Reforms in the Power Sector and Implications for Industrial Development in Nigeria: The Case of Difference between Six and Half a Dozen?

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Constant power supply is one of the main catalysts stimulating industrial development to create jobs, fight poverty and improve the living conditions of the people. With over a population of 160 million people, Nigeria grapples with the crisis of electricity supply generating less than 4,000MW. Government in 2005 started the reforms in the power sector, which got a major boost in 2010 with the Power Sector Reform Roadmap that spurred huge investment in the sector. This paper critically examines the reforms in the power sector; the post privatisation performance and challenges, as well as implications for industrial development in Nigeria. The paper is premised on neoliberalism and modernisation theory. The paper argues that with the reform, several structural and institutional changes have occurred in the power sector. The performance of the sector in the post privatisation era in terms of service delivery to the private citizens and corporate bodies is still fraught with inefficiency due largely to the problems of funding, transmission, gas supply among others. The paper concludes that the reform that occurred in the power sector in relation to industrial development in Nigeria is nothing but a mere replacement of public monopoly by private monopoly and can best be likened to the difference between six and half a dozen.

Keywords: Power sector, reforms, industrial development, privatisation, neoliberalism.

Introduction
Electric power is the fulcrum of modern development. Nigeria as a nation has one of the most problematic electricity crisis in the world, with an estimated installed generation capacity of about 8,644 Megawatt (MW), and available capacity of only about 3,200 MW, to cater for the needs of the population of over 160 million. By comparison, South Africa, with a population of a little over 50 million, has an installed electricity generation capacity of over 52,000MW (Ayanruoh, 2012). Consequently, this huge generation capacity gap and demand for electricity has led to widespread power shortage and gross inefficiency. Thus self generation of electricity by both industrial and residential consumers has been on the increase. It is evident that the poor performance of the power sector in Nigeria has been a significant impediment to private investment in the country and as a matter of fact a major barrier to industrial development (Thirlwall, 1989; World Bank, 2004; Adenikuju, 2005; Okafor, 2008, Olayemi, 2012; Nnaji, 2012a).

Industrial development is a spring board on the basis of which a country ensures overall sustainable development and economic growth. Specifically,
Industrial development is a process by which a nation acquires a competence in the manufacturing of equipment and products required for sustainable development. Technology is considered to be the prime factor in this process. Industrial development and technological development are interdependent and interrelated. While technological development is prerequisite for industrial development; the industrial sector is the major propelling force for technological development and innovation. However, in a developing economy like Nigeria, neither can flourish unless there is adequate technological infrastructure in place like constant power supply (Sutcliffe, 1971; Thirlwall, 1989; Ernst, Ganiastor and Mytelka, 1994; Kim, 1997; Afonja, 2003; World Bank, 2004; Atser, 2006a).

Technological infrastructure is an enabling environment required for rapid growth of technological and industrial development and comprises physical and human variables like energy, water, power supply, transport, communication, financial and human capital. The ability to provide and effectively apply these inputs is a direct indicator of the potential for the development of any nation, and is primarily the differentiating factor between the various levels of development worldwide. Regular and uninterrupted power supply is the prime mover of technological and social development. There is hardly any enterprise or indeed any aspect of human development that does not require energy and power supply in one form or the other - electric power, fuels, etc. Nigeria is richly endowed with various energy sources, crude oil, natural gas, coal, hydropower, solar energy, fissionable materials for nuclear energy. Yet the country consistently suffers from energy and power shortages - a major impediment to industrial and technological growth (Afonja, 2003, World Bank, 2004; Atser, 2006a; Okafor, 2008).

The importance of electricity supply to the economy and industrial development cannot be overemphasized. With the unemployment rate close to 30 per cent and industrial capacity utilisation at below 30 per cent, stable electricity supply can take the economy out of the woods (Thirlwall, 1989; Iwayemi, 1998; World Bank, 2004; Adenikiuju, 2005; Okafor, 2008; Olayemi, 2012). The issue of reforms in the power sector in Nigeria is of particular interest to industrial sociologists because if the reform impacts positively on industrial development, then wealth could be created and more employment generated. These will not only help to fight poverty and unemployment but will ultimately translate into better living condition for Nigerians. Furthermore, Nigeria appears to be on the verge of an industrial revolution and one of the fastest growing economies globally. (Awoyemi, 2012; Boyo, 2013a). It is therefore pertinent to critically examine the government’s ongoing Power Sector Reform initiative to ascertain if anything has really changed that would engender inclusive growth in the country.

Theoretical Framework
This paper is guided by two theories. These are; neoliberalism and modernisation theory. While neoliberalism is used to explain reforms in the power sector, modernisation theory is being used to capture the Nigerian economy's GDP computation, the economy is broken into two broad groups namely: Oil and non-oil sectors. Despite oil being the major source of revenue for the country, the non-oil sector continued to be a major driver of the Nigerian economy. In Q3 and Q4 2011, the sector grew at 8.81 per cent and 9.07 per cent respectively. The Q4 2011 growth was largely driven by improved activities in the telecommunications, building and construction, hotel and restaurant, business services and other sectors. Nigeria's vision to be among the 20 largest economies in the world by the year 2020, which is measured by GDP remained on track as only two countries (Mongolia at 14.9 per cent and China at 8.9 per cent) out of the 46 that released their Q4 GDP estimates grew faster than Nigeria and only one of the two, China is ahead of Nigeria in 2011 GDP rankings.
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industrial development. Neoliberalism as a theory is premised on the postulation that states ought to abstain from intervening in the economy, and instead leave as much as possible up to individuals participating in free and self-regulating markets. Furthermore, it is based on the belief that the state ought to be minimal, which means that practically everything except armed forces, law enforcement and other 'non-excludable goods' ought to be left to the free dealings of its citizens, and the organisations they freely choose to establish and take part in. These beliefs could apply to the international level as well, where a system of free markets and free trade ought to be implemented as well. The only acceptable reason for regulating international trade is to safeguard commercial liberty and strong property rights which ought to be realized on a national level. The sole purpose of the minimal state is to uphold the most fundamental aspects of public order. Thus the neo-liberals favour **laissez-faire** economic policies and maintain that acts of intervention in the economy from government agencies are therefore almost always undesirable, because intervention can undermine the finely tuned logic of the marketplace, and thus reduce economic efficiency (Norberg 2001; Saad-Filho and Johnston, 2005; Friedman 2006; Thorsen and Lie, 2007).

