THE RENEWABLE ENERGY LAW REVIEW

FOURTH EDITION

Editor
Munir Hassan

THE LAWREVIEWS

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PREFACE

At the start of my career in the renewable energy industry, renewable energy generation was seen as an immature, fast-developing subsector that was seeking to get a foothold in, and be accepted within, the existing mature and stable electricity sector. Renewables focused on gaining political and social support for new or decentralised technologies that were often perceived as costly and unreliable. At that time, it was also primarily developed economies that were funding and supporting this nascent industry through feed-in tariffs or certificate schemes.

While renewable energy remains a subsector in transition, the conversation has moved on substantially. It is now largely focused on new jurisdictions, much larger projects and marginal efficiencies from technological gains. It is also about whether governments, through facilitative legal and regulatory regimes, are catalysing the development of a sufficiently long and sizeable pipeline of projects to feed the almost insatiable desire of banks, investors and developers to deploy capital and debt in the sector.

Five years on from the signing of the Paris Agreement, the world has witnessed the consequences of systemic threats on a global scale via the spread of the covid-19 pandemic. The message of the Paris Agreement was clear in that it is the shared responsibility of the global community to mitigate the impact of climate change, and those with the broadest shoulders should take the largest burden.

Despite the impact of the covid-19 pandemic, IRENA reported a record 260GW of renewable energy capacity added globally in 2020, beating previous records by almost 50 per cent. Looking ahead to COP26, which is scheduled to take place in Glasgow, United Kingdom later this year, we have seen renewed commitments and increasingly ambitious targets to deploy renewable energy from governments across the globe in the spirit of 'green recovery' in light of covid-19, as well as to respond to climate change threats. Securing the transition to a clean energy system has become less about actively facilitating or subsidising the sector and more about removing the legal, political and structural barriers to deployment.

The decarbonisation of energy systems remains fundamental in global efforts to keep the global temperature increase to below 2°C. Deployment of renewable energy across the globe will play an important role in the world's clean energy transition. However, it is not the only driver for renewable energy deployment. Renewable power is also now, in many places, the cheapest form of new capacity to add to the electricity system. This means that it also has an important role in helping post-pandemic economic recovery. In addition, many people are anticipating a very significant increase in 'clean power' consumption driven by, among other things, the electrification of transport.

This guide has been produced to provide an overview of the legal framework and current status and challenges in structuring, financing and investing in renewable energy

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projects in the selected jurisdictions. Whether you are already active in the sector or simply interested in learning more about the legal framework and key developments underpinning the renewable energy industry, I hope that this guide will provide you with an insight into our exciting industry.

Munir Hassan
CMS
London
July 2021

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Chapter 10

NIGERIA

Israel Aye, Ini Iheonye, Isochukwu Nwosu and Lord McAbraham-Inajoh[1]

I INTRODUCTION

Nigeria is a major exporter of petroleum and has a vast deposit of natural gas, yet it suffers a perennial erratic power supply problem.[2] Indeed, inefficient generation and distribution of power is a dominant factor hindering the ease of doing business in Nigeria.[3] In this regard, Nigeria recognises the importance of a renewable and sustainable source of energy to resolve its power deficit. Moreover, generating power through renewable sources has been common practice in Nigeria, particularly hydropower.

II THE YEAR IN REVIEW

Important trends and developments in renewable energy law projects across Nigeria

As a result of governmental and stakeholder collaboration, the National Renewable Energy and Energy Efficiency Policy (NREEEP) has been introduced to foster the development of renewable energy in Nigeria.[4]

In 2018, The United States Agency for International Development (USAID) in collaboration with Power Africa concluded the four-year Renewable Energy and Energy Efficiency Project (REEEP) in Nigeria. On a progressive note, this project has provided 261,938 Nigerian citizens with renewable energy via 16,600 connections in a bid to reduce carbon emissions.

In 2020, as part of the economy recovery process from the covid-19 pandemic, the Nigerian government launched the Solar Power Naija Project,[5] which seeks the roll-out of 5 million solar-based connections to communities that are off-grid. The project targets

1 Israel Aye is lead counsel, Ini Iheonye and Isochukwu Nwosu are associates and Lord McAbraham-Inajoh is a legal intern at Commercial and Energy Law Practice.

2 Yinka O Omorogbe et al. 'Promoting Sustainable Development through the Use of Renewable Energy: The Role of the Law' (2016) in *Beyond The Carbon Economy: Energy Law in Transition*. Oxford University Press.

