



A Comparative Analysis of Electricity Regulatory Frameworks in Nigeria and South Africa

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To cite this article: Dominic Obilor Akabuiro ‘A Comparative Analysis of Electricity Regulatory Frameworks in Nigeria and South Africa’ (2020-2021) 16 *The Nigerian Juridical Review*, pp 201 – 218.

To link to this article: <https://doi.org/10.56284/tnjr.v16i1.20>

A COMPARATIVE ANALYSIS OF ELECTRICITY REGULATORY FRAMEWORKS IN NIGERIA AND SOUTH AFRICA

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Abstract

Africa is tagged the 'Dark Continent'. As seen by some analysts, the concept of 'dark continent' is a symbolic representation of Africa's underdevelopment on the one hand and its inability to generate enough electricity necessary for economic and human development on the other hand. The need for a decentralized electricity regulatory framework vis-à-vis effective regulatory institutions in improving power generation and supply cannot be overemphasized. Thus, the failure of most Sub-Sahara African (SSA) countries to significantly improve their power sector could be blamed on non grass-root oriented and non-inclusive electricity regulatory models. South Africa runs a decentralized electricity regulatory model which is highly contributory to her relatively high rate of electricity access. The objectives of this work are to attempt a comparative analysis between South African (SA) and Nigeria's regulatory power sector frameworks and to understand the impacts of SA's regulatory frameworks on its power generation with the view to drawing lessons for Nigeria. The major argument of this paper is that SA's decentralized electricity regulatory model is highly contributory to the country's power sector performance as against Nigeria's centralized model with has dwindled its power sector performance. This paper examines the existing regulatory frameworks of both Nigeria and South Africa, their impacts on the various aspects of power sector. The paper also identifies salient lessons for Nigeria from SA experience and makes other recommendations that could improve Nigeria's power sector regulatory regime and overall performance of the sector.

Keywords: Electricity regulatory frameworks, decentralized and centralised regulatory models, comparative analysis, South Africa, Nigeria

1. Introduction

The evolution of electricity in South Africa, boasts of one of the most historic development of the energy sector in the world with a very long history of electricity technical capacity. The country's electricity dates back to 1882 when the first electric lights were installed at the railway station in Cape Town in the Cape Colony; barely two years after Thomas Edison invented the incandescent lamp in 1879. In 1882, the same year that the world's first central power station began operating in New York, the mining city of Kimberly in the Cape installed

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the first electrical streetlights in South Africa, well ahead of London which was still using gaslights.¹

On the other hand, Nigeria electricity generation development started much later than South Africa in 1896, 15years after the commencement of electric power generation in England.² The first power generation station in Nigeria was built in Lagos and had an installed capacity of 20MW. The power generating station was built and managed by the Public Works Department (PWD) and other municipal authorities.

In a bid to unify electrical power development, the colonial government created the Electricity Corporation of Nigeria (ECN) in 1950 and placed the existing utility and units under its control. By 1964, hydropower was a significant contributor to the Nigerian energy mix with the construction of Kainji Dam through the creation of the Niger Dams Authority (NDA) in 1962. By 1966, all 36 state capitals, including the federal capital territory had been on the national grid. Subsequently, ECN and NDA formed a unified body called the National Electric Power Authority (NEPA) in 1972 with the responsibility of power generation, transmission, distribution, among many others.³

NEPA faced numerous challenges which made the government initiate a restructuring process by modifying the electricity and NEPA Act in the late 1990s. However, these reforms were not exhaustive; hence the National Electric Power Policy (NEPP) was enacted in 2001. This policy provided a framework for restructuring NEPA which led to the creation of the Power Holding Company of Nigeria (PHCN); which assumed the assets, liabilities, and employees of NEPA in 2005; through the passing of the Electric Power Sector Reform (ESPR) Act, to serve as a legal framework for the achievement of the reform objectives of the NEPP.⁴

The Electric Power Sector Reform Act (ESPRA)2005 removed the government's monopoly of the power sector, increased private sector participation and inaugurated a regulatory body called the Nigerian Electricity Regulatory Commission (NERC), responsible for establishing grid standards, codes, regulation for electricity. The launch of the Roadmaps for Power Sector

¹R Christie, *Electricity, Industry and Class in South Africa* (State University of New York Press, Albany 1984)

²OI Okoro and E Chikuni, 'Power Sector Reforms in Nigeria: Opportunities and Challenges' (2007) 18 (3) *Journal of Energy in Southern Africa*.

³AO Soyemi and others, 'A Robust Energy Policy Review of Selected African Countries: An Impetus for Energy Sustainability in Nigeria (2021) <<https://iopscience.iop.org/article/10.1088/1742-6596/1734/1/012028/pdf>> accessed 30 November 2021.

⁴Ibid.

Reform in 2010 began the unbundling of the Nigerian power sector and was completed in 2013 and 2014 respectively.⁵

Since the inception of electricity in Nigeria, its power sector continued to trail behind South Africa's but also the pace of development in terms of generation and distribution capabilities continued to maintain an unacceptable low pace.

