

# **AN ASSESSMENT OF THE POWER SECTOR REFORM IN NIGERIA**

**BY**

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## **Abstract**

*The paper assesses the power sector reforms from the Obasanjo Administration (1999) to date with a view to bringing out the problems and prospects, challenges and defects associated with the reforms. The paper also sets to explore better ways of ensuring the success of the reforms by identifying certain key issues that must be addressed by government. The work uses documentary analysis method in sorting out relevant information. The paper concludes that, the government needs to aim at overhand rather than severing with existing situations in the energy and power sector respectively as well as the overall national socio-economic and political order.*

### **1.1 Background to the Study**

In Nigeria, electricity supply relies significantly on hydropower. This is also the case in Ghana, Benin, Togo, Guinea and Mali. Electricity supplies have been less than satisfactory in these countries due to frequent outages. The situation is same in Senegal where electricity generation is mainly based on oil, as the country have experienced frequent power plant outages due to low reliability and difficulty of fuel procurement. One would expect that Nigeria, being a major oil producer and exporter coupled with its gas potentials, would enjoy relatively stable electricity generation and distribution for its huge population and sizable industry compared to other West African countries highlighted above. As a matter of fact, the story in Nigeria is gloomier than the other countries mentioned leading to the reforms embarked upon by the Nigerian government in the electricity sector, (Oke, 2007).

Since 1972 till early part of 2006, electricity production and supply in Nigeria has been a monopoly of the federal-owned electric utility body known as National Electric Power Authority (NEPA). This utility was charged with the responsibility for the generation, transmission, distribution and sale of electricity to customers. Today, Nigeria's power sector is marked by low generating capacity while much of the country's

citizens lack access to uninterrupted supplies of electricity. Lack of adequate funding and managerial strategies has resulted in the steady decline in the performance of the utility. According to Nigerian Tribune, the problems of that sector had been compounded by the fact that, throughout the 1990s, there was no expansion in power generation facilities, notwithstanding the galloping population. In 1993, for example, the energy generated was 1,669 MW. The country leadership then did not see any need to invest in the power sector. Between 1981 and 1985, during the fourth National Development Plan, there was oil boom and power demand growth rate was over 10 per cent, (Daily Independent, 2011). Thus, while the civilian administration took over in 1999, power generation was in the region of about 1,700 megawatts out of an installed capacity of 5,906 megawatts. At the beginning of year 2000, power supply plummeted to 1,500 megawatts, amounting to 25.3 per cent of installed capacity.

## **1.2 STATEMENT OF PROBLEM**

The Nigeria power sector is marked by low generating capacity relative to the installed capacity and much of the country's citizen do not have access to interrupted supplies of electricity. In 1999 power generation was in the region of 1700 mega watts. At present electricity generation ranges from between 2500 mega watts to about 3000 megawatts, while the estimated national consumption is in excess of 10,000 megawatts. Potential demand in the next few years is estimated at about 15,000 megawatts (UBI, 2012). This is despite the fact that Nigeria is endowed with massive reserves of hydro energy, petroleum reserves and one of the largest gas reserve. Government policy for the sector during the 1980's and the 1990's and until recently did not anticipate national needs the power sector is generally inefficient and is heavily dependent on government treasury for servitude.

The thrust of this paper is to assess the power sector reforms from the Obasanjo administration (1999) to date with a view to bringing out the problems and prospects, challenges and detects associated with the reforms. The paper also sets to explore better ways of ensuring the

success of the reforms by identifying certain key issues that must be addressed by the government.

### **1.3 Objectives of the Study**

- i. To trace the genesis and objectives of the reform
- ii. To examine the strategies of implementing the reforms.
- iii. To identify the problems and prospects of the reforms.
- iv. To recommend ways of ensuring effective power supply in Nigeria.

### **1.4 Methodology**

This write up uses documentary analysis method in sorting out relevant information. Government publication, scholarly articles and books were relied upon in writing this paper. This implies that secondary sources formed the backbone of the literature used in this work.

### **1.5 Literature Review**

At the beginning of year 2000, power supply plummeted to 1,500 megawatts, amounting to 25.3 per cent of installed capacity. The Federal Government then kick started the process of power revitalization, culminating in the setting up of the Electric Power Sector Implementation Committee and then the passage of the Electric Power Sector Reform Act of 2005. The main aim of the Act was to ensure the privatization of the Power sector to ensure efficiency. The idea of power sector reform, which invariably involves the privatization of the PHCN, was seen as a positive development. It was envisaged that the privatization exercise for the PHCN, is expected to unbundled into 18 successor companies when successfully implemented and this is expected to turn around the ugly power situation which has drawn back the progress of Nigeria for decades. The Bureau of Public Enterprises (BPE), with the

guidance of the National Council on Privatization (NCP), successfully unbundled the PHCN. It also named seven firms that would participate in the financial bids for five power generation plants. The successful companies

1. Phoenix Electricity,
2. Transcorp Consortium and
3. Ampiron Power Distribution Limited.
4. CMEC Energy
5. GPN Nestoil Power Services Limited,
6. Mainstream Energy Solution Limited,
7. North South Power Company Limited.

By February 2005, The Electricity Power Sector Reforms (EPSR) bill that will provide the legal backing to the power sector reforms was adopted by the Senate and the House of Representatives, and signed into law by President Olusegun Obasanjo in 2005. The fundamental objective of the reform is to “ensure that Nigeria has an electricity supply industry that can meet the needs of its citizens in the 21st century”.

Other objectives are to "modernize and expand electricity coverage" and “to support national economic and social development”. The reform of the Nigerian electricity industry comprised of restructuring and privatization. The promulgation of the Bill into law opened the way for jump-starting the following processes:

- I. The legal unbundling of NEPA into new business units;
- II. The establishment of an Independent regulatory agency;
- III. The establishment of a Consumer Assistance Fund to ensure the efficient and
- IV. targeted application of subsidies to less privileged members of the society;

By May 29, 2007, President Umaru Musa Yar Adua made a major public policy pronouncement concerning the perilous state of Nigeria’s power sector, promising to improve the existing embarrassingly very poor state of power generation capacity in the sector by declaring a state of emergency on the sector. He approved the setting up of Power Sector Reform Committee (PSRC) under the auspices of the National Energy

Council (NEC); thereby setting the stage for revamping and reorganization of the power sector. The Nigerian Power sector reform was aimed at improving the stability of electricity supply, improving cost recovery, and increasing the availability of investment capital. In addition to improving cost recovery and the financial health of utility systems in Nigeria since, there has been an increasing pressure to price electricity at its marginal cost and allow independent power producers (IPPs) to sell power to the grid (Daily Independent, 2011).

The power sector in reform Nigeria during the period 1999-2007 had the following main objectives as follows:

- Promote competition to facilitate more rapid provision of service throughout the country;
- Create a new legal and regulatory environment for the sector that establishes a level playing field, encourage private investment and expertise, and meet social goals;
- Unbundled the National Electric Power Authority (NEPA); and,
- Privatize the successors to NEPA and encourage them to undertake an ambitious investment programme.