Specifying what should be the role of the state in the neoliberal economy, Harvey (2005:2) argues that:

The role of the state is to create and preserve an institutional framework appropriate to such practices. The state has to guarantee, for example, the quality and integrity of money. It must also set up those military, defence, police and legal structures and functions required to secure private property rights and to
guarantee, by force if need be, the proper functioning of markets. Furthermore, if markets do not exist (in areas such as land, water, education, health care, social security, or environmental pollution) then they must be created, by state action if necessary. But beyond these tasks the state should not venture. State interventions in markets (once created) must be kept to a bare minimum because, according to the theory, the state cannot possibly possess enough information to second-guess market signals (prices) and because powerful interest groups will inevitably distort and bias state interventions (particularly in democracies) for their own benefit.

In essence, neoliberalism includes the belief that freely adopted market mechanism is the optimal way of organising all exchanges of goods and services. Free markets and free trade will, it is believed, set free the creative potential and the entrepreneurial spirit which is built into the spontaneous order of any human society, and thereby lead to more individual liberty and well-being, and a more efficient allocation of resources (Friedman 1962; 1980; Norberg, 2001).

In summary, Martinez and Garcia (2006) identified the main features of neo-liberalism to include;

- **Adherence to the rules of the market.** This involves but not limited to liberating “free” enterprise or private enterprise from any bonds imposed by the government (the state) no matter how much social damage this causes, greater openness to international trade and
investment, reduce wages by de-unionizing workers and eliminating workers’ rights that had been won over many years of struggle. In all, it advocates total freedom of movement for capital, goods and services.

- **Cutting public expenditure for social services** like education, health care, public power supply, etc

- **Deregulation.** This involves reduction in government regulation of everything that could diminish profits, including protecting the environment and safety on the job.

- **Privatisation** This involves selling of state-owned enterprises, goods and services to private investors. This includes banks, key industries, railroads, electricity, schools, hospitals, and so on. This is in order to promote greater efficiency and reduce government spending on these public institutions.

- **Eliminating the concept of the ‘public good’ or ‘community’.** This involves replacing public good with “individual responsibility” by razing that it is people who should find solutions to their problems of health care, electricity supply, education, social security, and so on, and not the government.

Therefore government’s attempt to reform the power sector since 2005 is part of the overall objective of neo-liberal economic policy and agenda to deregulate and privatise the generating power plants by establishing the Nigeria Electricity Regulatory Commission (NERC) in order to play the role of regulating the market.

On the other hand, the main thrust of modernisation theory is that countries of Africa are industrially and technologically backward because they lack modern institutions, infrastructure, attitude, behaviour and dispositions that will power development. The theory makes a distinction between traditional societies and modern societies. For this theory, traditional societies are characterized by poor differentiated, agrarian, family-based barter economies which rarely use or generate technology and which seldom provide goods and services beyond the level of bare subsistence. Modern societies on the other hand are characterized by highly differentiated industrial economies, which use and generate innovate technology and create a surplus of goods and services sufficient to provide most members of society with a standard of living well in excess of mere subsistence. The theory further contends that most developing societies are poorly integrated in terms of the fit of the political, economic, social and technological dimension of their societies. As a result efforts and capacity of many of these societies to pursue programme of rapid industrialisation have collapsed because their level of critical infrastructure is incapable of coping with the demands that accompanies rapid change (Moore, 1963; Knapp, 1994; Macionis, 1994).

Parsons (1951), a prominent scholar in this area of study argues that modernisation means the movement from traditional society to modern society. By implication, this means movement from particularism to universalism, ascription to achievement, affectivity to affective neutral roles, diffusence to functional specific roles and from collective orientation to self orientation. Rostow (1960) in his contribution argues that all societies in their economic dimension lie within five categories. These are; the traditional societies, the pre-condition of take off, the take off, the drive to maturity and the age of mass consumption. Thus, constantly supply of electricity is a major requirement for pre-condition of
take-off of any modern economy that would want to achieve sustainable transformation and industrial development.

In relation to industrial development, the general argument of modernisation approach is that for a traditional society to become a modern industrial society there should be massive investment in the critical technological infrastructure of which electricity is very pivotal in order to develop the industrial sector. This will in turn will expand and sustain productive capacity of the economy, create jobs for the masses and improve the living conditions of the people. The idea here is that simple technology cannot sustain industrial development and thus massive investment in critical infrastructure will move the society away from traditional economy to modern economy as well as meeting the needs and demands of the people.

The implication of the theory is that international companies and countries should play a very important role in the economic development of the developing countries through massive investment in the critical infrastructure like electricity. Thus signing of Memorandum of Understanding (MoU) between many foreign electricity companies and Federal Ministry of Power is part of this general attempt to improve electricity supply in Nigeria (Nnaji, 2012a; Opara, 2012a).