SA power sector does not only have a superior historic background but also has a more solid generation and distribution capacity. Although Nigeria is the largest economy in sub-Saharan Africa, it has serious growth constraint in its power sector. With its large oil, gas, hydro and solar resources, it still has a low generation potential of 12,522 MW of electric power from existing plants and on most days, only about 4,000 MW gets dispatched which is insufficient for a country of over 195 million people, mostly generated from non-renewable sources.⁶ SA on the other hand has an installed generation capacity of 58,095 MW from both conventional and renewable energy sources for a population of less than 60 million people.⁷ Interestingly, Nigeria's current electrification rate stands at 60% while that of SA is 95%. This article is an attempt to examine electricity regulatory frameworks of both jurisdictions and their impacts on the overall performance of both jurisdictions power sectors.

The Nigerian power sector is wrapped with challenges of over-centralized electricity policy implementation, regulatory uncertainty, gas supply, transmission system constraints, and major power sector planning shortfalls that have kept the sector from reaching commercial viability. SA on the other hand is not absolutely free of problems in its power sector but its decentralized regulatory model and different levels of its government policy and regulatory actions have had grassroots impacts. Again, different levels of governmental authority has taken a number of legislative and regulatory steps towards increasing social inclusion and a 'just transition plan' to renewable energy.⁸

Although, South Africa has not fully liberalized its power sector as ESKOM, a government owned entity still generates about 90% of electricity used in the country. Nigeria on the other hand, in 2005 unbundled its power sector into 18 companies comprising of six generation companies (GENCOs), one transmission company (TCN) and 11 distribution companies (DISCOs) with National Electricity Regulatory Commission (NERC) as regulatory institution and subsequently in 2013 privatised them save for the Transition Company of Nigeria (TCN).

⁵Ibid.

⁶ Power Africa Fact sheets <<https://www.usaid.gov/powerafrica/nigeria>> accessed 30 November 2021.

⁷ Ibid.

⁸ Ibid.

South African energy sector though rated to be the best in Sub Saharan Africa, in terms of electricity generation, distribution and access seems to have one major shortfall as perceived by the rules of competition law. ESKOM maintains a monopolistic status as a state-owned institution saddled with power generation, transmission and supply. This negates the global trends of liberalization of the power sector and increased private sector participation that should promote competition in the electricity market. However, as a state-owned entity, it has achieved massive results in electricity access compared to Nigeria. There is little or no striking change with the privatization of Nigeria's electricity sector. There appears to be stagnancy with a number of post-privatization issues.

Nigeria, being the most populated country in SSA, its delivery is less than required on electricity. It has a lot to learn from climes whose power sector is working like SA. If Nigeria truly would continue to be the giant of African, then it must salvage its power sector for growth and sustainability.

2. South Africa's Electricity Regulatory Frameworks

2.1 Legal Frameworks

SA's power sector is governed by the following legislations:

2.1.1 The Constitution of South Africa Act 108 of 1996

The South Africa Constitution supports the involvement of various levels of the government in the electricity value chain. The Constitution gives Municipalities the right to administer local government functions which includes electricity and gas reticulation; municipal planning, etc.⁹ The Constitution also permits the Provincial Executive, an intervening power of issuing directives, to the Municipal Council who fails in its constitutional duties to provide electricity and water, and also empowers the Provincial Executive to assume responsibility to discharge that same obligation when the Municipality fails to discharge same.¹⁰ Also, the Constitution gives the national government power to legislate for effective performance of Municipalities obligations in the provision of electricity and water services to the people.¹¹

These provisions allocate duties for electricity provision to the Municipalities and supervisory and monitoring duties on the Provincial Authority, the citizens therefore can sue the Municipalities for non-performance or administratively bring appropriate notices or petitions of non-performance of the Municipalities to the Provincial Authority. Where there is a duty in law, there is also a right. Where there is a duty for one to perform an act in law, there is a right for another to enjoy, same or bring an action in court for violation of this right.

⁹ Constitution of South Africa Act 108 of 1996 s 156(1) and (2).

¹⁰ Ibid 139(1).

¹¹ Ibid 155(7).

2.1.2 The National Energy Regulator Act, 2004 (NERA)

It establishes a National Energy Regulator (NERSA) for the regulation of the electricity, piped gas, and petroleum pipeline industries. This Body established by this Act ensures that the regulatory laws are set in motion.

2.1.3 The Electricity Regulation Act, 2006 (ERA)

It establishes a national regulatory framework for the electricity supply industry, makes NERSA the custodian and enforcer of the national electricity regulatory framework, provides for licences and registration as the manner in which generation, transmission, distribution, reticulation, trading and the import and export of electricity are regulated, and also regulates the reticulation of electricity by municipalities.

2.1.4 The National Energy Act, 2008

This Act directs the Department of Minerals and Energy to ensure that diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation, while taking into account environmental management requirements.