However, this process was abridged in 2007 by the then new President Yar' Adua's administration. The privatization process was put on hold.

Today, while the privatization agency appears repaired for the privatization exercise, a lot of intrigues and power play which are capable of derailing the entire exercise, if not fully settled, cropped up along the line, (Nigerian Tribune, 2011). The monopoly hitherto enjoyed by erstwhile National Electric Power Authority (NEPA) for several decades has been abrogated, as the new regime aims to liberalize the sector. However, despite nomenclature shift from NEPA to Power Holding Company of Nigeria (PHCN), the problem of declining electricity generation from domestic power plants still persists due to dilapidated structures, obsolete equipment among others. While the Nigerian electricity sector is agreeably liberalized, the sector has witnessed series of disinvestment from the private sector and collapsed of deal talks with potential private electricity services provider. The masses, as end users of the current wobbly electricity have remained tirelessly hopeful for a new

dawn, even in the midst of unfulfilled promise of declaration of national emergency in the power sector, which the current administration promised at its inception.

The power sector reform is just regaining its momentum under President Jonathan. PHCN has finally be dissolved and replaced by the succession companies. The President 'launched a New Power Sector Roadmap on 26th August, 2010, which outlines government's plan to accelerate the pace of reform and improve on short term service delivery. The President also established a Presidential Action Committee on Power (PACP) to remove “red-tape”, achieve policy consistency and cut-through bureaucracy to decision making by involving stakeholders in decision process. Finally, the day to day implementation of the plan was left with the Presidential Task Force on Power (PTFP).

### **Review of immediate past policy actions**

Former president Obasanjo upon being sworn-in as Nigeria's President and Commander-in-Chief of the Armed Forces of Nigeria on May 29, 1999, promised to quickly fix the lingering terrible electricity supply problem facing the country. Obasanjo set the ball in motion with the appointment of late Chief Bola Ige of blessed memory, as the Minister of Mines, Power and Steel Development - as the ministry was then named, Obasanjo also retained the immediate past holder of that portfolio, Bello Suleiman, as the Managing Director of the infamous National Electric Power Authority (NEPA). Engr Bello Suleiman was also a one time Executive Director at NEPA Headquarters before being made a Minister in Charge of Mines, Power and Steel Development by General Abdul salami A. Abubakar (1998-1999).

The apparent failure by late Chief Bola Ige and Alnaji Bello Suleiman to turn around the power sector; particularly NEPA, saw a change of baton from Bola Ige to Lyel Imoke and from Bello Suleiman to Joseph Makoju respectively in a move by Obasanjo to refocus the direction of the transformative process of the power sector in line with his avowed promise to Nigerians. This rejuvenation of the change managers in the power sector also brought with it a change in the name of NEPA to a new one: Power Holding Company of Nigeria (PHCN). The change of name of

NEPA to PHCN heralded the unbundling and privatization process in the power sector under the auspices of the Bureau of Public Enterprises (BPE). A summary of the power sector reform during president Obasanjo's administration (1999-2007) is provided:

### **Power Sector Reforms (1999-2007)**

The power sector in Nigeria during the period 1999-2007 had the following main objectives as follows:

- Promote competition to facilitate more rapid provision of service throughout the country;
- Create a new legal and regulatory environment for the sector that establishes a level playing field, encourage private investment and expertise, and meet social goals;
- Unbundled the National Electric Power Authority (NEPA); and,
- Privatise the successors to NEPA and encourage them to undertake an ambitious investment programme.

A National Electricity Policy Draft was approved in March 2001. The Draft outlined a three-stage legal and regulatory reform of the power sector as follows:

**Transitional Stage** - Private power generation through Independent Power Producers (IPPs) and Emergency Power Producers (EPPs); corporate restructuring and unbundling of NEPA through sale or license of all thermal plants to private operators and the subsequent privatization through the transfer of management, ownership and control of distribution companies; establishment of transition market rules based on bilateral contracts between generators and distributors; establishment of a Special Purpose Entity (SPE) to take over NEPA's legacy debt, pension fund, unpaid taxes and PPA liabilities; establishment of a multi-year tariff order containing comprehensive tariff charging principles and formulae; establishment of the Nigerian Electricity Regulatory Commission.

**Medium Term (3 to 5 years after the unbundling and privatization is completed)** - Competition among generating companies; energy trading between generation and distribution companies; sale of energy by companies generating power in excess of their needs to distribution companies.



**Long-run Competition Structure (Beyond 5 years)** - power generation, transmission and distribution companies will be operation optimally; economic pricing of electricity to cover the full costs of supply; opportunity for large industrial consumers to choose their suppliers.

### **Electric Power Sector Reform Bill:**

The Electricity Power Sector Reforms (EPSR) bill that will provide the legal backing to the power sector reforms was adopted by the Senate and the House of Representatives in February 2005, and has been signed into law by President Olusegun Obasanjo in 2005. The promulgation of the Bill into law opened the way for jump-starting the following processes:

- The legal unbundling of NEPA into new business units;
- The establishment of an Independent regulatory agency;
- The establishment of a Consumer Assistance Fund to ensure the efficient and targeted application of subsidies to less privileged members of the society;
- The establishment of a Rural Electrification Agency to manage the Rural Electrification Fund to ensure a separate but equally focused application of subsidies for rural electrification projects.

### **Rural Electrification**

The nationwide rural electrification program aimed at connecting all Local Government Headquarters (LGHQ) and some other strategic and important towns and villages to the national grid. The program was conceived by the Federal Ministry of Power and Steel in 1981, The program however suffered a setback due to inadequate funding, in the mid 1980's the program was revisited and restructured in line with geographical accessibility to grid connecting points and facilities such as transmission and distribution lines.

### **Programme Implementation**

In order to take care of some of the problems noticed in the earlier attempts in rural electrification, the Implementation Committee on Rural Electrification (ICRE) was formed in 1989, for the purpose of implementing the Federal Government's sponsored rural electrification program.

For a period of ten years (1989-May1999) a total of 340 projects were

completed. However, from May 1999 to May 2007, a total of over 450 electrification projects were completed. States like Lagos, Ekiti, Ogun, Ondo, Edo, Osun, Oyo, Kwara, Imo, Jigawa, Delta, Enugu, and the FCT Abuja have between 75% and 100% of their Local Government Headquarters (LGHQs) connected to the national grid, States like Bayelsa, Taraba, Zamfara, Borno, Rivers, Kebbi, and Yobe have under 50% of their LGHQs connected to the national grid.

As at 2005, there were about 1,200 on-going electrification projects on the program nationwide at various stages of completion. Out of the 774 LGHQs, 580 have been electrified and connected to the national grid. The remaining 98 LGHQ towns are yet to be connected.