**Brief historical background of Reform of Electricity Sector in Nigeria**

Nigeria has one of the most problematic electricity sectors in the world. Prior to 2005, the estimated installed electricity generation capacity was 8,644 MW with a dismal available capacity of only approximately 4,000 MW to cater for the needs of a population of about 160 million. By comparison, South Africa, with a population of just 50 million, has an installed electricity generation capacity of over 52,000 MW. Also, Nigeria’s electricity consumption on a per capita basis was among the lowest in the world when compared with the average per capita electricity usage in Libya, 4,270KWH; India, 615KWH; China, 2,944KWH; South Africa, 4,803 KWH; Singapore, 8,307KWH; and the United States, 13,394KWH. The historic gap between the demand for electricity and the available capacity has led to widespread power shortage and inefficiency and, consequently, self-generation of power by both industrial and residential consumers. It is self-evident that the poor performance of the electricity power sector in Nigeria has been a significant barrier to private investment in the country and to overall development and economic growth. The sector’s market structure, like most economies of the developing world, is dominated by the state-owned power entity – Power Holding Company of Nigeria (PHCN) (Ayanruoh, 2012; Nnaji, 2012a; Oketola, 2013a).

The overcentralisation of PHCN made it impossible for electricity supply to keep pace with growth in population, economic activities and industrial development. No new plants were built from 1989 to 1999 when Nigeria returned to democratic rule (Presidential Task Force on Power, PTFP, 2011). All the existing power stations and their installed capacities are: Egbin Thermal Station, Lagos (1,320MW); Afam Thermal, Rivers State (969 MW); Sapele Thermal, Delta State (1,020); Ijora Thermal Plant, Lagos (40 MW); Kainji Hydro Station, Niger State (760 MW); Jebba Hydro Station, Niger State (578.4MW) and Shiroro Hydro, Niger State (600MW). With this, the installed capacity is about 6000MW (approximately twice the current level of national demand), the country generates between, 3,500 and 3,800 MW of electricity (Atser, 2006a; Opara, 2012b).
There were severe underinvestment, equipment were poorly maintained and low salaries could not attract or retain the best talents. At present, Nigeria has the biggest gap in the world between electricity demand and supply, providing its population of over 160 million population with about 4,000 megawatts of electricity. In contrast, South African generates more than 40,000 megawatts for a population of 47 million while Brazil generates 100,000 megawatts for its 201 million citizens (Okafor, 2008; PTFP, 2011; Anuforo, 2013b). Nigeria’s production of electricity power stood at mere 1,850 megawatts in May, 1999. The revenue generated by very low electricity tariffs could not even cover the cost of providing and supplying power. Nigerians spent enormous sums on self generated power, making the country’s cost of electricity consumption one of the highest in the world (Anuforo, Aduba and Salau, 2012; Oluseyi, Akinbulire and Awosope, 2012).

As a result of the inadequate electricity supply Olusegun Obasanjo administration worked with the National Assembly to enact the Electricity Power Sector Reform (EPSR) act on the 11th March, 2005 with a view to making the private sector the leading engine of growth in the industry. The move was also to reintegrate Nigeria into the global economy as a platform to attract foreign direct investments in an open and transparent manner. This legislation formally ended government monopoly and created institutions to build a power sector in which the private sector has become a key partner in development. The reform culminated in the repeal of the National Electricity Power Authority (NEPA) and the electricity act and its restructuring from vertical integration structure into 18 unbundled autonomous companies which consist of one transmission company, six generation and eleven distribution companies respectively. The act further provided for the establishment of the Nigeria Electricity Regulatory Commission (NERC), the Rural Electrification Agency (REA) and the National Electricity Liability Company (NEMNCO), which are special purpose entities created to manage the residual assets and liabilities of the defunct NEPA after privatization of the unbundled companies.

The end of government monopoly also made the emergence of independent power generation plants operated by Agip, Shell, AES and other companies, possible. The Independent Power Producers (IPPs) generated 1,100 megawatts out of a little over estimated 4,000 megawatts produced in the country. The Obasanjo administration also instituted the National Integrated Power Projects (NIPP), which consists of power plants of 2,000 megawatts capacity, the expansion of 330 KV and 132 KV transmission network and the expansion of the distribution network through the construction of sub-stations and distribution lines. The NIPP became a vehicle to channel funds from the excess crude oil account owned by the three tiers of government into Nigeria’s power sector. Far more funds have consequently been invested in the power sector than the Federal Government alone could have been able to provide from its own share of resources from Federation Account (Okafor, 2008; Anuforo, 2013a).

Goodluck Jonathan, no sooner than he became president on 10 May, 2010 after the demise of former President Umaru Yardua conducted a review of the Power Sector Reform and the National Integrated Power Projects (NIPP). President Jonathan consequently launched the Road Map for Power Sector Reform on 26 August, 2010, to fast-track the implementation of EPSR Act of 2005. The roadmap, which contains a number of policies and institutional reforms, was seen as having the capacity to expand electricity supply and access significantly. In a nutshell, the roadmap seeks among other things, the
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strengthening of policies and institutions to attain the goals of the power sector reform, especially attracting private sector investment and efficient management and achieving effective regulation of the sector. Also in the roadmap, government promised the implementation of a super transmission network, generation of additional 5,000mw by international oil companies, active exploration of hydro, nuclear and coal power, privatisation of PHCN generation and distribution network, a new gas pricing policy, constitution of two presidential committees on power and the reconstitution of the boards and membership of the Nigerian Electricity Regulatory Commission (NERC) (PTFP, 2011; Oluseyi, et al 2012; Anuforo, 2013a).