2.2 Institutional Framework

2.2.1 National Energy Regulator of South Africa (NERSA)

NERSA is the primary regulator in the electricity sector and assumes its authority pursuant to the NERA and the ERA. The mission NERSA is to regulate the energy industry in accordance with government laws, policies, standards and international best practices in support of sustainable development.¹²

NERSA's strategic objectives are to: implement relevant energy policy efficiently and effectively; implement relevant energy law efficiently and effectively; implement relevant energy regulations efficiently and effectively; identify, develop and implement relevant energy rules efficiently and effectively; establish the credibility, legitimacy and sustainability of NERSA as an independent and transparent energy regulator; create an effective organisation that delivers on its mandate and purpose; and evaluate the Energy Regulator's effectiveness.¹³

For the purpose of operating a generation facility, NERSA is responsible for issuing electricity generation licences and registrations for such facilities. No person may operate any generation facility without a licence, save for certain exemptions set out in Schedule II of the ERA or determinations made by the Minister of Minerals and Energy. The exemptions mostly relate to the operation

¹² National Electricity Regulator of South Africa
<<https://nationalgovernment.co.za/units/view/131/national-energy-regulator-of-south-africa-nersa>> accessed 30 November 2021.

¹³Ibid.

of smaller generation facilities of no more than 1MW and those generation facilities operated for own use or not connected to the grid. The purpose of the exemptions is to exempt various categories of generation facilities and electricity resellers from the requirement to hold a licence under the ERA in defined circumstances and to require such activities to be registered with NERSA.¹⁴

3. Nigeria's Electricity Regulatory Frameworks

3.1 Legal Frameworks

3.1.1 Constitution of the Federal Republic of Nigeria (CFRN) 1999

The Constitution vests law-making powers for electricity generation and transmission across Nigeria on the National Assembly. Significantly, the damming of water sources within Nigeria for hydropower generation and the establishment of renewable energy power plants in Nigeria is chiefly under federal jurisdiction.¹⁵ However, the Houses of Assembly of the states are allowed to make electricity laws that extend to areas within their states not covered by the national grid system or to regulate power stations established by the states in this regard.

3.1.2 The Electricity Power Sector Reform Act (EPSRA) 2005

In 2005, the Nigerian power sector was liberalized by the introduction of the EPSRA. This Act, which is a consequence of the National Electric Power Policy adopted in 2001, provides a new legal and regulatory framework for the sector. The fundamental change it entails is the privatization of the government-owned electricity company and the process towards a completely liberalized market. It makes provisions for the vertical and horizontal unbundling of the electricity company into separate and competitive entities; development of a competitive electricity markets; sets out a legal and regulatory framework for the sector; a framework for rural electrification; a framework for the enforcement of consumer rights and obligations: establishment of performance standards. It resulted in the transfer of the previously public power company, NEPA, into a (temporary) Holding Company, the Power Holding Company of Nigeria (PHCN) - called "Successor Company".¹⁶

¹⁴ Werksmans Attorneys, 'Electricity Regulation in South Africa' (2019) <<https://www.lexology.com/library/detail.aspx?g=d6ac004e-6663-4756-b44c-095e1a3e237e>> accessed 30 November 2021.

¹⁵ CFRN 1999 Schedule 2, Part II, Item 14 (a)–(c).

¹⁶ 'The Nigerian Energy Sector: An Overview with a Special Emphasis on Renewable Energy, Energy Efficiency and Rural Electrification' (2nd Edition 2015) 68 <<https://www.giz.de/en/downloads/giz2015-en-nigerian-energy-sector.pdf>> accessed 8 October 2021.

3.1.3 The Environmental Impact Assessment Act (EIA) 1992

The EIA seeks to forestall the negative impacts of activities on the environment and this includes power generation and extraction. As at the time of its enactment, hydrocarbons constituted (and still constitute) a major source of energy for Nigeria and the generation and extraction had negative environmental impacts, hence the enactment of the EIA, which mandates project managers and parties to examine the likely impact of their activities on the environment before undertaking them. Under the current EIA Guidelines 2017, a power generating company or developer will be required to submit its environmental impact assessment to the Federal Ministry of Environment and obtain permission or a licence to proceed with the project.¹⁷

The Act makes it mandatory for environmental impact assessment to be conducted for projects likely to have significant effects on the environment, which also includes power projects. A power developer who intends to carry out power generation operations through the use of renewable energy must register the project with the Federal Ministry of Environment for an environmental impact assessment as Section 2 of the Act provides for the assessment of public or private projects likely to have a significant impact on the environment.¹⁸

3.1.4 The Nigerian Electricity Management Services Agency Act (NEMSA) 2015

The NEMSA seeks to enforce and maintain standards in power distribution. The NEMSA carries out technical inspections and testing for electrical materials. The standards are stipulated by the NERC in collaboration with the Standard Organisation of Nigeria (SON). In the judicial arena, there is minimal enforcement of the plethora of environmental laws in Nigeria as the case laws seeking to promote renewable and clean generation of power have usually been focused on petroleum activities. More so, it is further crippled by technical principles such as cause of action, the doctrine of ripeness and *locus standi*.¹⁹

An ordinary citizen is therefore discouraged from approaching the court to enforce the environmental laws where he or she is not directly and personally affected more than other citizens. Although recent decisions by the Nigerian Supreme Courts seem to reverse the strict reasoning, there is still yet to be an express opening of the court's doors.