### **Independent Power Plants (IPPs)**

The Nigerian government under president Obasanjo (1999-2007), made effort to increase private participation in the electric power sector by commissioning independent power producers (IPPs) to generate electricity and sell it to PHCN, Independent Power Plants (IPPs) under construction as of 2005 include the 276-MW Siemens station in Afam, Agip's 450-MW plant in Kwale, Exxon Mobil's 388-MW plant in Bonny, ABB's 450-MW plant in Abuja, and Eskom's 388-MW plant in Enugu. Several state governments have also commissioned oil majors to increase generation including Rivers State, which contracted Shell to expand the 700-MW Afam station. The Obasanjo's administration also approved the construction of four thermal power plants with a combined capacity of 1,234 MW to meet its generating goal of 6,500 MW by 2006:

### **Electricity Tariffs**

There were, by 2000, three tariff groups, namely, low voltage residential group (230V and 400V supply), low voltage small commercial and light industrial consumers (230V and 400V supply), and high voltage large residential /commercial/heavy industrial (6,6-330 kV) and street light (230 and 400V) group. Each group was further sub-divided, with different demand and energy charges for each sub-group. The applicable tariff rates are generally too low to support a profitable operation of the electricity supply system.

## **Institutional Framework**

The then Ministry of Power and Steel (now renamed as: Ministry of Energy and Power by President Yar Adua in 2007) is responsible for policy formulation. NEPA, now PHCN is the operator in the electricity sector. The Obasanjo's regime also renamed NEPA to Power Holding Company of Nigeria (PHCN) , and separated it into eleven distribution firms, six generating companies, and a transmission company.

**The Nigerian Electricity Regulatory Commission (NERC)** was established by law to serve as the regulator of the electricity sector. It was set up in March 2005, by the Electricity Power Sector Reform Bill 2005. The principal objectives of the NERC are:

- i. To maximize access to electricity services, by promoting and facilitating consumer connections to distribution systems in both rural and urban areas,
- ii. To ensure that regulation is fair and\_ balanced for licensee, consumers, investors and other stakeholders.

To date, Nigeria has financed its energy sector mainly with loans from bilateral and multi-lateral lending groups. On the other hand, this has provided only a small fraction of people, mostly concentrated in urban areas/centers, with adequate energy services, to the detriment of the rural populace.

## **Renewable Energy Resources**

Nigeria is blessed with reasonably high quantities of a variety of primary renewable energy resources. The renewable energy resources of the country are well distributed throughout the country. These large bodies of water for hydro power generation, sunshine for solar power generation and strong winds for wind power generation,

### **Hydro power source**

The country is well endowed with large rivers and some few natural falls which are together responsible for the high hydropower potential of the country. The Rivers Niger and Benue and their several tributaries constitute the core of the Nigerian River system, which offers a renewable source of energy for large scale (greater than 100 MW) hydropower

development. The Kainji (on river Niger) and Shiroro dams respectively are Nigeria's large scale reservoirs for hydropower generation. Others are Goronyo and Bokolori dams on rivers Sokoto and Rima respectively, and Mambila and Gurara falls. In addition, several sources of small rivers do exist and can be harnessed for small scale (less than 10 MW) hydropower projects. The total technically exploitable large scale hydropower potential of the country is estimated at over 10,000 MW, capable of producing 36,000 GWh of electricity annually. Only about one fifth of this potential had been developed as at 2001. The small hydropower potential is estimated at 734 MW.

### **Solar**

Nigeria lies within a high sunshine belt and, within the country; solar radiation is fairly well distributed. The annual average of total solar radiation varies from about 12.6 MJ/m day in the coastal latitude to about 25.2 MJ/m<sup>2</sup>-day in the far North. Solar radiation intensities range from 3.5-7.0 KWhm day and sunshine duration ranges from 4.0 to 9.0 hours/day.

### **Wind**

It is estimated that Nigeria has annual average wind speed of 10m heights and it varies from 3m/s in the coastal areas to 7m/s in the far North with less vegetation.

### **National Policy Position on Renewable Energy Development**

The key elements in the national policy position on the development and application of renewable energy and its technologies are as follows (Iloeje, 2002):

- to develop, promote and harness the renewable energy (RE) resources of the country and incorporate all viable ones the national energy mix
- to promote decentralized energy supply, especially in rural areas, based on renewable energy resources
- to de-emphasize and discourage the use of wood as fuel
- to promote efficient methods in the use biomass energy resources
- to keep abreast of international developments in renewable energy technologies and applications

## Renewable Energy Projects in Nigeria

According to Iloeje (2002), following a survey of activities in solar PV in the country up to 1999 a total of 316 installations amounting to 238.8kWp<sup>7</sup> were identified nationwide. Based on installed capacity, the percentage distribution of installations over various applications is as shown in the table 1 below.

**Table 1; Applications for solar in Nigeria**

S/N	Solar PV Applications	% by Capacity
1.	Residential (mostly lighting)	.9
2.	Village Electrification & TV	3.9
3.	Office/Commercial lighting & Equipment	3.1
4.	Street, Billboard, etc, lighting	1.2
5.	Industrial	0.4
6.	Health centre/clinic	8,7
7.	Telecom & Radio	23.6
8.	Water pumping	52.2
<b>Total</b>		<b>100</b>

**Source:** *Nigeria: Country Report for Regional Policy Based On "Increasing Access to Energy Services for Populations in Rural and sub-Urban Areas in Order to Achieve The Millennium Development Goals" Prepared by Kite, for UNDP-REPP & Ecowas, October, 2005.*

Financing of the installation came principally from the Federal Governments, State and Local Governments, European Union and Mobil. Some installations especially in the Lagos area were funded by private persons.

## Commercial Activities in Renewable Energy

As at 2005, significant commercial activities in renewable energy technology were limited to solar photo Voltaic (Soiar PV) development and usage. A national survey by the Energy Commission of Nigeria (ECN) reveals a total of 33 companies that were active in Solar PV by 1999 activities. Most of them were established within the last ten years. All of them were vendors or contractors for the supply and/or installation of solar-PV equipment and systems, with some of them representing foreign

manufacturers. There was, and still is, no local manufacture of the major solar-PV system components including modules controllers, inverters and solar batteries. The only key system components that are locally produced are such Standard electrical components as cables, switchgear, overload protectors and consumers units.

Nevertheless, the nation's renewable energy research and development centers of the ECN hosted at some selected Nigerian Universities; including the Usmanu Danfodiyo University Sokoto (UDUS) and the University of Nigeria, Nsukka, developed several prototypes of renewable solar energy products and devices which include solar cookers, solar dryers, solar water heaters and solar stiles. Others are solar PV applications, biogas digesters and stoves as well as wind electricity converters most of which are ready for mass production and commercialization. In addition, in November 2005, the ECN concluded the development of the national renewable energy master plan.