In essence, for the first time, the country seems to have comprehensive and realistic plan for resolving Nigeria’s electric power crisis, identifying requirements to achieve stable power supply in the entire value chain from gas to generation, to transmission and distribution. The Road Map has a set of definitive plan with timelines for medium and long term goals. With this reform, it is presumed that Nigeria will replicate the feat it achieved in the telecommunication sector in which telephone lines rose from under 400,000 to over 80 million in less than 10 years which is considered as a testimony of the potential of reform to replace scarcity with abundance (Oluseyi, et al 2012).

It is on record that power sector, since the return to civilian rule in Nigeria in 1999, especially under Goodluck Jonathan, received unprecedented government attention. The administration as soon as it came on board in 2010, set up the Presidential Action Committee on Power (PACP) which meets every Tuesday with the president himself chairing and the Vice-President serving as Alternate Chair. The PACP sets policy and grants expedited approvals for critical decisions for the implementation of the power sector reform. The Jonathan Administration also set up, shortly after it was inaugurated, the Presidential Task Force on Power (PTFP) as the implementation arm of the PACP; the PTFP supervises the day-to day implementation of steps to restore confidence in and reform the power sector (PTFP, 2011).

Although certain aspects of the roadmap were said to have been accomplished by the close of the year 2012, key aspects like completion of the privatization timetable, among others, were fraught with postponements and disappointments (Anuforo, 2013a). Thus as a result of a number of challenges in meeting its 2012 target for the electricity sector, the Presidency commenced the review of its Power Sector Reform Roadmap in February, 2013. As a mark of its determination to deliver on its promises in the electricity sector, the Presidency described the year 2013 as “a make or break” year. It was believed that timely delivery of the 2013 milestones would guarantee a big pay-off from 2014 and beyond in terms of improved electricity supply, impact on the economy, and political dividends to this administration. Poor performance in 2013 would leave the reform very vulnerable and lead to gain reversals and market confusion (Anuforo, 2013a).

In the medium term (up to December 2013), it was expected that a modest increase in the total power generation capacity of the existing PHCN power stations (which would bring the total to just under 4,500mw); the addition of 4,775mw from the NIPP plants; and a substantial (3,300MW) increase in power generation capacity from IPPs all by December 2013. As such, the medium term expectation was that 14,000mw of power generation capacity would be available by December 2013, according to the roadmap. The revised roadmap was expected to deliver the privatisation in full by the fourth quarter of 2013,
and make projections for growth from various fuel and energy sources up to 2016. Among other targets in the new roadmap expected to be ready before April, are the commencement and conclusion of all labour settlements, severance, rationalisation and winding down of the Power Holding Company of Nigeria (PHCN). The review document stressed that completion and handover of the successor companies would occur in the fourth quarter of 2013 while the new owners would be expected to invest capital and provide technical and managerial expertise necessary to create a robust and dynamic power sector, as necessary for reviving the nation’s manufacturing sector, creating jobs, and improving quality of life (Anuforo, 2013a).

According to the document, 2013 was expected to witness the commencement and conclusion of payment of labour severance packages to former PHCN staff. There would be enhanced capacity of Nigerian Bulk Electricity Trading Company (NBET) to sign and execute Power Purchase Agreements (PPAs) for existing Federal Government of Nigeria (FNG) assets and the first wave of new IPPs. Bidders of privatised assets would complete full payment and handover of such assets would be completed. The capacity of Nigerian Electricity Liability Management Company (NELMCO) would be enhanced to deal with liabilities pre- and post-privatisation. The announcement of the commencement of the Transitional Electricity Market is expected in 2013. On funding, the PTFP said it would liaise with the Federal Ministry of Finance and Federal Ministry of Power to completely fund and operationalise NELMCO and NBET so as to conclude all credit enhancement provisions and allied market staging processes aimed at securitising the bulk trader’s activities and all processes to enable the earliest declaration of the Transitional Electricity Market (TEM) stage (PTFP, 2013).

With the reforms in the power, it appeared that the international investors had demonstrated confidence in the sector in the last few years. For example, the General Electric, (GE) the world’s largest electricity company, signed Memorandum of Understanding (MoU) with the Federal Ministry of Power to help build plants to generate 10,000MW. It was expected that the company would invest between 10 and 15 per cent equity in the new plants, the first time ever GE was investing in this manner in West Africa. The company was expected in addition to build a plant in Nigeria, to produce turbines. Siemens of Germany followed in the GE steps by signing an MoU with Nigeria to assist generate 10,000MW, invest in new power stations and build a service station in Nigeria, the first time ever. Daewoo Corporation of South Korea also signed MoU with the Federal Ministry of Power for the purpose of investing in the power sector. Also, the World Bank, and other world class companies like US Exim Bank, Essar of India and Tata of India as well as Manitoba Hydro International of Canada took steps to participate in the power sector reform in Nigeria. For example, US Exim Bank was expected to provide US1.5 billion credit in one year (Nnaji, 2012a, 2012b; Anuforo, 2013b).

As at November 1, 2013 the process of privatisation was formally concluded with the Federal Government physically handing the PHCN over to the new private investors, comprising 11 distribution companies (DISCOS) and four generation companies (GENCOS). The Ikeja Distribution Company went to

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2 One may be tempted to argue that it is too early to evaluate the performance of the privatised power companies, just after three months, however, it is imperative to draw the attention of member of the public of the challenges facing the new owners so that people will begin to see the possibility of a big problem in the years to come.
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NEDC/KEPCO; Eko DISCO to West Power and Gas; Port Harcourt DISCO to 4 Power Consortium; Benin DISCO to Vigeo Consortium; Jos DISCO to Aura Energy; and Abuja DISCO to Kann Consortium. Integrated Energy Distribution and Marketing Company took over the Ibadan and Yola DISCOS; Sahelian Power took over Kano DISCO; while Ughelli Power Plc went to Transcorp/Woodrock Consortium; Geregu Power Plc to Amperion; Kainji Power Plc to Mainstream Energy Limited; Sapele Plc to CMEC/EUAFRIC Energy JV and Shiroro Hydropower Station was handed over to North South Power Company (Odetola, 2013a; Boyo, 2013b).