In *Centre for Oil Pollution Watch v Nigerian National Petroleum Corporation*²⁰ the court reiterated the need to switch from the carbon-polluting

¹⁷ Israel Aye and others, 'The Renewable Energy Law Review: Nigeria' 2021. <<https://thelawreviews.co.uk/title/the-renewable-energy-law-review/nigeria>> accessed 12 September 2021.

¹⁸ Ibid.

¹⁹ A Fagbemi, 'Environmental Litigation in Nigeria: The Role of the Judiciary' (2019)10(2) *Nnamdi Azikiwe University Journal of International Law*.

²⁰[2019] 5 NWLR (Pt 1666) 518.

mind-set. Also, in *Amadi & Ors v Essien*,²¹ the court affirmed the enforceability of electricity regulation in Nigeria. Also, in *Barr Mike Kpemi v Benin Electricity Distribution Company PLC*,²² the court enforced the claimant's right to an electricity meter for the supply of electricity to his household.

3.2 Institutional Frameworks

3.2.1 The Nigerian Electricity Regulatory Commission (NERC)

NERC was established in 2005 under the Electricity Power Sector Reform Act.²³ NERC can basically be regarded as the administrative-technical arm of the Federal Ministry of Power. It has been conferred with the authority to grant and revoke electricity distribution licences and permits.²⁴ Its overriding mandate is to ensure that electricity is available to consumers. It has also, in furtherance of its powers, the Nigerian Electricity Regulation 2012, Mini-grid Regulations 2017 and Renewable Energy Feed-in Tariff Regulations 2015, which have been enacted to increase renewable power supply with particular focus on clean electricity generation and distribution.²⁵ NERC is primarily responsible for granting and issuing licenses and approvals for the electric value chain from generation, distribution, transmission, trading, system operations, metering, etc.

3.2.2 The Nigerian Electricity Management Services Agency (NEMSA)

NEMSA seeks to promote efficient distribution of electricity throughout the country although its particular focus is on the technical standards of operating and distribution plants. NEMSA collaborates with the Standards Organisation of Nigeria (SON) to stipulate and enforce standards for electrical materials. This regulatory agency is responsible for enforcing the technical standards in the power sector in collaboration with the SON to ensure that all electrical materials conform with the required standard and quality and also conduct an inspection of all electricity projects in Nigeria.

3.2.3 The Energy Commission of Nigeria (ECN)

The ECN was established under the Energy Commission Act as far back as 1979, although reformed in 1988 and 1989. The ECN generally formulates policies and makes recommendations to the government on energy development and distribution in Nigeria.²⁶ This includes advisory services to the government on energy strategies, preparation and dissemination of information, promotion

²¹(1993) 7 NWLR (Pt 354) 91 at 112.

²²Unreported suit (Suit No AK/94/2019).

²³EPSRA 2005 s 88. NERC was established under the Act as a body corporate with perpetual succession that can sue and be sued in its own corporate name.

²⁴The Nigerian Electricity Regulatory Commission Act ss 7–12.

²⁵Jama Onwubuariri, 'Reviewing the Legal Framework for Renewable Energy Projects in Nigeria'. Also, Michael Dioha, 'Nigeria's Renewable Energy Policy: A Fantasy or Reality?' (2018) *Renew Energy World*.

²⁶The Energy Commission of Nigeria came to being through the enabling Act No. 62 of 1979, as amended by Act No. 32 of 1988 and Act No. 19 of 1989.

of research, development and training, as well as liaising with international energy-related organisations. Energy research, development and training related activities are carried out in the six technical departments and the six energy research centres. Two of the centres, located at Nsukka and Sokoto, are responsible for new and renewable energy research. The centre in Lagos focuses on energy efficiency and conservation, while the centre in Benin City specialises in energy and environment. The two centres in Ilorin and Bauchi are responsible for hydropower research and research in the area of petroleum respectively. ECN was instrumental in launching the Renewable Energy Master Plan (2012).²⁷

3.2.4 The Transmission Company of Nigeria (TCN)

The TCN is the body responsible for the transmission of electricity in Nigeria, in collaboration with other stakeholders and market players. It focuses on the transmission network across the country. The TCN performs three major functions the market operator, system operator, and transmission service provider. TCN manages the electricity transmission network in Nigeria. It is one of the bodies established to issue licenses for the transmission of electricity. It is also responsible for the evacuation of electricity generated by the electricity generating companies and taking it to the distribution companies.