### **Regulatory and Institutional Framework**

The primary governmental agency for the development and promotion of Renewable energy technologies in the country is the Energy Commission of Nigeria (ECN) Its mandate includes strategic energy planning; policy co-ordination and performance monitoring for the entire energy sector, laying down guidelines on the utilization of energy types for specific purposes; developing recommendations on the exploitation of new sources of energy. Renewable Energy is therefore a component of its mandate (Iloeje, 2002).

Furthermore, the ECN is responsible for the entire nation's energy research and development centre located in some selected Nigerian Universities. President Obasanjo created three new additional needless energy research centers on hydropower, petroleum studies as well as on energy efficiency and conservation approved by government but are yet to take off. In addition to these energy research and development centers, there are also: the Petroleum Technology Institute (PTI) located at Effurum in Delta State, a College of Petroleum Studies (CPS) located in Kaduna and a full-fledged University of Petroleum, while the Petroleum Technology Development Fund (PTDF) is responsible for funding of

human resources and institutional capacities building for the Nigerian oil and gas sectors.

Curiously enough, the Nigerian National Petroleum Corporation (NNPC) has created a Renewable Energy Division (RED) within its operations and management structure, with a Group General Manager as its head. This is an indication that the corporation is proactive in positioning itself to participate in the race for renewable energy development and energy sources diversification strategy. How this vital Division is going to be accommodated in the current drive to unbundled the NNPC is not yet clear.

### **1.6 The Rationale for the Nigerian Power Sector Reforms**

Recent energy sector reforms in Nigeria are simply following global trends. Government dominance is giving way to private sector led energy supply systems. Combination of factors including fiscal pressures, environmental consideration, efficiency and the need to attract private sector investment has led to the paradigm shift. Energy sector reforms in Nigeria started tentatively with the adoption of Structural Adjustment Programme (SAP) in 1986.

However, it was not until the enactment of the Electric Power Sector Reform Act in 2005 that significant momentum was achieved in the electricity sub sector. The ongoing reforms in the nation's power sector which started in 2005 thus constitute a U-turn or policy reversal for the sector. Gross inefficiency in the sector, the heavy dependence on government treasury, rapid technological development and trends in the management of electricity sectors of other countries were the major motivating factors for the reforms,

The rationales for power sector reform are widely recognized. Broadly speaking, the rationale that is claimed for power reform is the legendary poor supply of electricity in Nigeria to high levels of power and revenue losses, both technical and non-technical. Specifically stated rationales include but not limited to: First, power sector reforms is expected to lead to reduction in costs, including short term power and operation costs through efficiency gains, arising from economies of scale as larger-scale plants are enabled by larger markets (World Bank, 2008

and Eberhard, 2003). This will lead to improved supply conditions (World Bank,2008), including better reliability and security of supply due to access to imports during emergency situations (Eberhard, 2003).

Power sector reforms can also foster development of country-level electricity markets by allowing sufficient scale to support increased competitive participation (UN-DESA, 2005). There are other social and environmental benefits including improved access to electricity, reduced environmental impact from air and water pollution, and displacing biomass which is often associated with deforestation (Eberhard, 2003).

Furthermore, the complementarity of private investment will reduce fiscal strain on government in an environment of competing attention for government lean resources. Power sector reforms have also allowed countries engaging in the process to build new skills, develop and strengthen regulatory institutions to oversee and manage the power sector reforms.

In addition to the direct positive effects, indirect benefits of power reform include wider economic benefits as efficiencies flow on through the economy (including stimulation to local economies in the construction phases; development of value chain, and improved productivity throughout the economy. UN-DESA, 2005),

### **1.7 Problems and Challenges of the power sector reform**

According to Iwayemi (2008), Nigeria's electricity crisis is striking for a variety of reasons. First is its occurrence despite the enormous endowments of non-renewable and renewable primary energy resources. The resource endowments of crude oil and natural gas currently estimated at 35 billion barrels and 185 trillion cubic feet, respectively, are more than adequate to fuel much of Sub-Saharan Africa (SSA) energy demand for several decades. Second is that coal reserves are also substantial at 2.75 billion metric tons. Also, large amount of renewable energy resources including hydro electricity, solar, wind and biomass energy are present. One of the many paradoxes in Nigeria is energy/electricity poverty amid plenty. Third, despite being a world ranking exporter of liquefied natural gas (LNG), Nigeria's gas-dominated electric grid experienced frequent collapse linked largely to inadequate



gas supply.

Power sector reforms are however confronted with a number of important challenges (Adenikinju, 2011). First, the coalition of opposing interests group, such as stand alone generator suppliers, diesel dealers, staff of electricity agency and contractors to the electricity utility, may prove very difficult. Second, in an environment of poverty, unemployment and high inequality, it is also difficult to initiate power sector reforms that will most invariably lead to increase in energy prices and higher energy expenditure for households and businesses. Hence, issue of equity must play an important role in any successful reforms.

Third, is the problem of transparency and credibility of government officials. This has two perverse effects. First, potential investors are doubtful that government will be committed to reforms and hence hold up on making investment. Second, consumers are also distrust of the good intention of government to deliver on their promises.

Needless to say, what happened to the power sector reform process and the results obtained between 1999 and 2007 is now history. For example, between 1999 and 2007, the administration of former president Obasanjo sunk about \$6,3bn trying to find solutions to the lingering national power shortages but all in vain. Paradoxically however, the conditions of electricity supplies in Nigeria by May 29 2007 were worst than they were on May 29 1999. Therefore, the mismanagement of the funds for public power sector infrastructures by public officials and their private sector collaborators is having a knock-on effect on the national economy; the failure to address Nigeria's infrastructures constraints are jeopardizing economic progress and prospects and thus affecting the wellbeing of Nigerians. Probably that is why President Yar Adua declared a national emergency in the energy and power sectors respectively.

All the challenge for the Reforms process rally around the issue of transparent and accountable governance and management of the sector. Therefore the bodies responsible for carrying out the Reforms have the following challenges and need to answer the following questions in addition to those spelt in their terms of reference:

- a. How do we meet growing national demand of electricity supply?

- b. What new kinds of power sources are available for development within our national boundary?
- c. How do we provide higher-quality, cost-competitive and sustainable light powered by both renewable energy or mechanical sources and fossil-fuel based sources?
- d. What are the required legislative and regulatory frameworks that will ensure successful reform and planned restructuring programme of the sector?
- e. What are the necessary new bodies, institutions, organizations and agencies that will constitute the new institutional framework for the restructuring, governance and management of the power sector?
- f. How do we harmonise the roles of the various existing ministries, departments, agencies/parastatals and institutions involved directly and or indirectly, in policymaking process and or policy, programmes and projects implementation in the sector in order to avoid duplication of efforts, conflicts and working at cross-purposes?
- g. Last but by no means the least, how do we safeguard supply security, affordability and the environment all at the same time?

