

Liberalization of the Electricity Sector: The Nigerian Experience

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Abstract— The liberalization of the Nigerian electricity sector was initiated to address inefficiencies in the sector and increase the participation of the private investors. So much is said and known on the reforms but what has not been very obvious is the extent of successes and losses that have been made in the sector since the reforms. This study thus examines the liberalization exercise in the Nigerian electricity sector in order to determine the pros and cons that have come about as a result and chart the progress of the country in the electric sector. The theory of public and private interest provides the framework, while the exploratory design was adopted utilising laws, case laws and legal principles. The purposively selected laws were the (1999) Constitution of the Federal Republic of Nigeria (FRN) (as amended), the Electric Power Sector Reform (EPSR) Act (2005), and Energy Commission of Nigeria Act (1979). Case laws that are relevant to the reform were selected from law reports and policy documents. Regulations have been identified to be ineffective in Nigeria due to the proliferations of institutions and regulatory agencies. The regulatory, legal and institutional framework of the electric power sector reform in Nigeria has not been effective. The amendment of the conflicting provisions in the Electric Power Sector Reform Act (2005) needs to be in tandem with the (1999) Constitution Federal Republic of Nigeria as this is crucial and capable of strengthening the capacity of the relevant institutions.

Index Terms— Electric Power Sector Reform, Energy Commission of Nigeria Act, liberalization.

I. INTRODUCTION

Liberalization of the power sector is a measure that was taken by the government of Nigeria in a bid to douse the myriad of challenges that characterised its electricity chain. The reforms were made in order to attract private sector investment in order to relieve government of the burden of financing the sector's needs. A number of measures were taken to remove some of the barriers which were seen to inhibit the flow of private capital into the sector. The most critical of the problems were the insufficient security to safeguard foreign direct investments, the limited size of the domestic market and the absence of a legislative framework for the evaluation of projects and the independent regulation of the sector. The structural reforms has therefore significantly changed the functioning of electricity generation and distribution and provided new opportunities, products and services. It is a recognized fact that availability and access to energy is sine qua non for achieving industrialization in any country. The government therefore developed the National Electric Power Policy 2001, setting out the agenda for the holistic reform of the power sector. The

objectives include, to:

1. ensure a system of generation, transmission, distribution and marketing that is efficient, safe, affordable and cost-reflective throughout the country;
2. ensure that the power sector attracts private investment locally and internationally;
3. develop a transparent and effective regulatory framework for the power sector;
4. develop and enhance indigenous capacity in electric power sector technology;
5. participating effectively in international power sector activities in order to promote electric power development in Nigeria, meet the country's international obligations and derive maximum benefit from international cooperation in these areas;
6. ensure that Government divests its interest in the state-owned entities and entrenches the key principles of restructuring and privatization in the electric power sector;
7. promoting competition to meet growing demand through the full liberalization of the electricity market; and
8. reviewing and update electricity laws in conformity with the need to introduce private sector operation and competition into the sector.

The driving principle for the reform is the desire by the Nigerian government to withdraw from the power sector as owner, operator and regulator of NEPA and to have commercially operated entities functioning in a competitive and appropriately regulated electricity market.¹ Pursuant to this objective, the Electric Power Sector Reform Act was passed, incorporating the above principles and measures for their implementation. Whilst much progress has been made in opening the Nigerian electricity market to private investors, there persists deficit in generation capacity and poor incentives for massive investments into the sector.² For example, while Nigeria generated 4, 612MW in 2014 with an estimated population of 170 million, Egypt and South Africa generate 24700MW and 48,086 MW with populations of 82.1 million and 52.9 million respectively. This is despite the abundance surplus of energy resources in Nigeria. The country's energy source is abundant, given the range of

¹ Arowolo, 2005 Nigeria power sector reforms; Why distribution requires a clear strategy, OGEL Electricity law and regulations, available at www.ogel.org Strategy, 2.

² Oke.Y. 2012, *Beyond Power Sector Reforms: The need for Decentralized Energy Option (DEOPs)* Journal of Contemporary Law, Lagos.

sources such as coal, hydro, natural gas and renewable. Available energy resources in Nigeria include, over 25million barrels of oil, 4billion metric tons of coal and lignite, an estimated 187 trillion cubic feet of gas and a huge reserve of tar sand, solar radiation, hydro power, biomass,³ etc.