3.2.5 The Nigerian Bulk Electricity Trader (NBET)

NBET is a government owned public liability company. The Bureau of Public Enterprises and the Ministry of Finance are its two shareholders of record with 80% and 20% stakes respectively. NBET was established in 2010 in line with provisions of the Electric Power Sector Reform Act (EPSRA). It is a trading licensee holding a bulk purchase and resale license. Its mandate is to engage in the purchase and resale of electricity and ancillary services from independent power producers and from the successor generation companies. NBET signs PPAs with privatised generation companies, greenfield IPPs and existing state-owned power plants. They resell power via vesting contracts with distribution companies and sign power sales agreements with eligible customers directly. NBET's power purchase agreements (PPAs) with independent power producers are backed by credit enhancement instruments provided by the FGN.²⁸ Technically, NBETC acts as a clearing house between Gencos and Discos to guarantee all purchases in the market till the transitional phase is over. NBET uses a legal posture to drive and attract private sector investment through power

²⁷ The Nigerian Energy Sector: An Overview with a Special Emphasis on Renewable Energy, Energy Efficiency and Rural Electrification. 2nd Edition, 2015. <<https://www.giz.de/en/downloads/giz2015-en-nigerian-energy-sector.pdf>> Accessed 8 October 2021

²⁸ Ibid 55.

purchase agreement with energy developers.²⁹ The PPA entered into by NBET with Gencos and IPPs provides for:³⁰

- (a) Guaranteed payments for Capacity and Energy;
- (b) Mitigation of Sovereign Risks including SOEs obligations;
- (c) Cost reflective tariff with favourable ROI and FX protection;
- (d) Proper alignment of Force Majeure issues across Value Chain contracts; and
- (e) Downstream off-take through Vesting Contracts with DisCos.

4. Comparative Analysis of South Africa's and Nigeria's Electricity Regulatory Frameworks

SA and Nigeria are the two largest economies in sub-Saharan Africa. While Nigeria has a population of over 200 million people, SA has about 60 million people. Nigeria with its large population generates less than 5,000 megawatts of electricity while SA with a lesser population generates more than 45,000 megawatts of electricity. This translates to SA having more access to electricity than its Nigerian counterpart. In 2015 Nigeria unbundled its power sector but SA still runs a vertically integrated electricity system (although SA is currently in the process of unbundling). It was ordinarily expected that the deregulation and privatization of Nigerian power sector regime should have translated to a more efficient system with an improved electricity access. However, the contrary became the case. On the other hand, SA with a vertically integrated power sector generates more electricity with a higher access rate. The foregoing realities are imperatives that justify a comparative study of electricity regulatory frameworks of both jurisdictions. This is aimed at interrogating the impact of both jurisdictions regulatory frameworks on their respective electricity generation and access capacities.

Unlike the SA constitution, Nigeria's constitution does not assign any actionable duty to the local government authority or any other authority for the provision of electricity. However, the 1999 Constitution places electricity generation, transmission and distribution on the Concurrent Legislative List (see paragraphs 13 and 14 of the Concurrent Legislative List) thereby empowering both Federal and State legislatures arms of the government to make laws on the matter of electricity in Nigeria. This provision does not assign the duty to any level of government to provide electricity to the citizenry. Energy decentralization is the major reason why SA has recorded tremendous result in adequate electricity generation and supply. Even though the provisions of the

²⁹Yemi Oke, *Essays on Nigerian Electricity Law. The Role of a Bulk Electricity Trader* (2016) 22

³⁰L Yesufu, 'NBET Opportunities in the On-grid RE Section in Nigeria' (2016) <<https://www.get-invest.eu/wp-content/uploads/2016/11/NBET-Opportunities-in-the-on-grid-RE-section-in-Nigeria.pdf>> accessed 8 October 2021.

Nigerian constitution give state governments the right to make laws on electricity matter, it still appears to be a provision just meant for the books.

4.1 Impact of the Law on Various Aspects of the Electricity Sectors in the two Countries

4.1.1 Power Sectors Ownership of Electricity Assets

South Africa's power sector which is majorly dominated by ESKOM is largely state-owned utility and vertically integrated Monopoly. However, there are 177 licensed municipalities, and private-owned Independent Power Producers (IPPs).

In SA, Ownership of Power Generation Plants, originally, power generation utilities were both publicly and privately owned in the early stages of power generation, for example, the Mining City of Kimberly in the Cape installed the first electrical streetlights in South Africa. The first commercial central power station was built in 1897 by the Rand Central Electric Works and supplied electricity mainly to the gold mining industry around Johannesburg.³¹ In 1906 the Victoria Falls Power Company was established, but its plans to harness hydroelectric power were soon abandoned in favour of cheaper coal-fired generation.

In Nigeria, prior to the enactment of the Electric Power Sector Reform Act (EPSRA), 2005, Federal Government of Nigeria (FGN) through the Ministry of Power was responsible for policy formulation, regulation, operation, and investment in the Nigerian power sector which operated through the National Electric Power Authority (NEPA), a wholly owned State-owned Enterprise (SOE) responsible for power generation, transmission and distribution. Consequently, FGN established the Power Holding Company of Nigeria (PHCN) and subsequently unbundled it into eighteen (18) successor companies.