3 See African Development Bank 'Nigeria Economic Outlook' (2020) www.afdb.org/en/countries/west-africa/nigeria (accessed 31 May 2021).

4 Source: https://powerlibrary.nigeriaelectricityhub.com/2020/07/17/national-renewable-energy-and-energy-efficiency-policy-nreeep-2015/ (accessed 3 June 2021).

5 Babalwa Bungane Nigeria Announces new Energy Access Project 'Solar Power Naija' (2020) ESI Africa Online Publications Dec 7, 2020 https://esi-africa.com/industry-sectors/renewable-energy/nigeria-announces-new-energy-access-project-solar-power-naija.

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25 million homes and is expected to create approximately 250,000 jobs. The estimated cost of the project has been pegged at US$620 million, although there are plans to recoup the expenditure.[6]

As at April 2021, the Nigerian government has commenced the implementation of this project with the Jangefe community of Roni Local Governent Area in Jigawa State where it received 1,000 solar home system connections for its population of about 5,000.[7] Thereafter, the project will continue across other states of the federation.

Another important development in the renewable energy sector of Nigeria is the Nigerian Electrification Programme (NEP) launched in 2019 by the federal government, with the hope of implementing progress. The NEP seeks to provide electricity through solar powered plants. To facilitate the implementation of his project, the federal government of Nigeria through the Rural Electrification Agency (REA) secured financing for this project from the African Development Bank (US$150 million), Africa Growing Together Fund (US$50 million) and the World Bank (US$350 million).[8]

The European Union also made available the sum of €165 million for investment towards the development and implementation of renewable energy projects.[9] This investment seeks to cater for at least '90 million Nigerians and business owners who lack access to affordable renewably energy'.[10]

In the most recent development, a collaboration between a Singapore-based renewable energy enterprise known as B&S Holding PTE and SUNNYFRED Global, a Nigerian investment entity in partnership with other stakeholders have settled arrangements to set up West Africa's largest solar photovoltaic farm in Nigeria. The farm, which is to be known as 'The Ashama 200MW/HR Solar PV Farm' will be located on about 304 hectares of land in Ashama village, Aniocha South Local Government Area of Delta State, Nigeria.

Recently, in an attempt to cushion the effects of the covid-19 pandemic, the Central Bank of Nigeria introduced a solar intervention fund that offers soft loans (5 per cent interest) to developers engaged in renewable projects who may obtain credit facilities up to 500 million naira.[11] In 2020, the Nigerian Federal Ministry of Power also invited competent bidders to tender for construction of various off-grid solar systems and other energy infrastructure projects across the nation.

6 Peter Hansen, Nigeria's Energy for All Solar Power Plan, Climate Scorecard Nigeria (2021) www.climatescorecard.org/2021/04/nigerias-energy-for-all-solar-power-plan (accessed 28 May 2021).

7 ibid.

8 www.tbridgevp.com/s/NEP-Latest-Report.pdf (accessed at 6 June 2021).

9 https://energycapitalpower.com/2019/07/09/nigerias-renewable-energy-sector-gets-165-million-boost/ (accessed at 6 June 2021).

10 www.vanguardngr.com/2019/05/eu-unveils-solar-tree-contributes-165m-euros-for-renewable-energy-in-nigeria/ (accessed at 6 June 2021).

11 www.nipc.gov.ng/2020/09/15/cbn-unveils-solar-intervention-fund-fixes-n500m-maximum-limit/ (accessed at 7 June 2021).

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III THE POLICY AND REGULATORY FRAMEWORK

The policy and regulatory framework reflects the legal and theoretical outlook of the Nigerian government on the implementation of renewable energy. Although administrative bureaucracies and inefficiencies hinder swift progress, there has been a slow and steady advancement, particularly noticeable in the increased use of solar powered energy sources in homes, institutions and offices in Nigeria.[12]

i The policy background

This includes documents and projects that the government embarks upon in collaboration with stakeholders. Some of which are outlined below.

National Electric Power Implementation Policy (NEPIP) (2001)

Although electric power was generated by the British colonial government in Ijora Lagos in 1896, since the 1960s there has been constant power outage in Nigeria. The erratic supply had become widespread, unreliable and disturbing. In 2000, the federal government set up the Electric Power Implementation Committee to advise on reform of the electric power sector; the committee's efforts yielded the National Electric Power Implementation Policy.[13] The NEPIP stipulates the general framework for Nigeria's agenda on sustainable power distribution with particular focus on efficient distribution and utilisation.