The issue is that, to what extent has the reform process imparted on Nigerians and the economy? This is the question this study attempts to investigate in order to determine the level to which the reforms have translated to positive development or otherwise, due to the policies and the nature of the institutions, responsible for activities in the energy sector. Hence, the socio-economic development of Nigeria is still characterized by epileptic electricity generation and distribution.⁴

Electricity Reform Models in Nigeria and Concerns

Through loans, grants and reform suggestions made in the 1970s and early 1980s, the international financial institutions, alongside other official lenders such as the Paris Club as well as private banks, encouraged the economic development initiatives of many developing countries, including African countries, leading to the establishment of many public enterprises and expansion of the supply of public services provided by the state.⁵ Some of the strands of development thinking at the time favoured state economic intervention and deemphasized the role of markets, and many developing countries had self-sufficiency as their industrial goal, with state industrial undertakings aiming to produce enough goods for the country's needs while the state restricted the importation of foreign goods.⁶ There was a shift from the 1980s; the international financial institutions have urged many borrowing countries to undertake stabilisation and structural adjustment policy reforms with a view to revamping their national economies, improving the prospects for long-term economic efficiency and facilitating economic development. They have included privatisation as one of the conditions in their funding packages for many of these countries.⁷

The power sector is either regulated as a state owned or private entity.⁸ The shift from a vertically integrated public monopoly to a more competitive power sector by undertaking the structural, regulatory and ownership reforms was also strongly encouraged by the World Bank, International Monetary Fund (IMF) and other international financial institutions in developing and transition countries. The World Bank officially changed its lending policy in 1992 for power sector development from traditional project lending to policy lending, implying that any borrowing country should adopt the market based standard reform model. This background explains the appeal of privatization and market-oriented

reform in developing and transition economies which, at times, preceded other necessary reform measures (Jamashb, 2006).⁹

Oluseyi¹⁰ conducted a comparative analysis between electric power reforms in Nigeria with some developing countries, namely: Ghana, Egypt, Kenya and South Africa. He observed that these countries employ almost or closely related models, however whereas the reform outcome in some of the countries studied were successful and effective, that of Nigeria is found to be backwardly integrated. In his view, factors such as weak legal and institutional framework, inadequate transmission and distribution infrastructures, conflicting and overlapping regulatory functions, absence of guarantor for payment risk, finance and lack of adequate incentives for independent power producers (IPP) are responsible for the poor performance of the power sector in Nigeria, despite the huge resource investment by the government. Conversely, China, India and Brazil present electric power sector reforms that produce a robust and efficient power supply to the citizens after the reform; for example the poor generation in India before the reform witnessed an astronomical improvement due to institutional and structural changes in the management structure and policy. Worthy of further analysis here is the situation in Ghana which has been praised by Nigerians. Three institutions were predominant in the administrations of electricity in Ghana before the country embarked on reforms. The institutions were the policy making institution - Ministry of Energy and Mines, saddled with the responsibility of discharging its responsibility for establishing and monitoring the implementation of overall policy in the electricity sub sector; The Volta River Authority (VRA) which was created in 1961 and was responsible for electric power generation, transmission and sales in bulk; and Electricity Corporation of Ghana created in 1963 to take over the assets and functions of the former Electricity Division of the Public Works Department. Currently, ECG retains the obligation to supply electricity to all parts of the country, except in specified consumers in the northern zone.

In 1997 the government accepted recommendations for the Ghanaian power sector to restructure the standard model of reform. The vertically integrated Volta River Authority (VRA) was to be unbundled into separate transmission and system operations companies; VRA was to retain generation and the national distributor of electricity, while the Electricity Corporation of Ghana was to be horizontally unbundled in readiness for privatization. Also, independent power producers (IPPs) were to be allowed to enter the market.¹¹ When Ghana's electricity was reformed in 2008, the Ministry of Energy and Mines retained the policy making responsibilities. The Volta River Authority (VRA) competes

³ A. Adenikinju 2008, Efficiency of the Energy sector and its Impact on the Competitiveness of the Nigerian Economy: *International Association for energy Economics*.

