' interests are protected, and that the industry develops in the most efficient manner possible.

6.1 **Tariff Regulation**

- (i) The NERC shall establish tariff regulation rules for dominant operators providing basic and essential services to the public and to other, non-dominant operators. In this regard, the Commission shall determine appropriate definitions and criteria for identifying an operator's dominance in a service market, and the essential nature of the services provided.
- (ii) The tariff regulations that will apply to each operator shall be established at the time a license is issued. Similar tariff rules and requirements shall apply to operators in similar markets on a non-discriminatory basis.
- (iii) In determining a tariff regulation regime, the Commission shall be guided by the following principles;

- a) Electricity service tariffs shall in all cases be cost-oriented, reflecting the actual cost required by operators to provide the services in question, including a reasonable rate of return on capital;
- b) Tariff setting rules must be transparent to both operators and their customers, with stable, predictable, and understandable standards for current prices and for changes to those prices over time;
- c) Electricity service tariffs shall generate sufficient revenues for regulated operators to compensate for their investments, while also seeking to be as affordable as possible to the broadest range of potential service customers;
- d) Tariff will be structured to promote demand side management through time-of-use pricing, multiparty tariffs, etc.
- e) In general, cross-subsidies between services or service categories shall be prohibited. In certain cases, limited cross-subsidies required by government may be permitted, only in connection with an explicit public purpose such as the promotion of universal access, and where such subsidies can be effectively targeted to accomplish that purpose at minimum cost. In such cases, the request shall be made by the Federal Government to NERC in writing, for a specific and defined purpose and published in the gazette and at least two (2) national newspapers. Cross-subsidies by service providers shall require the approval of the NERC and shall be for cases that do not inhibit competition.

- (iv) To the extent that the present tariff levels of NEPA are found to be inconsistent with these principles, the NERC shall undertake a tariff review and rebalancing process, in co-ordination with the privatization and restructuring of the companies.

6.2 Tariff Adjustment Policy

- (i) Any tariff adjustment policy must be on the basis of:
 - a) demonstrable improvements in service to customers;
 - b) sustained efforts to improve bill collection; and
 - c) changes in supply costs.

- (ii) All of the points above imply a medium-term strategy for tariffs with the achievement of higher average tariffs and major rebalancing of household tariffs relative to industrial tariffs over a reasonable period (e.g. 5 years). This is crucial:
 - a) given the expected reliance on IPPs for expansion of generation capacity;
 - b) given the massive investment needed both to restore and to extend the system.

- (iii) The Federal Government of Nigeria shall therefore ensure that the first objective should be to ensure that tariffs at least cover operating costs and the full cost (including a normal, risk-adjusted rate of profit) on new investments. The Government is committed to achieving this first objective by the time of privatization (i.e by 2002-3).

The second objective is to move to fully cost-reflective prices by customer groups over time. A particular milestone is when prices to households fully cover all cost of meeting their demand. Only after this has been achieved can competition in retail sales of electricity be introduced. Large industrial consumers and others can be allowed to buy power from the supplier of their choice (including generators) without threatening with bankruptcy, the privatized distribution companies as their profitable industrial

consumers are 'cherry-picked' by other suppliers. The Government is committed to achieving this objective as soon as possible and before 2010.

- (iv) To accompany this programme, Government will commission:
 - (a) a cost-of-service study to establish a base-line on the costs of supply of each element of the electricity supply and a first estimate of full economic costs;
 - (b) a tariff adjustment study to test and develop recommendations of this paper;
 - (c) a public information and education programme that will help explain the cost savings from more efficient use of energy and why higher prices are necessary if the amount and quality of electricity are to be improved; and will promote
 - (d) the introduction of peak and off-peak tariffs and any other tariff design changes that will help provide better signals to consumers and producers.