Meanwhile, government has been building ten power stations which included; Geregu 11(500MW), Calabar (630MW), Egbema (378MW), Ihovbor (504MW), Gbarian (252MW), Sapele (504MW), Omoku (252MW), Alaorji (1076 MW), Olorunsogo (750MW) and Omotosho (500MW) built by the three tiers of government under the Niger Delta Power Holding Company (NDPHC) have been commissioned (Atoyebi, Olokor, Oketola, Azania, Nnodim and Ubabukoh, 2013; Yusuf, Esiedesa and Oweh 2013). All these efforts are to providing constant electricity supply to the Nigerians and industries for rapid social and economic development.

Post Privatisation Performance and Challenges

Evaluation of the performance of the power sector in the post privatisation era showed a steady decrease in power supply to Nigerian and industries. The survey (Governance Snap Poll) conducted in the third week of November 2013 showed a general degenerated situation in power supply across Nigeria in spite of privatisation of the sector. The survey indicated that 49.0 per cent of those who responded said the power situation had deteriorated, 25.0 per cent said that there was no improvement whatsoever; while 26.0 said that there was little improvement. Sex distribution of the respondents showed that 53 per cent of the males were of the view that power supply had worsened, while 45.0 per cent of the female said same. Also, out of the number that said the situation had not improved, 36.0 per cent were men, while 31.0 per cent were women (Alohan, 2013; Nnodim, 2013a, 2013b; Obasi, 2013).

On the performance of the electricity sector across the geo-political zones of Nigeria, reports showed that in the post privatisation era, the consumers have continued to groan over poor electricity supply while the investors continue to pass the buck. The poor performance of electricity sector has given rise to various forms of complaints from commercial and individual consumers, who said that the situation had put more pressure on their electricity budgets. Several reasons have been adduced for this dismal performance. Such reasons included; the issue of funding, infrastructure and obsolete transmission lines and insufficient gas for generation, among other reasons (Olusola-Obasa, 2013; Boyo, 2013b; Onyekpere, 2013).

In essence, in spite of privatisation of the power sector, the only things that seem to have changed in the power sector are; first, the name, PHCN, and, second, the ownership structure of the power assets. Besides, that the power sector has continued to battle helplessly with multifaceted problems such as poor funding, decayed infrastructure, inadequate gas supply, ‘crazy billing’ due to poor metering system, and poor customer service, among others. While the defunct PHCN was synonymous with epileptic power supply, the situation is far from being different despite the private sector players’ incursion into the industry. The picture is still the same. The country’s current power generation stands at 3,800 Megawatts and the per capita electricity usage is 136 kilowatt/hour (Odetola, 2013a; Boyo, 2013b; Onyekpere, 2013).

As regards funding problem, the power sector is a highly capital intensive industry, and all the new investors lack the required funding to fast-track the expected turnaround of the sector. Already, many of the investors bought the power assets with borrowed funds as well as government intervention fund disbursed
by the Central Bank of Nigeria through the Money Deposit Banks. In fact, Nigerian banks provided 70 per cent of the funds in loans and equity of the N404bn paid for the power assets. No doubt, the financial outlay required to revamp the Nigerian power sector is huge. The Federal Government, through the Bureau of Public Enterprises, has said the GENCOS will be required to invest at least $35bn over the next 10 years (2013-2023) to increase capacity and the DISCOS would be required to invest about $1.8bn (about N288bn) as capital expenditure over the next five years (2013-2018) to attain efficiency and meet the required capacity. In 2013 alone, the DISCOS would be required to spend a total of $357.7m. Of the $357.7m, the Abuja DISCO was expected to invest $36.6m; Benin, $24.3m; Enugu, $27.2m; Ibadan, $43.86m; Jos, $22.75m; Kaduna, $29.96m; and Kano, $30.38m. Others are the Eko DISCO, $45.2m; Ikeja, $58.74m; Port Harcourt, $25.5m; and Yola, $13m (Oketola, 2013a, 2013c; Boyo, 2013b; Onyekpere, 2013). In essence, the new power investors are contractually obligated to inject into the system the necessary investments they have committed themselves to. But if they fail to attract these funds from the banks, there will be serious crisis power sector. The reality on ground is that the power investors lacked the necessary funding to turn around the sector by saying some of the new power generating companies were over-stretched and having huge debt profiles (Oketola, 2013a).

On the issues of infrastructure problem, it is instructive to note that Nigeria is still burdened with very inefficient power distribution and transmission network characterised by a high transmission and delivery loss. Stable power supply has remained a challenge in Nigeria because of very poor infrastructure base for the power sector. From generation, transmission to distribution, the entire value chain of the power sector is currently troubled. For instance, the total installed power generation capacity in the country is 10,396MW and the current available capacity is 6,056 MW. But the actual available capacity has fluctuated between 2,000MW and 4,200MW over the last two years due to inadequate gas supplies to the GENCOS and the activities of vandals on electricity infrastructure. With a current power generation capacity of 3,800 MW, a lot is required to be done by the GENCOS to increase the country’s generation capacity. About $25bn is required over the next seven years (2013-2020) to achieve 40,000 MW generation target by 2020. Over $2.5bn per annum is required for capital expenditure by the GENCOS (Oketola, 2013a).