⁴ Balikisu Saidu, 2011. 'Committing to legal and regulatory reform; An Analysis of the legal and regulatory framework of the Electricity supply industry in Nigeria', *Journal of Energy & Natural Resources Law*, Vol. 29 Issue 3, p. 355.

⁵ Ewelukwa 38-37.

⁶ Ewelukwa 38-37.

⁷ Ewelukwa 38-37.

⁸ Paul L. Joskow, "Lessons Learned From Electricity Market Liberalisation" (2008) 29 *The Energy Journal* 9, 10.

⁹ Jamashb 2006. Between the state and market; Electricity sector reforms in developing countries, utilities policy ,vol 14,issue 1,march 2006. He argues that there is a need for redefining the role of the state rather than a full withdraw from the sector and that many countries should adopt simpler reform model and gradual implementation.

¹⁰ Oluseyi P. et al: 2012, Evaluation of the Road map to power sector Reforms in Developing countries, 9th International conference on the European Electricity market (FEMIZ) Florence Italy May 10-12-2012

¹¹ Power Sector Reform and Regulation in Africa, <http://www.gsb.uct.ac.za/files/ghana.pdf>

as a generator and was not privatized. In other words, the generation of electricity is being undertaken freely by private investment. In addition, the reforms allow that electric power generators can sell power to distribution enterprises, major consumers, intermediaries, or the system. The transmission functions of the whole system were made "open access" and managed by subsidiary company of VRA (as Public Limited Liability Company). At the distribution level, ECGs were established as Holding Companies with autonomous Regional Distribution Companies. Consumer cooperative group with consumption over certain demand could be provided with concession to distribute power for their consumers.

Iwayemi 2008¹² observes that reforms in the power sector suffer a setback due to political lockjaw and corruption. He further points out that the suspension of the NIPP by the Federal Government citing constitutional reasons associated with its financing the sector from excess crude oil fund which consequently reduces the per capital income consumption rate dwindle below 1kw, which according to him cannot support any serious economic growth agenda. Majidon (2008)¹³ argues that nuclear energy is the cheapest energy source available in the northern part of Nigeria, and that Nigeria's proximity to Niger Republic provides an opportunity to produce cheap power at about 3/kWh, which can be sold to the bulk power purchaser at the equivalent of about 22/kWh.

In Chile, Chile is often identified as the country that first started electricity reforms. Recognizing the importance of cost recovery in public utility services, it reformed tariffs before privatization but its post reform market involved less restructuring, less competition, and more regulation than some of the reform cases. Still, privatization, incentive-based regulation, entry by incumbent suppliers in response to administrative set generation prices, and service obligations imposed by regulation on distribution companies have all contributed to large efficiency gains (Joskow 2008)¹⁴. Following the reform, operating efficiency of the electricity sector has shown significant improvement. For example, labour productivity in generation has increased and energy losses have declined. At the same time, there has been a considerable decrease in electricity prices. In Argentina, the installed generation capacity has increased and operating performance in terms of plant availability and labour productivity has improved.

Jamasb et al. 2005¹⁵ expressed the view that, the reform process has appeared to be slow and difficult with no clear theoretical and empirical consensus regarding the economic gains of reform apart from improvement in technical

efficiency in the sector across many of the reforming countries. This view was supported by the Laffont 2005¹⁶. The regulation of the electricity sector in developing and transiting country continue to remain a major challenge in the transition to accelerating competition in the electricity sector as regulation suffers from weak institution environment.

Joskow 2006¹⁷ however developed a model that assumed that not all activities of the electricity supply industry are inherently monopolistic and electricity could also be generated and supplied by competing firms in organized markets and not by the state. He believed that vertical separation of these distinct activities would guard against cross-subsidization between competing businesses and regulated businesses as well as discriminatory practices such as denial of access to networks. Oluseyi¹⁸ identifies low water level at our various dams (Kainji, Jebba, and Shiroro) in recent years and frequency of gas supply disruption to generating plants coupled with incessant gas pipeline attacks as some of the challenges militating against power generation in Nigeria.