6.3 **Protecting Low Income Electricity Consumers**

- (i) The obvious questions that are inevitably raised in tariff adjustment strategy of the type proposed for Nigeria are:
 - a) affordability; and
 - b) regional differentials.
- (ii) These questions may be tackled by:

- (a) the introduction of a nationally uniform "lifeline" tariff, e.g. for the first 25KWH of household consumption per month;
- (b) the restricted use of subsidies, post privatization, for the promotion of universal access such as in;
 - (b.1) connection subsidies for rural access
 - (b.2) subsidies on distribution investments, if essential, e.g. for distribution zones that cannot be expected to be viable under sound business practices.
- (iii) The implications of the above provisions will be examined as priority issues in the proposed tariff strategy study.

CHAPTER SEVEN

RURAL ELECTRIFICATION ARRANGEMENT

7.0 General

The primary objective of the Nigerian rural electrification policy (including semi-urban development) is to expand access as rapidly as can be afforded in a cost-effective manner. This implies full use of both grid and off-grid approaches, with subsidies being primarily focused on expanding access rather than consumption. It is assumed that private sector providers will be heavily involved in enhancing access through - both the new distribution companies to be formed out of NEPA and a range of other companies.

The Ministry of Power and Steel will continue to be responsible for laying down policy on increasing access and rural electrification, including (a) setting-out policy guidelines and (b) monitoring and evaluating the performance of the programme and its agencies.

7.1 The Rural Electrification Policy

The rural electrification policy shall:

- (i) include a full menu of rural electrification options – grid and off-grid, mini-grid, non-thermal, renewables, etc;
- (ii) ensure close co-ordination of rural electrification expansion with economic development objectives; and
- (iii) encourage States, local communities and businesses to develop and contribute financially to rural electrification.

7.2 **Strategies**

The proposed way of achieving these objectives is to establish an independent Rural Electrification Fund operated by a Rural Electrification Agency. The Fund:

- (i) will develop both grid-connected and off-grid rural electrification;
- (ii) will operate with funding from an electricity levy on consumers and/or Federal subventions, supplemented by funding from States, private companies, community contributions, etc;
- (iii) will be open to bids from a wide range of organisations;
- (iv) will invite bids for funding of connections to supply (grid and off-grid) but not for consumption;
- (v) will only supply some proportion of the total funding so that other parties (distribution companies, local communities, business groups, etc) would have to provide the rest.

7.3 **Key Features**

To make the Rural Electrification Fund work well, the key feature shall be:

- (i) Clear policy guidelines within which the Fund must operate, particularly the criteria for selecting between applications;
- (ii) Transparent procedures for the operation of the fund and its bidding process; and
- (iii) Proper accountability of the Fund e.g., independent audit, proper monitoring and reporting procedures, etc.

7.4 **Rural Electrification Fund**

An access expansion for Nigeria will be developed based on the application of a Rural Electrification Fund. The criteria which the Fund will use is to be developed by the Ministry of Power and Steel and this will need to give due weight to development benefits and cost

effectiveness as well as to equity and regional balance. The implementation of rural electrification programmes should as far as possible encourage decentralization and diversity and make use of all resources (financial, technical and human) available at State and local levels.

Such arrangements will need to be in place when the new distribution companies have been separated out of NEPA and privatized. The Government will commission a Strategy Study for rural electrification policy as soon as possible to start the process. This study should take for its starting point the rural electrification policy objectives and guidelines as set out above.

CHAPTER EIGHT

OBLIGATIONS TO CONNECT AND SUPPLY AND QUALITY STANDARDS

8.0 General

In most countries, electricity distribution companies have an obligation to connect anyone within a certain distance of existing power lines or anyone at all unless the connection cost would be very high. Similarly, there is typically an obligation to serve (ie an obligation to maintain proper supplies of electricity) to anyone connected to the system.

8.1 Obligation to Serve/Connect

In Nigeria, in current circumstances, it is impossible to fully impose such obligations in the next few years. In specifying and enforcing any obligation to serve or connect, the NERC will take account of the stage of the development of the ESI, the needs to reinforce existing generation and networks, rural electrification arrangements and obligations on mini-grids and the long-term objective of establishing appropriate obligations to connect and to serve.