Also, about $1.5bn operating expenditure is required by the GENCOS to finance gas purchase agreements and operational maintenance (Oketola, 2013a). Gas transmission pipeline, equipment financing services, asset monitoring and procurement are other aspects of the electricity generation infrastructure required to be funded by the new investors. The Transmission Company of Nigeria is the only PHCN successor company still owned by the Federal Government, but it has been considered as the weakest link in the country’s electricity network. Current transmission assets consist of 330 kV extra high tension and 132 kV high tension lines with a small number of 66 kV lines. The network currently has the capability to evacuate less than 6,000 MW of electricity and covers less than 40 per cent of the country’s land area. The implication is that unless the Federal Government revamped the transmission leg of the value chain, the entire privatisation exercise might be futile effort. About $3.7bn in funding was needed for the transmission system to reach this 2016 target. Electricity distribution is managed by 11 distribution companies, which seemed to have been successfully privatised in the third quarter of 2013. The distribution network system includes 33 kV, 11 kV and 0.415 kV power lines and 33 kV/11 kV, 33 kV/0.415 kV and 11 kV/0.415 kV substations. It is expected that increased investment in power infrastructure by core investors will improve power distribution in Nigeria and reduce aggregate technical, commercial and collection losses (Oketola, 2013a; Boyo, 2013b; Onyekpere, 2013).
With regard to gas supply problem, it is pertinent to note that an important determinant of success of power reforms is domestic gas development and supply. This is because a key component of the power reforms being championed by the present administration is the use of gas to power systems to meet the country’s immediate power needs. Most of the country’s power plants are gas-powered and consistency in supply has been the primary challenge. The major challenges for gas supply in Nigeria are inadequate infrastructure for gas gathering, processing and transportation, and damage to current transportation infrastructure by semi processed gas and vandalism. When gas supply is affected, it is not only power that suffers. It affects the entire value chain (Oketola, 2013a; Oketola and Nnodim, 2014).

Other problems that are plaguing the power sector in the post privatisation era are; managerial and technical competence of the investor especially on how electricity utilities work, gas supply, gas prices, political risks, domestic and international economic climate, access to capital, revenue projection, quality of inherited assets, the rate at which losses in the system will fall, interest and exchange rates, massive corruption among others (Oketola, 2013a; Boyo, 2013b; Onyekpere, 2013).

To demonstrate that the crisis in the power sector is far from being over in the post privatisation era largely due to gas shortage and other faults, reports show since the handover of the Power Holding Company of Nigeria successor companies to new investors, the generation firms have been complaining of a drop in the supply of gas to fire their plants. The development has led to erratic electricity supply across the country although there have been promises of improvements in the near future. For instance, about 80 per cent of the power plants, which are gas-fired, are deprived of regular gas supply. The Geregu, Omotosho and Olorunsogo plants with available capacities of 414MW, 126MW and 252MW could only generate 143MW, 81.2MW and 164.7MW, respectively due to gas constraints. As of 6am on Monday, 27 January, 2014, the Geregu and Omotosho National Integrated Power Project plants had available capacities of 435MW and 500MW but were only able to generate 60MW and 102.5MW, respectively due to low gas pressure. Also, the Sapele NIPP, with 250MW available capacity, was totally out due to gas constraints, loading problem and civil work on its basement. The Olorunsogo NIPP plant with 500MW capacity was also out due to gas constraints and maintenance after a commissioning test. Furthermore, the Alaoghi plant has also been shut down following a water injection test, while the Egbin Power Station, with 880MW available capacity, was on Monday, 27 January, 2014 generating 703MW. Also, the Sapele, Delta and Afam IV-V power plants, which on Monday, 27 January, 2014 had 120MW, 375MW and 75MW available capacities, could only generate 68MW, 346MW and 50MW, respectively due to low lube oil pressure, faults and maintenance works. The Shiroro Hydro Plant has installed available capacity of 450MW as of 6am on Monday, 27 January, 2014 but could only generate 300MW due to ongoing repairs and overhaul. Also, the Kainji Hydro Plant was totally out due to rehabilitation. The rehabilitation of its 1G5 unit was ongoing as of Monday, 27 January, 2014 while the 1G6 unit was already out for rehabilitation since 6 December, 2013 and is expected back on December 31, 2014. The 1G7 unit was out on stator winding E/F, while the 1G8 unit was out on fault (Oketola, 2014).

In a nutshell, with a total installed capacity of 10,396MW, Nigeria can only boast of 6,056MW available, with actual supply fluctuating between 2,000MW and 4,200MW over the last two years (2012-2014) due to inadequate gas supply to the power plants and other challenges. According to the Nigerian
Electricity Regulatory Commission power generation stood at 3,580.2MW on 12 January, 2014, while according to the Presidential Task Force on Power 3,574.10MW was generated on 14 January, 2013. This further dipped as at 27 January, 2014 (Oketola, 2014; Oketola and Nnodim, 2014). All these show that even in the post privatisation era, the problem of power supply in Nigeria is far from over.

Possible Implications for Industrial Development in Nigeria

What then is the implication of this for industrial development in Nigeria? It is important to note that in any economy, industrial development has the potential to help achieve a variety of social objectives such as employment, poverty eradication, gender equality, labour standards and greater access to education and healthcare. The more developed a country’s industrial capacity, the greater the potential for economic growth and development. However, industrial development cannot be driven without measurable and sustainable indices of industrial plants in all the sectors of the economy of which manufacturing is a critical path in this industrial value chain. It is a known enabler of entrepreneurship, employer of labour and stimulant for transformation (Thirlwall, 1989; Afonja, 2003; Okafor, 2008).