Bacon and Besant Jones (2006)¹⁹ maintained that the size of the electricity industry in a country can limit the application of reform models and benefits from pursuing market based electricity reform. For example, it is not appropriate to unbundle a power system with less than 1000MW of capacity into many separate generation and distribution companies with the assumption that effective competition can be promoted. In the UK for instance, there was heavy investment in energy sector which resulted in power generation in excess of power demand. When the country realized that there was sufficient generation capacity, the energy sector was unbundled to introduce competition. In Nigeria on the other hand, the electricity supply was not only erratic but was grossly insufficient when the power sector was unbundled. This among other things accounts for IPP reluctance to make investment in the Nigerian power sector, due to the fear of lack of guarantee for recovery of investment on new plants as a result of improper regulatory framework that exist in EPSR Act 2005.

Dubash (2002)²⁰ found that in most countries investigated, electricity has been regarded as a public service since the middle of the 20th century. Majority of developing countries have now adopted universal access to electricity as a development objective. Adequate and reliable supplies of electricity have been a principal focus of national energy policies, as a consequence of its role in enabling growth and improving people's standard of living. He further states, when private sector actors delivers electricity, the availability and reliability of the supply is regarded as a responsibility of

¹² Iwayemi. A. (2008) – Nigeria dual energy problem: policy issues and challenges: International Association of Energy economists.

¹³ Majidon (2008) – Power sector Infrastructural development by 2020, Issues and challenges: paper presented at 1st International conference NAEF / IAE at trans cop Hilton Hotel.

¹⁴ Joskow (2008) – Lesson learned from Electricity market liberalization: The energy Journal, special issue

The future of Electricity: International Association of Energy Economics 2008

¹⁵ Jamasb et al 2005 – Electricity Sector Reform in Developing Countries Asume of empirical Evidence on Determinants and performance. – World Bank.

¹⁶ Laftout J. 2005: Regulation and Development – Cambridge University Press, Demonstrates how the debate between price Cap regulation and cost of service regulation is affected by the characteristic of LDCs

¹⁷ Joskow 2006 – Introduction to Electricity Sector Reform in developing countries utility policy. Vol 14 (i) pp 14 -

¹⁸ Oluseyi Ibid at page 5

¹⁹ Bacon and Besant Jones 2002:Global electric power reform, privatisation and liberalization of electric power industry in the developing countries available at www.zonaelectrical.com

²⁰ Dubash, (2002) Transforming power: Energy Environment and society in conflict, Energy and Environmental policy.

government. Watson et al²¹ are of the view that the barriers to expanding access to electricity have been broadly categorized as financial and economic. They observe that the first of these include high costs of investment and operation (and the affordability of tariffs) access to investment finance and the effectiveness of cost recovery mechanism and the second category are technical and managerial capacities to design, install and operate electricity system, and the efficiency of the technologies developed. They further stress that the third category includes, the adequacy of the policy framework and the effectiveness of institution responsible for implementing policy.

Joskow 2001²² shows that poor market design, coupled with inappropriate regulatory and political intervention can rapidly produce extremely unsatisfactory outcome when capacity is tight, particularly if the shortages are unexpected. This observation seems to corroborate with Joskow's 1998²³ assertion that the success of the infrastructure sector reform in particular, electricity power, partly depends on the creation of effective regulatory institution. He therefore submits that issues to be addressed in designing the institution would include establishing regulatory goals and deciding on the structure and organization of regulatory agency. Isola. A.W's review showed that reforms in electricity sector are a universal phenomenon, both developed and developing countries have at one time or the other embarked on the reform experiment. The importance of the electricity industry on social welfare and economic development implies that reforms in the sector are crucial. The factors responsible for the reforms in the electricity sector in both developing and developed countries are similar. However, the model employed or adopted to promote the economic revolution and improve citizen welfare differs considerably.

Some of the factors responsible for these include but not limited to, (i) Level of power sector development (ii) The quantity of energy resources available to generate electricity (iii) Economic strength and political will (iv) Environmental issues and (V) Available technology.