8.2 Quality Standards

The quality of electricity supply and service manifestly needs to be raised. Here also, Government will take proper account of the level of achievable quality standards and how rapidly they can, in practice, be improved in the long run. The quality standards for generation, transmission, distribution and supply will be laid down by NERC.

8.3 Quality of Service Study

To lay the basis for the establishment of a dynamic quality of service regulation for generation, transmission, distribution and sale services, Government will commission a quality of service study.

8.4 **Enforcement**

The NERC will be given powers under the new Electricity Law to issue, monitor and enforce codes of practice for obligations to serve and connect as well as for quality standards and to update and improve standards as supply conditions improve.

CHAPTER NINE

ELECTRICITY-NATURAL GAS INTERFACE FOR POWER GENERATION

9.0 **General**

The regional differentials in access to electricity, particularly grid-provided electricity, are exacerbated by poor access to reliable supplies of natural gas. This also significantly affects the relative regional costs of electricity and, hence, the economic prices that would need to be paid in different areas and regions of the country.

In considering the future expansion of the electricity industry, the Government will consider jointly the potential for expanding the natural gas pipeline network and the electricity transmission grid and the location of new generation stations.

9.1 **Fuel Mix**

The Nigerian electricity fuel mix will, of course, continue to use and expand the use of hydro generation, renewables and will continue to use some liquid fuels. Nevertheless, natural gas (and the use of currently flared associated gas) represents the major likely fuel for the future expansion of generation. In addition, gas powered electricity generation is the most obvious growth market for the commercial development of gas markets and will be explored by the IPPs.

9.2 **Potential Joint Development of Electricity and Natural Gas Industries**

To transform the prospects for the development of both the electricity industry and the natural gas industry in Nigeria, Government shall explore the options for both on- grid and off-grid supply - and reduce the costs of electricity in many areas of the country.

For this purpose, the Ministry of Power and Steel shall carry out a joint electricity and natural gas capacity expansion planning exercise alongside the proposed tariff strategy study. This proposed exercise should investigate how far there are commercial and wider economic benefits from developing gas powered generation and access to gas in regions of the country not currently served with natural gas.

CHAPTER TEN

FINANCE AND FUNDING

10.0 General

Improving the availability, efficiency and affordability of electricity services in Nigeria requires considerable financial, human and technological resources. With the focus of Government on investing in the social sectors, the private sector is expected to be the primary promoter of development in the electric power sector.

The liberalization policy of Government shall be pursued vigorously to attract private sector participation in the electric power sector. The tariff structure shall be market-driven, enabling service providers and operators to recover their investments over a reasonable period of time, in an open and competitive manner.

10.1 Strategies for Finance and Funding

Government shall provide incentives to investors to enable them grow rapidly and efficiently.

Such incentives shall include:

- (a) Taxes and import duties which are no less attractive than those for essential engineering technology;
- (b) Fiscal incentives to encourage the local manufacture of electrical equipment and development of related software;
- (c) Simplification of procedures and requirements for the importation of electrical equipment.
- (d) Granting of pioneer status to qualified investors in the electric power sectors.

Regulatory procedures, including licencing and monitoring, will be kept as simple and transparent as possible, consistent with the need for effective regulatory supervision of industry participants.

CHAPTER ELEVEN

HUMAN RESOURCES DEVELOPMENT

11.0 General

Continuous education and training of personnel for the electricity industry is necessary to keep up with rapid technological changes. Government shall therefore support the establishment of suitable training facilities and encourage the provision of appropriate courses in tertiary institutions.

11.1 Strategies

- (i) Government shall support the establishment of a National Electricity Institute (NEI) for the training and development of requisite human resources.
- (ii) Electricity Sector companies shall be encouraged to train indigenous personnel and support the NEI to Universities and Polytechnics; and
- (iii) Universities, Polytechnics and Technical Colleges shall be encouraged to offer courses in electrical engineering and management. The National Universities Commission (NUC) and the National Board for Technical Education (NBTE) shall ensure compliance with this policy objective.