National Energy Policy (NEP) (2003)

NEP was recommended by the Electric Power Implementation Committee in 2003 to develop the nation's energy resources. The NEP places emphasis on the effective use of sustainable energy resources with particular focus on solar energy. This policy advocates for the aggressive integration of solar energy in the nation's power supply. It was later reviewed and replaced by the National Energy Policy (NEP) 2013, which re-emphasised the importance of enforcement and implementation of the sustainable energy goals while decrying the failure of implementation, energy loss, inefficiency and waste in the realisation of sustainable energy goals.

The Renewable Energy Master Plan (REMP) (2005)

REMP recommends the utilisation of renewable energy and seeks to provide an implementation strategy. It conceptualises Nigeria's renewable energy goals and tries to address the key factors for its attainment. REMP projects that the minimum electricity demand in Nigeria shall be above 315MW by 2030. The goal is that over 20 per cent of the energy supply will be from renewable sources.

12 See Nomvuyo Tena 'Nigeria powering schools through renewable energy', (2021) ESI Africa Publication 6 April 2021 www.esi-africa.com/industry-sectors/renewable-energy/nigeria-powering-schools-through-renewable-energy-resources/ (accessed 30 May 2021).

13 See MT Ladan (2018) 'Achieving Sustainable Development Goals through Effective Domestic Laws and Policies on the Environment and Climate Change'. Vol 48(1) *Environmental Policy and Law*, pp 42–63.

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Renewable Energy Policy Guidelines (REPG) (2006)

REPG is the Ministry of Power's document that details policy objectives for the development and utilisation of renewable energy. REPG is very similar to REMP, the major distinction being that REPG places more premium on renewable energy generation and distribution. It also maps out a strategy for a cost-effective administration of the Renewable Electricity Trust Fund (RETF). In addition, it provides incentives for the utilisation of renewable energy. It recommends a five-year tax holiday as an incentive for investors in renewable energy in the hope that this will encourage the participation of more stakeholders.[14]

The Captive Energy Generation Regulations (CEGR)

CEGR is a regulation issued by the Nigerian Electricity Regulatory Commission (NERC) in 2008 to regulate captive generation of electricity for small or private use. It houses principles akin to those in the general regulations but applies especially to small generators or captors. The CEGR defines captive power generation as: 'generation of electricity exceeding 1 MW for the purpose of consumption by the generator, and which is consumed by the generator itself, and not sold to a third-party'.[15]

The regulation then makes provision for licensing and regulation of captive energy generators.[16]

The National Renewable Energy Efficiency Policy (2013)

NREEP was conceived by the Ministry of Power as a policy to foster sustainable power generation and consolidate the stipulations of the existing energy laws. It seeks to improve energy efficiency and overcome the administrative and social barriers hindering the sustainable use of energy.

National Energy Efficiency Action Plans (NEEAP) (2015–2030)

NEEAP was adopted by the Inter-Ministerial Committee on Renewable Energy and Energy Efficiency (ICREEE) and approved by the National Council on Power. Although the template was dubbed from that initially designed by the ECOWAS Centre for Renewable Energy and Efficiency (ECREEE), it provides a strategic outlook on the situation in Nigeria with plans for implementation of the renewable energy goals. Specific focus is placed on effective energy, emission reduction, efficient lighting,[17] monitoring, distribution, enforcements and verification of standards of materials, homes, buildings and industries.

The NEEAP also emphasises capacity building and the utilisation of local materials and manpower. The inputs of the implementation of NEEAP are to be monitored by the Federal Ministry of Power, Works and Housing. The policy also outlines the establishment of a system for monitoring, verification and enforcement of minimum energy performance standards.[18]

14 This has been reflected in the Federal Government Pioneer Industry List, Gazette No. 84, Vol. 104 of 2017 which grants an initial tax holiday of three years renewable for two additional years.

15 Captive Energy Generation Regulations (2008 s2).

16 Captive Energy Generation Regulations (2008 ss 3–8).

17 Including the replacement of lighting sources (like kerosene lanterns) with conservative light bulbs.

18 National Energy Efficiency Action Plans (NEEAP) (2015 – 2030) (2016 Policy document, Para 2.1.3). Evaluation of standards shall be carried out in collaboration with the Standards Organization of Nigeria (SON).