These are very difficult questions to answer by the Committee and therefore need national debate and consensus to find acceptable answers. Therefore, to help encourage greater understanding and discussions toward solutions, the Committee needs to establish broad national interactive discussions and industry-specific stakeholders' consultative forums respectively. This will make the citizens and the corporate stakeholders (consumers and investors respectively), to be part of the processes of finding solutions to meeting the power demands of individual homes, offices and industries etc. Only then can we understand the problems of our national power needs and the solutions to them. General public and industry level interactive discussions and dialogues should develop portfolios of power sources that can be tapped to provide electricity power to homes, offices and industry today, through 2020 and beyond. This dynamic, holistic and systematic approach is the most preferred one leading to the solutions to be proffered.

However, putting the above questions in perspective, the most

pernicious problems hunting deregulation and liberalization of the Nigerian modern economy and markets - namely utter inadequacy of modern regulatory structures to cope with the shape of 21<sup>st</sup> century economic transformations taking place under the strong influence of globalization processes. For instance, the Nigerian regulatory agencies and personnel are generally ill-equipped and lack human resources capacity and competence to understand how energy and electricity markets work; being new to regulatory regimes. Therefore, the attentions of the Power Sector Reform Committee and the higher authorities at the National Energy Council (NEC) respectively, need to be drawn to this very important concern.

### **A Review of the existing Institutional Framework**

The existing institutional framework for the sector's decision-making processes; governance and management needs to be re-engineered and harmonize in order to establish a systematic, seamless and holistic approach to issues and problems of the sector. For example, we now have a situation where the following major ministries, departments, agencies and institutions all have one thing or another with policy and decision-making processes, projects and programmes design, supervision, monitoring and evaluation in the power sector as the case may be:

1. Ministry of Energy and Power - the main mother Ministry;
- 2, Ministry of Science and Technology; responsible for Research and Development (R&D) in the energy and power sectors respectively;
3. Ministry of Agriculture and Water Resources: deals with large dam reservoirs for hydropower generation;
- 4, Ministry of Mines and Steel Development; responsible for coal mining policy, operations and regulations;
5. Ministry of Environment, Housing and Urban Development; responsible for regulations relating to hazardous waste and gaseous emissions from power generation activities etc;
6. The National Assembly; responsible for legislation, budgetary approvals and general oversight of the activities in the sector.

The sector is also heavily influenced by decisions of bilateral and multilateral organizations, agencies and governments. For example, over

the years, the World Bank and the International Monetary Fund (IMF) have been playing active roles in influencing public policies in the sector. These myriad stakeholders in the power sector need proper coordination in order to have a well organized, focused and seamless flow of policies, programmes and projects for sustainable development of Nigeria's energy and power sectors respectively.

### **1.7.1 The Problem of Transparency**

Effective monitoring and supervision of the power sector has been made needlessly difficult and shrouded in secrecy through over-centralization of administration of the sector. As pointed above, the top-down model of electricity governance in Nigeria encourages corruption and other illegal dealings. Despite the reforms, the electricity sector of Nigeria has continued to wallow in endemic corruption. The on-going trial of the Chairman and other commissioners of the NERC and that of the officials of the REF and some of the members of the National Assembly have shown that beyond reforming the governing laws and rules in the sector, there is need for institutional reform and the purging of current corrupt attitudinal dispositions of officials if the reforms will have any impact. It goes without saying that if Nigeria scales the hurdle of creating a vibrant electricity regime under the new legal framework, the social obstacles and challenges of managing and sustaining it will remain due to debased social orientation of infectious, systemic corruption, (Eggert, 2001). Available literature shows that this problem is not easily surmountable in Nigeria and other African countries due to unending communities' agitations over the distribution of benefits from energy resources, (Dias, 1999). Both the regional (NEPAD5 2001) and national instruments also acknowledge the difficulties of not only effective distribution but also of the utilization of benefits from energy resources in a sustainable way. It has also been empirically established that resources and civil conflicts are inseparable in developing countries, (Ross, 2002). The structural arrangement under the current electricity regime makes for the perpetration of institutionalized corruption due to (over) centralized governance arrangement. This further justifies the arguments for decentralized electricity governance systems.

The power sector of Nigeria arguably stands in closer proximity for corruption like the oil and gas sectors. Not only because of the seeming overwhelming evidence of institutional improprieties in the energy sectors generally; but more for the fact that electricity sector is the most versatile and widely used form of energy in Nigeria, (Mohinder, 2007). The nature of the electricity sector and inherent danger of the current centralized regulatory framework in Nigeria made it possible for the 'larger-than-life' image and influence of the defunct NEPA.

The extent of corruption in the electricity sector as well as its manifestations varies from country to country depending on local peculiarities. In developing countries like Nigeria and its African counterparts, areas like government policies, investment and financing decisions, customer-interfacing activities, and commercial operations of the utilities, procurement, and human resource management are potential avenues for corruption and operational ineptitude. Nigeria would also need to avoid or direct its institutional strategies in the energy sector by attuning to the crucial need to tighten the loose ends on the above areas and those to be subsequently identified.

In the case of Nigeria, the combined effect of State monopoly despite a semblance of liberalization portrayed under the new regime provides fertile ground for inefficiency and corruption in the electricity sector of the country. A strictly state-controlled electricity governance model should ordinarily be unacceptable in a sector questing for active private sector funds. Not only does it encourage corrupt tendencies, state control also cripples genuine growth and competitiveness of the sector as it creates disincentives to genuine and innovation-driven competitions. Rather than centralized state domination or governance, a model like DEOPs that stimulates active participation of the stakeholders in the electricity sector should be embraced to bring about economically rewarding, viable and sustainable electricity regime in Nigeria.

### **1.8 Successes of the power sector reforms**

One of the successes of the power sector reform is the establishment of an agency, known as the Rural Electrification Agency (REA), which is a body corporate capable of suing and being sued in its corporate name.

The REA administers the Rural Electrification Fund (REF), a designated fund to promote, support and provide rural electrification programmes through public and private sector participation in order to: (a) achieve more equitable regional access to electricity; (b) maximize the economic, social and environmental benefits of rural electrification subsidies; (c) promote expansion of the grid and development of off grid electrification; and (d) stimulate innovative approaches to rural electrification; provided that no part of the Rural Electrification Fund shall be used as subsidies for consumption, Ubi (2012).

According to Adenikinju, (2011), the Jonathan administration had in 2011 released the Power Sector Road map, which provides the barometer for the much expected improvement in the sector. The roadmap aims, as its short term objective (up to April 2011), to ensure substantial increase in the quantum of power delivered to the people and ensure that while the supply of power will not only be significantly greater than ever before but that it will also be much less erratic and unpredictable power cuts. In its short to medium term objective, the power roadmap seeks to ensure increase in generation, transmission and distribution capacities so as to enforce "a substantial degree of spinning reserve that will allow the System Operator to maintain generation levels at a relatively steady level instead of being tempted into running all the available machines flat out."