Srinivasan 2002,²⁴ in his study has recommended that state Electricity Board should be reformed into bankable, commercially and professionally run corporate enterprises, free from political and bureaucratic interference. He further opined that it is a clear solution plan to create condition conducive for private sector to take on the task of further expansion of capacity. Ishola 2012²⁵ observes that market structure can either make or mar the success of reforms. He stressed that the size of the market must neither be too large so as not to create the problem of excess capacity nor too small with attendant abuse of market power. However, it has been found that duopoly is prone to the exercise of market power. He posited that recent empirical study provides some

evidence that generators have exercised market power in both California and the United Kingdom (UK)²⁶ which is partly attributed to poor market structure design. Perhaps, a study needs to be conducted to ascertain the optimum market structure of the country, taking cognizance of the nature of demand and the cost structure of electricity in Nigeria that can guarantee production efficiency and allocation efficiency.

The electricity power sector reforms in Nigeria, which led the unbundling of NEPA in November was tailored towards power sector reforms in the western economies. The main objectives among others were to introduce competition through the participation and engagement of private investors in the power production chain, establish an independent regulator, restrict government's role on policy formation and execution, and develop a whole sale electricity market, in order to promote efficiency and energy security in Nigeria.

The electricity power sector reform Act of 2005 (EPSR) codified the objectives, creating a new legal and regulatory frame work for the sector, including the elimination of NEPA and provisions to ensure privatization of the successor companies, establishment of the Nigeria Electricity Regulatory Commission (NERC); establishment of the Rural electrification agency and a consumer Assistance funds to bridge the funding gaps for low income earners. After almost a decade of implementation of the (EPSR) 2005 Reform Act, many researchers, observers, the academia and expert in the power industry conclude that, the reform exercise has failed. Some of the factors attributed to this include under exploration of the nation's abundant energy resources, government interference in the operation of the regulators, conflicting and ambiguity of legal framework, poor operational performance, and inadequate supply of gas, low water level and insecurity.

In summary, the liberalisation of the sector has not enjoyed the predicted success due to both institutional and regulatory challenges. Furthermore, the push to full power sector restructuring unbundling based on the competitive market model involves an even higher level of complex financial engineering. At this point investors willing to finance project in the power sector require a secured legal structure, legislative framework and institutional capacity. Guarantee had to commensurate with the new risk profile.

The progression of the power market model from a vertically integrated government owned monopoly to the privatization and unbundled competitive structure will be the expected goal of government. This desired restructured power sector will definitely lead to increase competition, more complexity and uncertainty that will requires new management mechanisms. However, some economists (Roland, 1994 & Summers, 1994)²⁷ express concerns, about the political constraints and other institutional deficiencies, such as an effective legal system, necessitating a more gradual approach to reforms in transition economies. They

²¹ Watsons 2004 Power sector reforms in Brazil and its impacts on energy efficiency and research and development.

²² Joskow 2008 – Lessons learn from Electricity Market Liberalisation, Energy Journal Special Issue, volume 29

²³ Joskow - ibid Srinivasan (2002) Public sector, main hope, the Hindu 23rd December.

²⁴ Srinivasan 2002. Public sector main hope the Hindus 23rd December

²⁵ Isola A. 2012 An analysis of Electricity market structure and its implication for energy sector reform in Nigeria; Global advance Research Journal of management and business study vol. 1 (5) pages 141 – 149.

²⁶ Wolfram C.D. 1999: Measuring Duopoly power in the British Electricity Spot Market, American Economic Review Volume 89, No 4. Pages 805 - 826

²⁷ Roland etal 1994-1998, Competition, Regulation and privatization of electricity generation in developing countries; does the sequencing of reforms matter, centre for regulation and competition, institute for the development policy and management university of Manchester, UK

argue that privatizing without first establishing the effectiveness of institutional infrastructures required of private investment is to flourish risks failure (Roland, 1994 ;)²⁸. Neglecting the institutional environment as a pre-condition for successful privatization will damage the emergence of an effective private financial sector and prevent a gradual 'hardening' of budget constraints (Roland, 1994; Zhang, 2002)²⁹