Studies on industrial development of different countries have shown that the informal sector constitutes an integral part in the overall industrial sector and play an active role in the growth and development of these countries. These enterprises contribute significantly to the employment generation and output growth of different developed and developing countries. Everywhere else, the ability to create and retain jobs is a cardinal measure of both the relevance and efficaciousness of any nation and government. A short hand description of a government is to denominate it in the number of jobs created. The challenge in the power sector explains the unfortunate exit of manufacturing plants from the country, a phenomenon that has become the norm while importation of every item under the sun is unabated. The few producers under a high cost profile can hardly break even (Ebosele, 2012; Fanimo and Okere, 2012; Olayemi, 2012).

Manufacturers Association of Nigeria (MAN) in its yearly report (2012) disclosed that about 834 factories were closed across all the geo-political zones with over 100,000 job losses. The challenges with the sector as identified by Association have been mainly that of power supply, smuggling, unrestrained importation of fake, absence of clear industrial policy, high cost of Low Pour Fuel Oil (LPFO) otherwise known as black oil, and interest-rate instability. Nigeria textile industry was once the finest and most vibrant textile industry in the world, because in the 80s, the industry provided about 15,000 direct jobs with well over 250 functional factories scattered all over the federation, especially in the northern part of the country. All these have aggravated the problem of unemployment in Nigeria and stifled the Small and Medium Enterprises (SMEs) from generating employment (Okafor, 2008; Fanimo and Okere, 2012).

Small and Medium Enterprises (SMEs) constitute over 90 per cent of total enterprises in most economies with a high rate of employment growth. They constitute a vehicle for increased industrial production and exports. For example, in America and EU countries, it is estimated that SMEs contribute about 60 per cent in employment, 40-60 per cent to Gross Domestic Product and 30-60 per cent to exports. The Asian countries of China, Indonesia, India, Malaysia, Japan and South Korea also have impressive SME sectors contributing between 70 to 90 per cent of employment with about 40 per cent contribution to their respective GDPs. (Chiedu, 2012). In terms of employment generation, SMEs employment, generates about 6.2 per cent of the aggregate employment in the United
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States, 22.3 per cent in China, about 80 per cent in India, as well as about 50 per cent employment in Israel. The foregoing therefore points to the fact that the SMEs if given the needed support and regulatory framework, could be a major player in the unemployment reduction in Nigeria, as well as in other developing countries. But the major challenge to the success of SMEs in Nigeria is irregular power supply (Fanimo and Okere, 2012).

The statistics from the Nigeria Bureau of Statistics (NBS), showed that unemployment rate in Nigeria between 2006 and 2011 averaged 14.6 per cent, noting that it reached an all time high of 23.9 per cent in December 2011 from a record low of 5.3 per cent in December 2006. Illustrating with the statistics from the MAN, review between 2002 and 2007 in industrial sector, the employment dropped from 2,841,083 in 2002 to 1,027,799 in 2007, although the sector grew marginally from 966,395 in 2010 to 1,105,448 in 2011. Data as shown on table 1 indicate that between 2002 and 2007, employment fluctuated in ten selected sectors namely; the food, beverage and tobacco sector, the textile append and footwear sector, the wood and wood products, the pulp, paper and publishing sector, the chemical and pharmaceutical sector, the non-metallic mineral products, the domestic/industrial, plastic, rubber and foam sector, the electrical and electronics sector, the basic metal, iron and steel sector, and the motor vehicles and miscellaneous assembly (Fanimo and Okere, 2012).

Table 1: Sector and Employment Generation (2002-2007)

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
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<tbody>
<tr>
<td>Food, Beverage and Tobacco Sector</td>
<td>372,209</td>
<td>322,630</td>
<td>254,549</td>
<td>245,678</td>
<td>273,728</td>
<td>274,690</td>
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<tr>
<td>Textile Append and Footwear</td>
<td>80,392</td>
<td>88,088</td>
<td>574,340</td>
<td>40,430</td>
<td>37,171</td>
<td>39,968</td>
</tr>
<tr>
<td>Wood and Wood Products</td>
<td>165,814</td>
<td>166,892</td>
<td>136,053</td>
<td>89,793</td>
<td>35,207</td>
<td>62,543</td>
</tr>
<tr>
<td>Pulp, Paper and Publishing Sector</td>
<td>152,863</td>
<td>128,172</td>
<td>200,845</td>
<td>40,337</td>
<td>48,950</td>
<td>46,429</td>
</tr>
<tr>
<td>Chemical and Pharmaceutical Sector</td>
<td>142,896</td>
<td>122,468</td>
<td>65,581</td>
<td>56,360</td>
<td>67,563</td>
<td>72,353</td>
</tr>
<tr>
<td>Non-Metallic mineral Products</td>
<td>94,038</td>
<td>101,181</td>
<td>104,611</td>
<td>160,660</td>
<td>130,695</td>
<td>147,517</td>
</tr>
<tr>
<td>Domestic/industrial Plastic</td>
<td></td>
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</table>
Thus, the Lagos Chamber of Commerce and Industry (LCCI) admitted that though there was a reform process in the power sector, yet the results had been at variance with industry’s operators and people’s expectations thereby stagnating real meaningful development and stifling investor confidence in the economy (Adeloye, 2012).