In that regard, government expects to ensure that System Operators and the various distribution companies undertake strategic and predictable load-shedding practices. The government intends to ensure a steady increase in available power and predictable level of electricity distribution across the country. During the medium term period, the government expects to reduce the medium term originally expects a substantial reduction in the Government's funding and managerial direction of key elements of the power chain, in the expectation that the system operators would have become largely privately owned. By December, 2013, when the medium term part of the roadmap would have come fully on stream, the government expects to have doubled the total quantum of power delivered to electricity consumers across the country. The government also expects to have completed the long overdue NIPP

projects for generation, transmission and distribution; the completion of the outstanding (and already budgeted) PHCN projects and the completion of the outstanding (and already budgeted) Nigerian Gas Company (NGC) investments in the gas supply and transportation industry, (Aderukinju, 2011).

Another achievement of the power sector reform was to facilitate industrialization as energy products were seen as critical inputs into the production process. This is actualized through the participation of the bidding firms will be asked to bid on how to reduce losses.

By these reforms, the monopoly hitherto enjoyed by erstwhile National Electric Power Authority (NEPA) for several decades has been abrogated, as the democratic regime aims to liberalize the sector.

### **1.9 Recommendations**

The current global trend is for private sector to be directly involved in the power generation and distribution since Governments have proved incapable of doing such business successfully. The private sector should therefore take up the challenge through the advantages provided by the deregulation policy and come fully on board now because the market is indeed large and very profitable. The reforms new prepayment methods should be encouraged for poor people to choose and monitor how much they wish to spend on electricity each month.

Establishment of local factories for the production of standard and quality electrical equipment and materials. Until we are able to produce most of the required electrical materials and equipment locally, we cannot expect to be where we should be. The present available generation level of less than 10,000MW no doubt makes the establishment of powerful manufacturing factories expensive (or impossible) to operate locally. The signs that the present administration will keep the trend of genuine commitment to accelerated power sector development is enough to make us believe that we shall exceed the 15, 000MW projection for 2010.

Private entrepreneurs should therefore be challenged to take advantage of the emerging new power sector environment for active participation in the production of power stations and other electrical equipment and materials for the local market primarily as well as for the

African market. The market potentials are too enormous. The immediate factories shall be for the following electrical material and equipments:-

- a. Insulators up to 330kV
- b. Line fittings up 330kV
- c. Cables up to 33kV and bare conductors
- d. Instrument transformers
- e. Relays
- f. Lightning Arresters
- g. Switchgears -indoor and outdoors
- h. Transformers etc
- i. **1.9:i Decentralized Energy Options: the way forward in Nigerian Power Sector Reform**

The concept of “Decentralized Energy Options [DEOPs]” centers on holistic approach to sustainable energy policy for the developing countries. It advocates decentralization of the governance structure, multiplication of the means of production, availability of affordable options and devolution of governance, control and management responsibilities. One major problem with the regulatory and governance frameworks of electricity in Nigeria and other countries in Sub-Saharan Africa is over-centralization of management responsibilities and administrative structures. Adoption of decentralized governance models have helped in repositioning the energy and natural resources sectors of several countries world over. The driving force varies from one country to another. In countries such as Kenya, the United Kingdom, and in Latin America, privatization of electricity has provided a means of attracting funds from the private sector to relieve the burden of inadequate government funding or subsidy in the electricity sector.

Prior to the reforms, funding of the power sector has been centralized through a top-down funnel structure from the Federal Government like in Kenya and Nigeria. The reform process in Kenya brought about a policy shift that aligns with the general trend of privatization and decentralization in the energy and other sectors to attract foreign capital and increase competition. However, in the case of Nigeria, while emphasis is placed on the need to liberalize the sector to



stimulate private sector involvement; the governance structures and institutions put in place to manage the process would appear inadequate or improperly positioned to achieve desired objectives compared with Kenya.

In Kenya for example, the widespread introduction and adoption of renewable energy technologies is made national priority on virtually every national development policy agenda, (Acker, 1996). No similar policy exists in Nigeria because the electricity regime in the country seems to place strong emphasis on revamping the old order under the defunct NEPA under the new PHCN and the regulatory frameworks provided by the NERC. The benefits of renewable energy and decentralized energy options have neither been articulated nor maximized in the current electricity regime in Nigeria unlike in Kenya.

The availability of renewable energies or alternatives is vital to the provision of low-cost, affordable and regular electricity for industrial development, employment generation and poverty alleviation in Nigeria and other the developing countries in Sub-Saharan African. Renewable energies are a means of decentralizing the available energy sources or options in the country. If vigorously embarked upon, it would help Nigeria create the much-desired national energy sufficiency as well promote positive environmental consciousness and values,

Renewable and decentralized energy options are not without challenges, but their positive effects outweigh attendant difficulties of adopting these options. For example, Kenya's effort in renewable and decentralized energy options have been very mixed; a story of a few successes amidst many failures. Kenya did also tread the path Nigeria is currently journeying in electricity. It had focused on urban electrification by relegating rural electrification to secondary importance. This is due to the notion that the rural people consume less electricity compared to urban dwellers which makes rural electrification even less profitable to investors. It also has its initial set-backs typical of developing countries as electrification was frequently used as reward for constituent support at electioneering. In some cases, projects often reflect haphazard and inefficient patterns that bear no relationship to local needs or ability to

profit from grid connection (Walubengo, 1992). The licensing processes were also made cumbersome due to needless hurdles of bureaucracy and politics, (Acker, 1996).

Decentralized approach to energy resource management is suggested for Nigeria being a practical and functional approach to energy sustainability. It involves the transfer of responsibility for planning, management and allocation of resources from the central government and its agencies to units and agencies at the state or local government levels. Functional approach to decentralization of electricity management responsibilities will also help in mitigating the negative impacts of remoteness of the central government of Nigeria from the local communities. Against this backdrop, the electricity governance regimes in Nigeria would need to reflect the three-tier planning model in line with the political structure of the country. This necessarily makes it expedient to enhance the roles being played by the 774 local government councils of the Nigerian federation. The Local Government structure is crucial to the implementation of decentralized electricity governance systems in Nigeria being closest to the local or indigenous communities.

### **1.9: ii Lessons from other countries**

Over the years, especially starting from the early 1990s, a set of institutional reforms - including unbundling, privatization of ownership, and the introduction of competition into the power generation sector - began to be promoted particularly by the World Bank and the International Monetary Fund (IMF) among other neo-liberal schools of thought, as a global solution to the problems of the energy and electricity industries. This rethinking of development policies that emerged from the neo-liberals schools of thought and generally referred to as the "Washington Consensus" paved the way for the concurrent movements of unbundling, private ownership and competition (or at least de-monopolisation) of the energy and electricity or power sectors. In the power sector, the aim is to rationalize the sector's development by treating electricity as a commodity in need of optimal resource allocation.

Therefore, energy and power liberalization advocates maintain that governing the electricity industry according to market dynamics, rather

than socio-political and other considerations, promises to result in the sector's more efficient operation and dynamism. Furthermore, energy and power liberalization advocates also argue that there are additional important social and environmental benefits if the sectors are liberalized. However, according to studies of the experiences with power liberalization around the world, reports indicate frequent price hikes, unreliable service, employment loss, and reduced access, particularly for the poor as the norm.