Public ownership has always characterized Nigeria utilities from the inception of electricity generation. The first power generation station in Nigeria was built in Lagos and had an installed capacity of 20MW. The power generating station was built and managed by the Public Works Department (PWD) and other municipal authorities. Another power generating plant was built between the years 1921-1923 with an installed generating capacity of 14MW. The first electricity utility company, the Nigerian Electricity Supply Company (NESCO), commenced operations in 1929 with the construction of a hydroelectric power station at Kurra Falls, South-East of Jos, Plateau State, Nigeria (FRN, 2001). However, with the unbundling and subsequent privatization in 2013, private ownership of power sector is more than 60%.

³¹ A Eberhard, 'The Political Economy of Power Sector Reform in South Africa' (Graduate School of Business University of Cape Town) 216-226.

4.1.2 Power Generation

In South Africa, the early Power stations which were built, generated electricity at varying capacities. Mining City of Kimberly of Cape, 1882; Rand Central Electric Works, 1897; Victoria Falls Power Company, 1906 and other stations built by the miners for their mining industries. Each of these power plants were said to be generating between 40-60MW. As it stands, SA has an installed generation capacity of 58,095 MW with 95% electrification rate.

Nigeria's earliest power station installed in Lagos has an installed capacity of 20MW. Another power generating plant was built between the years 1921-1923 with an installed generating capacity of 14MW. Today, Nigeria has an installed capacity of 12,522 MW of electric power but on most days, only about 4,000 MW gets dispatched.³²

4.1.3 Power Distribution and Supply

Power distribution and supply during apartheid regime in South Africa was limited to certain residential and industrial locations. Given the Apartheid regime, development including the power sector progressed on racial lines and this pattern affected the electricity industry. Consequently, major target of electricity provision was on heavy industry, mining and white households, which comprised about 12% of the total population.³³ As at 1917 many of the mines built their own power stations and some also supplied electricity to neighbouring towns.³⁴ South Africa has 188 licensed distribution companies which includes ESKOM, 174 municipalities with constitutional rights, and 13 private Distributors.

Prior to independence, electricity distribution and supply in Nigeria was managed by the Public Works Department (PWD), was cut across geographical boundaries. While in the case of Lagos municipality, electricity supply by PWD was limited to Lagos Island.

Today, electricity distribution in Nigeria is carried out by 11 companies empowered by NERC licence to purchase electrical power from the generating companies and distribute the power to consumers within their areas of coverage. They include; Kaduna Electricity Distribution Company Plc, Yola Electricity Distribution Company Plc, Enugu Electricity Distribution Company Plc. Abuja Electricity Distribution Company Plc, Ibadan Electricity Distribution Company Plc, Jos Electricity Distribution Company Plc, Eko Electricity Distribution Company Plc, Ikeja Electricity Distribution Company Plc, Port Harcourt

³² Power Africa Fact sheets <<https://www.usaid.gov/powerafrica/nigeria>>accessed 30 November 2021.

³³ O Davidson and SA Mwakasonda, 'Electricity Access for the Poor: A Study of South Africa and Zimbabwe' (2004) 8(4) *Energy for Sustainable Development* 26-40.

³⁴ A Eberhard, 'The Political Economy of Power Sector Reform in South Africa' (Graduate School of Business University of Cape Town) 216-226.

Electricity Distribution Company Plc, Benin Electricity Distribution Company Plc and Kano Electricity Distribution Company Plc.

It is clear that SA has more coverage range and efficiency with electricity distribution even though Nigeria is almost four times its population.

4.1.4 Privatization

South Africa power sector which is still dominated by ESKOM, a vertically integrated monopoly which generates, transmits and distributes electricity. Majority of the power sector stakeholders contend that ESKOM should be unbundled being a state-owned utility sector overdue for unbundling and privatization. There were unsuccessful attempts to reform through 1998 South Africa Energy White Paper; ISMO Bill, 2012; and IRP (2010-2030). More recently, there have been intense moves to completely unbundle ESKOM by the end of 2022.

Nigeria power sector has been privatized and former PHCN unbundled into 18 new companies which are: six GenCos, one TransCo, and eleven DisCos. This has opened door for private participation although the dividends are yet to be realized by electricity users in Nigeria. Even with the unbundling in Nigeria, the low electricity generation and supply have not stopped and this indicates that Nigeria's power sector needs huge bailout.

5. Challenges of Nigeria's Power Sector and Lessons from SA

5.1 The Challenges

With the exception of South Africa, most other sub-Saharan Africa countries have for decades continued to struggle with their power sector development, management, and governance and Nigeria is certainly not an exception. The major problems leading to power sector crisis in Nigeria to include but are not limited to: low power generation, Gas supply problem, high electricity pricing, low Investment in the power sector, corruption, vandalism of energy infrastructure, ineffective regulatory structures and much more.

These factors have greatly hampered the development of Nigeria's power sector and even made reforms in the country appear to be seemingly without expected benefits at least on the short-run.