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The Order on the Mandatory Dispatch of Hydropower Plants

This order was issued by the National Electricity Regulatory Commission in 2019[19] requiring offtake of power generated by the three hydropower generating stations in Nigeria before offtake from gas powered plants.[20]

The Energy for All – Mass Rural Electrification Programme

This programme expresses the federal government's intention to power 304 healthcare facilities and schools across the country using renewable energy (primarily solar).[21] This programme was introduced in August 2020 and will be implemented in collaboration with the existing agencies and has been given a timeline of 12 months.

Other projects

The Renewable Electricity Action Programme

This programme was conceived by the Ministry of Power in 2006. The REAP sets out a roadmap for the sustainable implementation and distribution of renewable electricity in Nigeria with notable targets.

The Nigerian Electrification Project (NEP)

This aims to increase electricity access by households and micro, small and medium enterprises.

The Energising Education Programme

This seeks to provide educational institutions with sustainable electricity by adopting mini-grid technology.[22]

Power Sector Recovery Programme in 2019

This seeks to boost Nigeria's power generation in anticipation of economic prosperity for the nation.

ii The regulatory and consenting framework

The Federal Ministry of Power

The Federal Ministry of Power is the administrative arm of the federal government responsible for coordinating the power sector agencies to achieve policy directions. Recent actions of the Ministry indicative of its favouring of renewable energy include the 10-year concession awarded to Proserve Energy Services Limited to generate a 750kW solar power supply system to further facilitate renewable energy and decarbonisation.

19 NERC/182/2019.

20 Clement Ezeolisah, 'NERC Directs System Operators to Priortise Dispatching all Hydro Power Stations to Check Flooding in Nigeria' (2019) https://nsong.org/MediaPublicity/NewsDetails?NewsID=81 (accessed 28 May 2021).

21 Patrick Mulyungi, 'Nigeria to electrify 304 health care facilities and schools with renewable energy' (2021) https://constructionreviewonline.com/news/nigeria/nigeria-to-electrify-304-health-care-facilities-and-schools-with-renewable-energy/ (accessed 29 May 2021).

22 Yemi Oke, 'Energy Law Nigeria' (2020), pp.1–216, IEL Energy Law, (Kluwer Law International BV, Netherlands).

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The Nigerian Electricity Regulation Commission

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]

The Federal Ministry of Environment

This ministry was the initiator of the Renewable Energy Programme in 2016 aimed at drawing collaborations, financial and human resource capital towards achieving Nigeria's renewable energy plans in accordance with the United Nation's Framework on Climate Change. This is also the ministry in charge of reviewing and issuing certificates for Environmental Impact Assessment.

The National Environmental Standards and Regulations Enforcement Agency

NESREA was established in 2007 to protect the environment, with a mandate to enforce compliance with environmental laws and promote the sustainable use and development of natural resources in Nigeria – essentially to maintain environmental standards and minimise pollution. In this regard, the NESREA (Electrical/Electronics Sector) Regulations 2011 was enacted.[26]

The Nigerian Electricity Management Services Agency

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.

The Energy Commission of Nigeria

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.[27]

23 Electricity Power Sector Reform Act (2005 S-88). The NERC was established under the Act as a body corporate with perpetual succession that can sue and be sued in its own corporate name.

24 The Nigerian Electricity Regulatory Commission Act (S 7–12).

25 Jama 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*.

26 Under the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act ss 34.

27 The 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.

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The Transmission Company of Nigeria

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 Nigerian Bulk Electricity Trader

NBET is authorised to bulk-purchase electricity and resell or contract with the power distribution companies (discos) and other electricity market operators for distribution throughout Nigeria.

iii The legal framework

These pieces of legislation provide the framework for the operation of renewable energy in Nigeria and these are further determined by the policy and enforcement outlook.[28] These legislations are outlined below.

The Nigerian Constitution

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.[29] 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.[30]

The Electricity Power Sector Reform Act 2005

The EPSRA was promulgated in 2005 as a response to the erratic performance of the National Electric Power Authority (NEPA).[31] The EPSRA therefore terminated the mandate of NEPA and repealed its enabling law, and replaced it with the Electricity Regulatory Commission of Nigeria (NERC).[32] The law provides robust and reformatory stipulations on competition, consumer protection, licensing, generation and transmission of power in Nigeria.[33]

The 'Rural Electrification Fund' was also established under this Act and the proceeds from the funds are to be equitably administered by the REA to ensure more equitable access to electricity for all, especially in rural areas where indigenes utilise firewood, coal and fuel for energy including cooking and domestic use.