Anthonahe *et. al.* (1991) viewed that the India power sector was opened and kept for private participation in 1991 to hasten the increase in generating capacity and to improve the system efficiency as well. The authors observed that Independent Power Producers (IPP) claim that their progress has been hindered by problems such as litigation, financial arrangements, and obtaining clearness and fuel supply agreement. On the other hand, the state electricity board has been burdened by Power Purchase Agreement (PPA) that favour the IPPs with such a class as availability payment irrespective of plants utilizations, tariff reflecting, high capital costs and returns on investment. They also explained the process of inviting private participation in power sector; the problems experienced and suggested the restriction of the power sector including the formation of central and state electricity regulating commission. However, some important problems have not been addressed such as improving the generation capacity without corresponding improvement of the transmission and distribution facilities which is likely to further undermined system efficiency.

Soverin Borenstein (2002)³⁰ felt that restriction of electricity market is a more difficult task than that of aimless, tracking natural gas and oil due to unusual combination of extreme electricity supply and extreme electricity demand. Contracting can help to control the soaring wholesale prices and solve some problem to create a stable, well-functioning electricity market. He suggests that the difficulties with the outcomes so far from the experiments of California, New York, Pennsylvania, England and Norway should not be interpreted as a failure of restricting but as part of launching process towards an electric power industry.

The industrialized countries have been in the forefront of this move to competitive power sector market and they have been better able to manage this new complexity and uncertainty because their power utilities are more commercially viable, their regulatory institutions are more mature, their capital market are more developed and their ability to finance and implement the necessary information technology is greater. The ability of the power industry in developing countries like Nigeria to adapt to more complex power sector market and financing structures have raised new challenges which those responsible for the power sector

reform have been less equipped to address.³¹ Most of the authors focused their attention on the challenges and potentials of power generation in Nigeria with limited details on the legal and institutional framework of EPSR Act 2005. In the light of that, this study discusses the various legal and institutional challenges, reforms and policies recently adopted and are being implemented by the Government to improve the power sector performance in Nigeria

Conclusion

Overall, the gap in the literature which this study addresses lies in the analysis of legal and institutional framework in power sector reforms and issue of adoption of reform models without incorporation of local contents and peculiarities. For example, none of the nations where both vertical and horizontal models were copied generate as low as 4,000MW of electricity before the unbundling of the sector. Secondly, most nations embark on total liberalization of the entire energy sectors, whereas the reforms in energy sector in Nigeria were narrowed down to electricity production with heavy reliance on availability of gas. Thirdly, where gas is used to fuel electricity generation, the supply is adequate and effective, contrary to the situation in Nigeria where there is inadequate supply of gas due to disparity in local price of the commodity and international market price is prevailing. Lastly, where regulators are not independent and their operations are under the influence of government, the result is always ineffective regulation, weak institution and low productivity in all the IEA member countries. Through competition in liberalized markets, incentives are created to drive for more efficient operation of electricity systems and more efficient investment decisions in terms of timing, sizing, sitting and choice of technology. Even if liberalised markets leave critical policy challenges unresolved, the transparency created by competition tends to improve the framework for targeted policy actions to address issues such as environmental quality and reliability (IEA, 2005).

Traditionally, electricity sectors developed and operated within strictly regulated frameworks in which vertically integrated utilities have handled most or all activities – from generation to transport to distribution. Moreover, it has been a centrally planned activity, wherein needs are assessed and fulfilled by electricity system planners and all associated costs are passed on to consumers. Traditionally, vertically integrated utilities tend to create substantial overcapacity, a fact that became more obvious when electricity demand growth slowed during the 1980s and 1990s in many IEA member countries. In addition to reducing this overcapacity, liberalization has also been shown to provide large potential gains from improved efficiency in the operation of generation plants, networks and distribution services.

Liberalization is expected to bring large economic benefits for consumers and societies in the long term and evidence so far, indicates that markets can deliver these benefits. However, in the short term, certain groups may not realize immediate benefits or may even experience losses. Vertically

²⁸ Ibid

²⁹Soverin Borenstein (2002) The trouble with electricity markets; understanding California's restructuring disaster, journal of economics perspectives Vol16, No. 1, winter 191-211.

Antoinette etal (1999) India power sector liberalization: An overview Economic and political weekly, Vol xxxiv, No. 23.