Besides the manufacturing sector, in the telecommunication sector, power is the major constraint. The sector is dependent on the constant availability of stable power, and with the current electricity problem, the sector has to invest on generators for its operations, which impacts its profitability. Operators in the sector provide two generators for each base station, but sometimes, these fail at the same time. Investigations shows that than in 2011 alone, the telecommunications firms in the country spent about N42.6 billion on power, security in 2011. Operators including MTN, Globacom, Airtel, Etisalat, Starcomms, Visafone among others in 2011 spent monthly between N3.6 billion to N4 billion on diesel to power their 20,000 generators used in servicing their Base Transceiver Stations (BTS) in the country. By so doing, with a litre of diesel price fluctuating between N140 to N145 per litre in 2011, operators spent between N3.63 billion to N4 billion on generators monthly, which amounts to about N39.1 billion yearly to power (Adedotun, 2012).

Recent data from the National Bureau of Statistics (NBS) showed that poor electricity supply lowered the non-oil sector’s growth in the second quarter of 2013, when compared with 7.63 per cent of the corresponding period in 2012, and 7.89 per cent in the first quarter of the 2012. The sector recorded 0.27 per cent year-on-year drop in growth. The sector’s growth also dropped by 0.53 per cent from the first quarter of 2013. Although the figures may appear insignificant, however, they were quite impacting in real terms and poor electricity availability was identified as the cause of the drop. In essence, relative decline was partly attributed to lower electricity generation during the period which had ripple effects on wholesale and retail trade, telecommunications and manufacturing (NBS, 2013; Oketola, 2013b).

Specifically, the NBS data showed that the Wholesale & Retail Trade sector stood at 7.44 per cent in the second quarter of 2013, compared to 8.65 per cent recorded in the second quarter of 2012. Growth was also lower when compared with the first quarter of 2013 which recorded 8.22 per cent. The sector, however, remained the second largest contributor to GDP, after agriculture, according to the NBS data. Also, Telecommunications sector recorded a real GDP growth of 22.12 per cent in the second quarter of 2013, but this was down from 24.53 per cent recorded in the first quarter of the year, and 29.38

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<tbody>
<tr>
<td>Rubber Foam Sector</td>
<td>148,302</td>
<td>158,066</td>
<td>106,785</td>
<td>150,750</td>
<td>156,005</td>
</tr>
<tr>
<td>Electrical and Electronic</td>
<td>76,000</td>
<td>69,318</td>
<td>87,325</td>
<td>90,340</td>
<td>76,955</td>
</tr>
<tr>
<td>Basic Metal, Iron and Steel</td>
<td>87,149</td>
<td>82,181</td>
<td>80,897</td>
<td>110,890</td>
<td>116,206</td>
</tr>
<tr>
<td>Motor vehicle and Miscellaneous</td>
<td>75,756</td>
<td>71,561</td>
<td>78,330</td>
<td>55,468</td>
<td>63,830</td>
</tr>
</tbody>
</table>

Fanimo and Okere (2012)
Reforms in the Power Sector and Implications for Industrial Development in Nigeria: The Case of Difference between Six and Half a Dozen?

per cent recorded in the second quarter of 2012. In essence, while the telecommunications sector continues to be a key driver of the growth in non-oil sector and the Nigerian economy at large, growth in the sector slowed in the second quarter of 2013 as a result of power supply and other infrastructure constraints. During the second quarter of 2013, NBS data showed that manufacturing output decreased relative to the same period in 2012, adding that real GDP growth in the sector was recorded at 6.81 per cent. But this was down from 8.41 per cent recorded in the first quarter of 2013, and 7.59 per cent recorded in the corresponding quarter of 2012. This decline was due partly to power according to NBS (NBS, 2013; Oketola, 2013b).

According to the Manufacturers Association of Nigeria (MAN) in 2012, electricity supply to industrial areas was still a big challenge in the country. This, according to MAN, has led to low performance in terms of contribution to GDP, export earnings, employment generation and wealth creation. For MAN, the gross inadequacy in public electric power supply and its effect on the economy cannot be over-emphasised. Manufacturing sector spent huge amount in generating electricity to power its operations. According to MAN, although there was a marginal increase in daily electricity supply to industrial areas in 2012, the supply which stood at 8.1 hours/day when compared with the 6.7 hours/day in 2011 was low in quality and regularity. These challenges largely made supply from PHCN unusable by industries, particularly the medium and large ones. Thus, harsh operating environment caused by huge infrastructure gap, particularly public electric power supply and road infrastructure, had continued to hamper real sector’s growth and industrialisation in the country (Oketola, 2013b; Opara, 2012c).

Conclusion
Since the commencement of reforms in the power sector in 2005 and later the launch of Power sector reform roadmap in 2010, quite a lot of structural and institutional changes have taken place. Some of these changes involved the enactment of ERC Act of 2005, massive in the sector, changing NEPA to PHCN, privatisation of the generating plants, building of new power plants across the country, introduction of Multi-Year Tariff Order (MYTO), signing of many MoUs with several foreign electric companies and international agencies, among others to improve power supply. However, inadequate arrangement for supply of gas, and lack of investment in transmission lines, decay and rot in the power sector have thwarted efforts to improve power supply in Nigeria since the privatisation of the sector. Thus, the reform of the power sector has neither translated into better service delivery nor the availability of electricity to Nigerians and industries. The unfulfilled promises of the benefits that would accrue from the reforms to Nigerians and industries have remained largely open-ended with no end in sight. Since constant power supply is a major requirement of any modern economy that wants to achieve industrial development, the supposed efforts in terms of reform in the power sector should attract the attention of all. However, the reforms that have occurred in the power sector and the implication for industrial development in Nigeria is a mere replacement of public monopoly by the private monopoly which can best be described as the case of difference between six and half a dozen with very little or nothing to show for it.

References


Aser, G. (2006a). ‘Nigeria, others have less than 25% access to electricity – World Bank’ The Punch, November, p.28


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