5.2 Lessons for Nigeria from SA

5.2.1 Improving Access to Electricity through Decentralisation

South African municipalities and provincial authorities have constitutional rights and duties on the matters of electricity provision to the citizens. Definitely, this is part of the strong reasons why South Africa has the age-long history of superior power generation and distribution capabilities more than all other parts of African countries.

It is highly recommended that Nigeria adopts the South African electricity distribution model whereby the municipalities and provincial authorities have constitutional duties in electricity supply to the grass-root.

The South Africa Constitution in section 151(3) and 156(1) and (2) are germane here. Section 151 (3) provides thus:

A municipality has the right to govern, on its own initiative, the local government affairs of its community, subject to national and provincial legislation, as provided for in the Constitution.

The Constitution in section 156 (1) and (2) provide thus:

A municipality has executive authority in respect of, and has the right to administer - (a) the local government matters listed in Part B of Schedule 4 and Part B of Schedule 5; and (b) any other matter assigned to it by national or provincial legislation. (2) A municipality may make and administer by-laws for the effective administration of the matters which it has the right to administer.

Nigeria's energy sector is regulated centrally by the NERC. This has created the conditions for corruption to thrive. The result is that the supply of electricity is unstable and cannot support economic development. Decentralised regulation is the solution, but has been prevented by conflicting laws. For instance, the Nigerian Constitution supports decentralised electricity regulation. The Constitution is clear. It allows both federal and state governments to regulate electricity. Electricity appears on what is known as the concurrent legislative list but electricity regulation is still in the hands of the federal government alone. Supplying electricity is a complex business. The sector has many aspects, all complex in themselves: engineering, accounting, tax, financing, laws and regulations, governance, consumer concerns and safety.³⁵

Countries often decentralise authority to simplify the management of the sector. They also decentralise the sources of energy generation, transmission and distribution and the means of funding the sector. But Nigeria has done the reverse. Under the EPSRA, all regulations concerning electricity are made centrally for the 36 states and their 774 local government areas, which is not consistent with the provisions of the constitution.

The central regulator cannot monitor all the players effectively. The result is corruption, poor service delivery and use of substandard equipment. Gas pipelines are sometimes vandalised by frustrated citizens whose local needs are not understood or met.³⁶

³⁵Yemi Oke, 'Conflicting Laws keep Nigeria's Electricity Supply Unreliable' (2017) <<https://theconversation.com/conflicting-laws-keep-nigerias-electricity-supply-unreliable-81393>> accessed 23 September 2021.

³⁶ Ibid.

5.2.2 Mass Electrification Programme

Eskom initiated a mass electrification program in South Africa through its reconstruction and development program; access rate targets were propelled by programs such as the integrated national electrification program³⁷ and the free basic electricity³⁸ which were introduced in 2002 and 2004 respectively. Nigeria needs to embark on a lot of electrification programs both in urban and rural areas. Nigeria is making some fair effort but there is a need to be more aggressive with improving electrification rates.

5.3 Other Recommendations

5.3.1 Electricity Policing

The establishment of a special security squad for the purpose of electricity policing in Nigeria is needed. This squad should be drawn from the existing Nigerian police, civil defence, community vigilante groups, and internal security department of the GenCos, TransCo, DisCos, and IPPs. Special training on electricity theft detection, electricity installation and investment protection should be given to them. There should be in each police division throughout the country, a special squad that is trained technologically and legally on meter reading.

In order to enhance this training, there should be a special course designed by joint resource persons drawn from NERC, the Ministry of Power, Universities, and Electricity consultants with requisite knowledge and skill. The curriculum should cover the basic knowledge about electricity courses. The training should also cover syllabus on criminal law and security courses, for the purpose of security of electricity installations, prevention and detection of electricity theft. It is further recommended that the Ministry of Justice should gazette the NERC Electricity Theft and other related Offences Regulations, 2014, to combat electricity theft in Nigeria, to enable the regulator implement same.

5.3.2 Regulatory Model

The adoption of centralized and co-regulation model of electricity regulation in Nigeria's electricity governance is highly recommended. A centralized regulatory model is more inclusive in that it allocates constitutional obligations on governments at various levels and accommodates the needs and inputs of grass root electricity users in electricity governance. A co-regulatory model on the other hand entails a combination of state control and self-regulatory models for effective regulation of the power sector in Nigeria. The implication of this is

³⁷ AO Soyemi et al , 'A Robust Energy Policy Review of Selected African Countries: An Impetus for Energy Sustainability in Nigeria' <<https://iopscience.iop.org/article/10.1088/1742-6596/1734/1/012028/pdf>>accessed 30 November 2021.

³⁸ Department of Energy 2004 FAQ's Free Basic Electricity.

that in Nigeria, the GenCos, DisCos, TransCo, and IPPs should interface to set up standards and best practices which every member should comply with. They should also establish industry monitoring and regulatory framework to access compliance to their own standards, which will compliment government regulator's regulation.

Furthermore, it is recommended that each GenCos should have regulatory unit that will interface with state regulator and the regulatory units of other licensees. This way, all the stakeholders will be working in concerted efforts to conform to standards and best practices.