Therefore, the other question is: Are there lessons to be learned from other countries? Of course yes, there are many but care must be taken in choosing which experience to adopt and or replicate. Moreover, in order to avoid knee-jerk reactions to the problems of Nigeria's power sector, the new power sector reform initiative of President Yar Adua need to learn quickly but diligently from the mistakes of the immediate past in the sector and from the successes recorded in power sector reforms efforts of some other countries, taking into considerations Nigeria's own peculiarities.

The Power Sector Reform Committee can draw inspiration for example, from many countries of the organization for economic cooperation and development (OECD) - the world's leading industrially most advanced nations, have carried out major reforms of their power sectors in the last 30 or so decades. Also, some mid-level emerging industrializing countries outside the OECD have similarly carried out some power sector restructuring in the last decade or so. Therefore, there are ample international opportunities from which Nigeria can learn from their respective experiences. For example, there are a number of successful power sector regulatory regimes and institutional frameworks for governance and management of the sector to adopt and or replicate with some modifications to suite Nigeria's socio-economic and geopolitical peculiarities. There are both European and non-European models to select from; ranging from models with governmental strong involvement in the sector (e.g., the French model) to models with very minimal governmental involvement in the sector (e.g., USA).

France is both a member of the OECD and the Group of Seven (G7) -

the seven most industrially developed countries of the world but with the government playing a dominate role in its energy and power sectors respectively. For instance, the French government owns all its nuclear power plants under the state-owned Areva group. France obtains 80 per cent of its electricity generation capacity from its nuclear power plants (We are not advocating for nuclear option for Nigeria at present). Recently, France's President Nicolas Sarkozy is looking at creating a clear world leader in nuclear power through restructuring of the state-owned nuclear group, Areva (Financial Times (FT) of London, September 2007).

### **1.9: iii Innovative Investment Framework**

Nevertheless, the Committee on power sector reform need to recognize that the nature of electricity power from both conventional and non-conventional sources and technologies is that power generation, transmission and distribution projects have high fixed costs whether done by the government or privately financed. Therefore, the Committee need to fashion out comprehensive and integrated power development investment framework that brings the governments, the public and private investors together under mutually beneficial arrangements in the power sector. This will require addressing a major flaw in the public policy making process facing the country in general and the energy and power sectors specifically. For example, private investors in the power sector have been effectively crowded out by public investment and public policy inhibitions.

Here again, the Committee can look at what some countries are doing in order to solve similar situation facing their countries. Russia for example, is said to be "prepared to allow foreign companies to control up to a quarter of its electricity generation industry, according to Anatoly Chubais, chief executive officer of state-owned electricity monopoly United Energy Systems (UES), Coincidentally, just as the Nigerian government officials claim that it has been estimated that Nigeria requires an annual infrastructure investment ranging between \$6 and \$9 billion US dollars every year, Mr Chubais claims that Russia's power industry needs \$120 billion dollars to finance its investment plan. More than \$15 billion dollars of the estimated \$120bn will be utilized to build new power

stations and upgrade Russia's aging electricity networks. The amount is to be raised from international investors; already about \$8bn had been secured, he said, through listings of some of the electricity companies and sale of stakes to strategic investors, including foreign energy companies such as Fortum of Finland and Enel of Italy (Financial Times of London September 2007).

Again, France provides us another example of a western European government that is partnering with the private energy and power companies to boost the status of its national power- industry. For instance, France has recently acquired shares from a private energy and environmental group, Suez, For instance, Suez was literally forced by President Sarkozy to jettison its environmental portfolio in order to jointly create a \$97bn power group with the French government owned Gaz de France (GDF)J Therefore, GDF-Suez, formed with the assistance of Mr. Nicolas Sarkozy, the French President, is thus, the new “French led energy champion” of Europe (Financial Times of London, September 2007). Thus, opening up the power industry to local and foreign investors alike, allows for inflow of both the desired money and modern technology into the sector.

#### **1.9: IV Mainstreaming of Renewable Sources of Energy and Power**

In addition, the problem of Nigeria's public policy impotence in the energy and power sectors has been exacerbated by the fact that over the years for example, coal, solar and wind power have not been accorded their rightful roles in the energy and power mix of the country. Even though, behind the scenes, there are many policy analysts who clearly recognize the issue of mainstreaming of these alternative sources of energy and power - and accept the need for public policy makers to incorporate them in the nation's energy and power mix, such moves usually receives cold shoulders and undoubtedly provoke plenty of resistance from entrenched special interests and rent-seekers who are benefiting from the existing flat-footed arrangements or status quo. One wonders if gas is the only ingredient for electricity generation; coal is plentiful in Nigeria, why not use more of it? For example, in 2000, the United States derive 40 per cent of its power supply from coal i.e.

260,990MW of power.

Furthermore, Germany is now reckoned as the global leader in terms of mainstreaming of the renewable through its very successful Feed-in-Tariffs (FIT) mechanism or system. Through the FIT mechanism, Germany has 200 times in solar power capacity and 10 times the wind energy capacity of Britain, in spite of the British having more wind than the Germans (The Guardian Newspaper of London, 2007). Germany already generates 13 per cent of its electricity from renewable sources.<sup>8</sup> Also, wind power is the fast growing renewable energy source in the UK (Scotland and Wales in particular) largely as a result of generous government incentives under its Renewable Obligation (RO) that stipulates that, by 2010, 10.4 per cent of total sales of electricity must be from renewable sources, rising to 15.4 per cent by 2015.<sup>9</sup> Therefore, in line with this policy requirement, the UK government therefore tweaked its £50Qm (\$billion) annual subsidy for renewable energy.

In addition, in the UK, at the national level however, government is encouraging energy companies to use a wide range of technologies for new power generation, including renewable such as wind and biomass, A “clean coal” stations, which capture and their carbon dioxide emissions, and nuclear power.<sup>10</sup> Furthermore, at the local authority level in the UK, one of the few genuine drivers of renewable energy technologies is the local authority policy that is called “Merton rule,” which is named after the London borough that established it in 2003. Basically what the “Merton rule” requires is that, any new building must reduce its carbon emission by 10 per cent through the use of renewable. On the Continental level, member states of the European Union (EU) are required to generate one-fifth of their power from renewable by 2020. Again, the United State's House of Representatives approved a new legislation (Renewable Energy Standard - RES) which require all publicly traded utility power companies to generate 15 per cent of their power from clean sources, such as wind-mills and solar panels, by 2020.