CHAPTER TWELVE

RESEARCH AND DEVELOPMENT

12.0 **Research**

Research is necessary for the technological development of the nation. Government shall promote research and development (R&D) in Electrical engineering technology and encourage the operating companies and the NERC to support such efforts in relevant institutions.

12.1 **Strategies**

- (i). The National Electricity Institute shall have a research centre to carry out R&D in Electrical engineering technology and infrastructure development;
- (ii) Government shall promote collaborative R&D efforts amongst NERC, the operators, educational institutions and international agencies.

CHAPTER THIRTEEN

DOMESTIC HARDWARE/SOFTWARE DEVELOPMENT

13.0 General

The domestic production of electrical hardware and software is desirable for national development and, in particular, the electricity industry.

Government shall therefore encourage domestic production of electrical equipment, components and software to meet local and export demands.

13.1 Strategies

- (i) Government shall actively encourage the establishment and expansion of domestic capacity to produce hardware and software for the electricity industry.
- (ii) The NERC shall ensure that the domestic production of hardware and software complies with international technical standards and quality;
- (iii) Government shall encourage joint ventures between Nigerian and foreign entrepreneurs towards the production of electrical equipment and software;
- (iv) Government shall promote the development of the electric power sector as an integral part of the National Industrial Policy of Nigeria; and
- (v) Government shall encourage the patronage of locally manufactured products.

CHAPTER FOURTEEN

SAFETY AND NATIONAL SECURITY

14.0 General

The protection of life and property rights as well as the promotion of national security are vital for overall economic development. Accordingly, Government shall ensure that electricity operators comply with generally accepted standards for provision of special services for safety, emergency and national security.

14.1 Strategies

- (i) Government shall ensure the protection of life and property of all citizens and safeguard electricity infrastructure;
- (ii) Government shall ensure the provision of electricity services for emergency and distress situations in all parts of the country (on land, sea and air) and support international co-operation in this regard;
- (iii) Government shall ensure that laws relating to electricity offences are kept under constant review and enforced; and
- (iv) All electricity matters relating to the defense and security of the nation shall be restricted to Nigerians only.

CHAPTER FIFTEEN

INTERNATIONAL CO-OPERATION

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15.0 General

International co-operation in electricity is essential for efficient development of regional and international electricity markets and networks, setting of standards in the operation of electric power systems and it also affords countries the opportunity of taking advantage of the experiences of other nations in electricity development. Relevant international organizations provide suitable vehicles for the achievement of these objectives. Bilateral arrangements may, in addition, be explored for the same purpose.

The Government shall ensure that Nigeria meets its international obligations and participates actively in all international electricity activities whose objectives would promote electricity development in the country.

15.1 Strategies

Government shall:

- (i) accord priority to the country's participation in the various projects aimed at rapid development of the West African regional electricity network;
- (ii) ensure effective participation of Nigeria in the activities of various international organizations;

- (iii) encourage NERC and all operators to take advantage of the opportunities available at international levels to promote the achievement of their set goals and objectives;
- (iv) support the effort of the Economic Community of West African States (ECOWAS) in harmonizing electricity development in the region;
- (v) encourage and support the export of locally manufactured goods and services to other African countries;
- (vi) encourage and support other West African regional integration initiatives in electricity development, harmonization of the regulatory policy and promotion of interconnections.

CHAPTER SIXTEEN

POLICY IMPLEMENTATION AND REVIEW

16.1 **Policy Implementation**

The National Electric Power Policy shall be implemented through the following instruments:

- a) An implementation machinery shall be set in motion immediately after approval of the policy;
- b) A National Electricity Forum shall be organized by the Ministry of Power and Steel with the participation of relevant Organizations and stakeholders;
- c) Annual reports on electricity development in Nigeria shall be prepared and published by the Ministry of Power and Steel.