5.3.3 Compliance, Monitoring and Enforcement

For effective compliance, monitoring and enforcement of regulations, codes and standards, each GenCo, DisCo and IPP should establish internal regulatory department that will be made of lawyers, engineers, economists, and other relevant professionals. Their major duties should be to:

- (i) collaborate with the State Regulator in order to acquaint themselves with the regulators' regulations, codes, and standards;
- (ii) educate the management and staff of their own entity of those regulations, codes, and standards;
- (iii) internally conduct regulation audit of their entity on operational regulations, codes, and standards;
- (iv) ensure compliance to regulation by reporting to the management of the entity of the department that are failing in their compliance and to take appropriate correctional measures;
- (v) submit to the State regulator an audit report every two years and to ensure that adequate changes or amendment undertaken by their entity as may be stipulated by the regulator; and
- (vi) do anything that may incidental and necessary for best practice in the sector.

5.3.4 Promotion of Foreign Direct Investment (FDI)

The Nigerian government should create enough flexibility within the power sector investment climate that would promote FDI. This may require changing of rules where necessary. A competitive legal framework that is broad and investor friendly will no doubt promote competition and attract huge FDI into Nigeria's power sector.

Where there is need for amendment, the legal framework should be amended and where there is need to entirely change the structure and market regulation, the entire electricity legal framework should be reviewed and a new Act enacted to reflect a liberalized power sector. This will lead to the emergence of a new regulatory regime that will influence new market behaviour and a new tariff. To achieve this, there is need for flexibility and interdisciplinary collaboration to evolve a completely new legal regime that will reposition sub-

Saharan Africa power sector and thus make it more competitive and attractive to FDI in the globalized and liberalized power sector market.

5.3.5 Competition Law and Authority

Competition in the electricity sector during the post-privatization period was strictly regulated by the Act.³⁹ Following the declaration by the Minister that a more competitive market is to be initiated, the trading licensee shall not enter into any further contracts for the purchase of electrical power or ancillary services and shall begin the process of novation of its existing rights and obligations to purchase electrical power and ancillary services to other licensees.⁴⁰

Now that Nigeria has enacted its competition law, the Federal Competition and Consumer Protection Act (FCCPA) 2019, it is needful that it swings into prompt action in ensuring that the law produces the desired result in ensuring the promotion of competition and regulating anti-trust market behaviours in the power sector market such as; abuse of dominance, predatory pricing, price discrimination especially given the fact that electricity is an essential good. This is in consonance with Article 45 of the Cotonou Agreement, which Nigeria is signatory to.⁴¹

In buttressing this point, Dimgba states that at least there is a consensus on this point, shared even by those who doubt the utility of a competition law system for a developing country.⁴² As Pham notes, ‘an effective competition law, as is now widely recognized, is a concomitant requirement for market-based reforms. Such a law aims at limiting unnecessary interventions or abuses of power in the marketplace by the state or by private sector enterprises that adversely affect economic efficiency and consumer welfare.’ Therefore, if governments like Nigeria’s which over the past decades have committed themselves to market liberalization, through privatizations and deregulation of

³⁹ See generally EPSR Act 2005 s 26.

⁴⁰ *Ibid* s 26 (1)(i)(a).

⁴¹ See the Cotonou Agreement between the EU and ACP countries Art 45. It enjoins the state parties to among others, implement national or regional rules and policies including the control and under certain conditions the prohibition of agreements between undertakings, decisions by associations of undertakings and concerted practices between undertakings which have as their object or effect the prevention, restriction or distortion of competition. See also, Simon Roberts, ‘The role of competition policy in economic development? The effects of competition policy in South Africa, and selected international comparisons’, paper presented at the Trade and Industrial Policy Strategies Annual Forum, 2003. See also, Damilola Olajide, ‘The Changing Banking Environment in Nigeria: Emerging Public Policy Issues’ Institute of Public Policy Analysis, Nigeria paper <http://ippanigeria.org/page.php?instructions=page&page_id=546&nav_id=87> accessed 29 November 2021.

⁴² N Dimgba, ‘The Privatisation of the Refineries, Competition Law, and Economic Competitiveness’ Faculty of Law, University of the West of England, Bristol, UK.

various sectors of the economy, do not have a competition law, they might unwittingly end up creating new dangers. This might remain a fear if Nigeria does not swing into action with its FCCPA 2019.

6. Conclusion

This work has examined SA and Nigeria's power sector regulation making comparisons between the two SSA countries. It has examined the challenges facing the Nigeria power sector and proffered solutions to improving the sector without forgetting to point out salient lessons from SA's power sector. With the understanding that the Nigerian power sector has not recorded tremendous growth rate with its attendant challenges, it is important that the country takes heed to the lessons and recommendations for an exemplary growth of its power sector. One strong lesson and recommendation that Nigeria must embrace to revolutionize its power sector is to ensure that there is a decentralized electricity regulatory model. All tiers of government should be involved in the business of electricity. This model will increase efficiency, allow for more innovation and business adventure, create competition among the players in the industry and lead to better services.