It is pertinent therefore, that national policy makers (particularly the National Energy Council) recognize this very important emerging policy development and take a cue from other nations and start to do something

about it; learning from global experiences. Interestingly, the Nigerian National Petroleum Corporation (NNPC) has created a Renewable Energy Division (RED) within its operations and management structure, with a Group General Manager as its head. However, another very important emerging public policy issue (n the energy and power sectors that deserves the attention of the National Energy Council is subsidy switching from non-renewable to renewable. For example, according to a think tank, the New Economics Foundation (NEF), cutting subsidies for fossil fuel projects and switching the funding to renewable energy could lift millions out of poverty as well as help alleviate global warming. Moreover, the NEF concludes that "the combination of climate change and oil scarcity means that without a major shift to renewable, targets to reduce poverty will not be met.

Furthermore, the NEF report says that “renewable energy could more than meet growing global energy demands and has the potential to increase its share of global energy by around 120 times”. However, it says that this can only be achieved by removing the massive subsidies that fossil fuels currently receive. The Report quotes figures suggesting that fossil fuel energy received US\$73 billion per year in advanced OECD nations between 1995 and 1998, with a further US\$162 billion of subsidies to fossil fuels in non-OECD nations. This makes a total of US\$235 billion every year during this period. Therefore, there is the need for the Federal Executive Council (FEC) to enhance the economic policy making apparatuses of the nation to be holistic and forward looking in its approach to energy and power subsidies agenda setting. The issue of subsidy is examined next.

### **1.9:v Cost Implications of Security of Supply of Electricity and Mainstreaming Renewable**

It is very important for the National Council on Energy to pay serious attention to the fact that achieving energy and power supply self-sufficiency in Nigeria does not come about cheaply; it involved huge financial outlays in terms of capital investments and monetary and non-

monetary incentives packages. In particular, mainstreaming renewable sources of energy and electricity entails huge public financial support at the beginning. For example, the UK government subsidizes renewable energy to the tune of £500m (\$1 billion) annually. Similarly, in Germany, the government subsidies for renewable energy are in the region of US\$5.5 billion a year. Also, recently the United States House of Representatives passed a Renewable Energy Standard (RES) bill that comes with an approved \$16 billion tax plan that shifts the government's focus away from oil and gas to alternative energy such as wind, solar and biomass production at the expense of traditional sources.

Globally, subsidies for oil, coal gas and nuclear power have totaled in the tens of billions of dollars annually. Subsidies take a variety of forms, including direct support to consumers, direct payments to investors in large and capital intensive projects, tax exemptions, price caps or ceilings and more subtle and indirect forms such as transmission grid support etc. Tables 2 and 3 below, show respectively, the types and annual monetary cost of energy subsidies applied by various governments to renewable and non-renewable energy sources the world over. Table 3, for example, shows that it is mainly in the OECD countries that renewable energy receives subsidies while the non-OECD countries show no subsidies for renewable and end-use. However, this result points to the fact that basically, renewable are not significant in the energy policies of the non-OECD nations.

Also, Table 3 shows that global energy subsidies provided for oil, gas, coal and nuclear power total in the tens of billions of dollars compared to renewable energy sources. This situation is reckoned to help drive the unsustainable fuel mix we see in today's energy markets.

**Table 2: Types of Energy Subsidies**

S/N	Form of Government Intervention	Example
1.	Direct Financial transfer	Grants to producer or consumers, low interest loans
2.	Preferential tax treatment	Rebates, exemptions on royalties, tax credit,



		accelerated depreciation
3.	Trade restrictions	Quotas, trade embargoes, technical restrictions
4.	Energy related services provided by government at less than full cost	Direct investment in energy infrastructure, public R&D
5.	Regulation of energy sector	Demand guarantees, price controls, market access restrictions

Source: UNEP/IEA, 2002

**Table3: The cost annual energy subsidies (1995-98,\$US billion)**

		OECD Countries	Non OECD Countries	Total
1	Coal	30	23	53
2	Oil	19	33	52
3	Gas	6	38	46
<b>4</b>	<b>All fossil fuels</b>	<b>57</b>	<b>94</b>	<b>151</b>
5	Electricity	a)	48	48
6	Nuclear	16	Nil`	16
7	Renewable and end-use	9	Nil	9
8	Non-payments and bail-out	0	20	20
<b>9</b>	<b>Total</b>	<b>82</b>	<b>164</b>	<b>244</b>
10	% global energy subsidies	34%	66%	100%
11	Per capita subsidies (\$/cap)	88	35	44
12	Per capita GDP (\$/cap, 2000)	23,132	3,903	7,316

Source: de Moor, 2001

### Conclusion

In conclusion, the government needs to aim at total overhaul rather than tinkering with existing situations in the energy and power sectors

respectively and the overall national socio-economic and political order. For example, of recent, more facts are gradually emerging that show these two vital sectors as the worst mismanaged sectors of the national economy. For instance, apart from spending over \$6.3bn from 1999 to 2007 in the power sector without tangible results, the sector is still indebted to contractors.

Furthermore, Nigeria's quests for achieving the respective United Nations Millennium Development Goals and belonging to the 20 most developed nations of the world by 2020 under its "Nigeria 2020" strategies are threatened by the crises in the energy and power sector respectively. This fear of failure to achieve these goals is already

Transparency of a process improves the final product, and creates political buy-in. thus public and private stakeholders should be involved and a broad consensus on energy and power sectors reform sought. Therefore, the Federal, States and Local Governments coordinated action can facilitate the reform process. Last but not least, while there is generally broad agreement on the urgent need for reforms, the basic reform principles have been the brone of contention consistently for decades; this is yet to be resolved by the stakeholders to data. The National Energy Council, working with the National Assembly and the Nigeria public need to address this fundamental issue.

Similarly, care must be taken to avoid the reforms and the deregulation process from being hijacked by undeveloped elites who want to use it as drain-pipe, A clear case in mind is that of the former minister of power, Berth Nnaji, who had to resign in Sept 2012 due to various allegation regardless his implementation of the power sector reforms of the Jonathan Administration. To serve as deference to others all those indebted in their reports of National Appraisal Committee that probed the Obsanjo Power Reforms should be prosecuted and summarily dealt with. This is the only way to foretell the primitive accumulation tendency of the Nigeria bureaucratic and ruling elites.

We pray that the companies recently in Sept, 2012, selected by the Bureau for Public Enterprise, as the financially qualified leaders to take over the operator of the Six (6) PHCN subsidiaries, are truly capable in

both financial and technical spheres. This is the only way to avoid the PHCN from becoming another failed privatized public parastatals.

Most importantly, it is our firm belief that the success of the Power Sector Reforms largely depends on the extent to which the generality of the people are carried along from planning to implementation. The top-bottom approach characteristic of most government programmes in Nigeria is greatly responsible for their failure; the masses do not feel responsible or duly bound to maintain and safeguard public utilities because of this alienation. This is deliberate because it is one of the ways by which capitalism grows: creation and entrenchment, of class inequality. The countries in which the Dams, Turbines and Transmission stations are located need to be adequately catered for, and should be given concessional (free) shares in the ongoing privatization of the PHCN, This is the way of forestalling mass uprising against PHCN installations in the future.

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