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16.1 **Periodic Review**

The policy shall be reviewed from time to time by government to take cognizance of changes in standards, technologies, markets, and any other matters that may arise from its implementation.

CHAPTER SEVENTEEN

CONCLUSION

The National Electric Power Policy presents, inter-alia, the policy objectives of the Federal Government of Nigeria in:

- a) promoting the deployment and utilization of electricity infrastructure and services;
- b) accelerating the socio-economic and political development of the nation; and
- c) enhancing the quality of life of the Nigerian citizenry.

The historical development and the present status of the electricity industry in the country are briefly described. The short, medium and long terms objectives are clearly spelt out. The industry structure, competition policy and economic regulation that are required for the effective implementation of the policy are highlighted. The guidelines and strategies for the achievement of the objectives of the policy are also clearly described.

The Federal Government of Nigeria is confident that if the policy is implemented, consumers will reap the benefits of improved and affordable electricity as the engine of growth of the national economy.

APPENDIX I

DETAILS OF THE POWER GENERATION STATIONS

The Authority has nine (9) power stations, nationwide, as follows:-

i. Kainji Hydro Power Station

This Station located in Niger State along the River Niger is the first Hydro Power Station in the country. The 8 generating units were commissioned thus:

- | | | |
|------|-----------|------|
| i. | 4 x 80MW | 1968 |
| ii. | 2 x 10MW | 1976 |
| iii. | 2 x 120MW | 1978 |

ii. Jebba Hydro Power Station

This Station is located in Kwara State down stream of the Kainji Hydro Power Station. It has 6 units which were commissioned thus:

- | | | |
|----|----------|------|
| i. | 6 x 95MW | 1986 |
|----|----------|------|

iii. Shiroro Hydro Power Station

This Station is located in Niger State on the Shiroro Gorge along the Kaduna River. It has four generating units, which were commissioned thus:

- | | | |
|-----|-----------|------|
| i. | 1 x 150MW | 1989 |
| ii. | 3 x 150MW | 1990 |

iv. Afam Thermal Power Station

This Station uses natural gas and is located in the outskirts of Port Harcourt in Rivers State. The Station started operation in 1965. The 6 units were commissioned thus:

i.	2 x 10.5MW	1965
ii.	2 x 17.5MW	1965
iii.	4 x 23.9MW	1976
iv.	4 x 27MW	1978
v.	6 x 75MW	1982

v. Delta Thermal Power Station

This Station also uses natural gas and is located in Ughelli, Delta State. The Station started operation in 1966. The 6 units were commissioned thus:

i.	2 x 36MW	1966
ii.	6 x 20MW	1975
iii.	6 x 20MW	1978
iv.	1 x 100MW	1989
v.	5 x 100MW	1990

vi. Egbin Thermal Power Station

This Station is located in the outskirts of Lagos State. The Station is the largest Thermal Power Station in the country. Its units were commissioned thus:

i.	2 x 220MW	1985
ii.	2 x 220MW	1986
iii.	2 x 220MW	1987

vii. Sapele Thermal Power Station

This Station is located in Ogorode, Delta State. The Station uses both steam and gas turbines.

These were commissioned thus:

- | | | |
|-----|-----------|------|
| i. | 6 x 120MW | 1978 |
| ii. | 4 x 75MW | 1981 |

viii. Ijora Thermal Power Station

This Station which is located in Lagos uses AGO fuel and has 3 units which were commissioned thus:

- | | | |
|----|----------|------|
| i. | 3 x 20MW | 1978 |
|----|----------|------|

ix. Oji Thermal Power Station

This Station which is located on the Oji River, Oji, in Enugu State. Though presently non-functional, it's the only coal-powered station in the country. Its four units were commissioned as follows:

- | | | |
|-----|----------|------|
| i. | 2 x 5MW | 1956 |
| ii. | 2 x 10MW | 1956 |