³¹ Adoghe A.U (2009) Power Sector Reforms-Effects on Electric Power Supply Reliability and Stability in Nigeria International journal of Electrical and Power Engineering volume 3 issue 1 page 36-42.

integrated utilities are likely to feel threatened by the requirement to unbundle. Consumer groups that previously benefited from subsidized electricity tariffs (at the expense of other consumers) may perceive liberalization as a loss as cross-subsidies are unwound. Certain segments of the utilities' workforce will feel threatened when open competition demands higher efficiency and increased labour productivity. Without question, one of the most critical policy challenges facing decision makers is the management of social and equity issues in distributing the benefits of electricity market liberalization.

Whilst majority of these studies have employed a multidisciplinary approach, some legal scholars have also examined the development of the Nigerian power sector from a strictly legal perspective. Omorogbe has consistently pointed out for the need for Nigeria to have a coherent policy and implementation agenda for the entire power sector and calls for a legal reform that takes into holistic consideration of the entire energy sector.³² Larson has also called for the need for the development of the institutions that will effectively pilot the reform of the Nigerian power sector, and for the need for commercialization and privatization that meets the countries peculiarities. Along similar paths are series on contributions made by Arowolo, calling for the distribution legal regime to have a clear strategy.³³ Arowolo in another research gives an institutional review and offers a discussion of the licensing regime.³⁴ A further build up to these excellent scholarships is the work of Saidu³⁵ that examined the legal and regulatory framework in the ongoing reform. Oniemola has examined the power sector from a renewable energy law perspective and also noted that the reform process does not offer much support for renewable energy.³⁶ This study builds upon all these works in that it focuses on the legal and institutional framework of the electric sector reform in Nigeria by taking holistic analyses after the government has completed the privatisation and commercialisation of the sector and has reached a stage of the transitional electricity market. This research therefore provides a full account as well as a full picture of what current state of the legal reforms and whether there are much work to be done in order to set a new legal agenda for Nigeria, more so that the reform is yet to be considered as having meaningful impact in the supply of electricity to consumers. It has been asserted that in competitive wholesale power markets, prices are determined by the forces of supply and demand rather than regulatory fiat; prices are established in two settings: first, longer-term bilateral power purchase agreements and secondly, real-time or day-ahead spot markets.³⁷ In the PPA setting, a generator or other wholesale seller bargains with a retailer or other

buyer to reach a contractual agreement but in the spot markets, by contrast, are multilateral, and the price is established through an auction—a bidding process that establishes a market-clearing price for individual time increments during the day.³⁸ This therefore, calls for a critical reassessment of the legal and institutional framework for the power sector reform to see how Nigeria can effectively progress in the revamp of the power sector in anticipation of the competitive electricity market.

¹ Arowolo, Licensing of electricity business in Nigeria: issues and comments 29-37.

¹ Balkisu Saidu, 'Committing to Legal and Regulatory Reform: An Analysis of the Legal and Regulatory Framework of the Electricity Supply Industry in Nigeria' (2011) 29 (3) *Journal of Energy & Natural Resources Law* 355, 355-382.

¹ Powering Nigeria through RE investment.

¹ Emily Hammond and David B. Spence, *The Regulatory Contract in the Marketplace* (2016) VANDERBILT LAW REVIEW Vol. 59, No. 1, 141-154, 142-143.

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³⁸ 154.

³² See generally, Omorogbe, Why we have No Energy

³³ 'Nigerian Power Sector Reform: Why Distribution Requires a Clear Strategy' Oil, Gas & Energy Law Intelligence

³⁴ Arowolo, Licensing of electricity business in Nigeria: issues and comments 29-37.

³⁵ Balkisu Saidu, 'Committing to Legal and Regulatory Reform: An Analysis of the Legal and Regulatory Framework of the Electricity Supply Industry in Nigeria' (2011) 29 (3) *Journal of Energy & Natural Resources Law* 355, 355-382.

³⁶ Powering Nigeria through RE investment.

³⁷ Emily Hammond and David B. Spence, *The Regulatory Contract in the Marketplace* (2016) VANDERBILT LAW REVIEW Vol. 59, No. 1, 141-154, 142-143.

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