28 Chioma V Basil Esq, 'Renewable Energy Deployment in Nigeria', (2021) Michaelmas Chambers Publication.

29 Constitution of the Federal Republic of Nigeria Schedule 2, Part II Item 13.

30 Constitution of the Federal Republic of Nigeria Schedule 2, Part II, Item 14 (a)–(c).

31 Helen Obioma, Implications of Legal Reform in the Nigerian Power Sector, (2016) Vol. 10(3) *African Research Review*.

32 See David Oloke et al., *Barriers for Implementing Solar Energy Initiatives in Nigeria: An Empirical Study* (2021) Emerald Publishing Limited.

33 Electric Power Sector Reform Act (2005 ss 25–30, 62).

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The Environmental Impact Assessment Act 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,[34] 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.

The Nigerian Electricity Management Services Agency Act (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 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.[35] 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 cases such as *Centre For Oil Pollution Watch v. Nigerian National Petroleum Corporation*[36] the court reiterated the need to switch from the carbon-polluting mindset. Also, in the case of *Amadi & Ors v. Essien*, the court affirmed the enforceability of electricity regulation in Nigeria.[37] Also, in the case of *Barr. Mike Kpemi v. Benin Electricity Distribution Company PLC*, the court enforced the claimant's right to an electricity meter for the supply of electricity to his household.[38]

IV RENEWABLE ENERGY PROJECT DEVELOPMENT

i Project finance transaction structures

Although the renewable energy sector in Nigeria is still at its nascent stage, there has been considerable growth especially in the execution of renewable energy projects. Due to the high capital expenditure these projects require, generation of finance in this regard always

34 Environmental Impact Assessment Act s. 2, para. 3 of the EIA Guidelines 2017.

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

36 [2019] 5 NWLR (Pt. 1666) 518, See also; *Momoh v. Adedoyin* (2018) 12 NWLR (Pt 1633) 34 CA. at Page 378, Paras. C–E where the court advocated that we eschew technicalities.

37 (1993); 7 NWLR (Pt.354) 91 at 112.

38 Unreported suit (Suit No: AK/94/2019).

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seems to be a Herculean task. Financing may usually involve international, regional or local investments, grants and public–private partnerships, which may involve the state or federal government of Nigeria[39].

Grants

Grants in renewable energy are like financial rewards usually given by governments and international organisations for the execution of projects. Generally, grants do not include financial implications such as a loan or loan guarantee, interest rate subsidy, revenue sharing and so on.[40] Some examples (in addition to the earlier discussions) include the United States African Development Foundation (USADF)[41] or the Sustainable Energy Fund for Africa (SEFA) by the African Development Bank.[42]

Concessional loans

Concessional loans are financial advances made below market interest rates and usually include a moratorium period within which the loan recipient is not mandated to repay the debt. Some examples in this regard include the Green Energy Fund Programme (GEF-P) (a brainchild of the African Guarantee Fund), Central Bank of Nigeria (CBN) intervention loan, Six Billion Naira Solar Energy Fund of the Nigerian Bank of Industry.[43]

Venture capital

Venture capitalists are also key players; although Nigeria lacks a developed venture capital structure to cater for its renewable energy needs, there are sprinkled interventions here and there.[44] In 2019 for example, RENsource Energy raised US$20 million in an equity financing round led together by existing investors CRE Venture Capital and the Omidyar Network, with participation from Inspired Evolution, Proparco, EDPR, I&P, Sin Capital and Yuzura Honda.[45] This enabled it to finance its construction of solar solutions for small and medium-scale businesses in Sabon Gari market.[46] Subsequently, in June 2019, Arnergy Solar, a Nigerian power start-up raised US$9 million and has, since its launch, delivered 2MW of installed capacity and over 5MWh of storage capacity to business and residential clients across Nigeria.[47]

39 A recent PPP is the 73km Solar Street Light project between Blue Camel Energy Limited and the Plateau (Jos) State Government, Nigeria. See; Y Suleiman (2019). Interview on Jos Solar Street Light Project.

40 www.investopedia.com/terms (accessed at 7 June 2021).

41 www.gogla.org/usadf-all-on-open-2020-edition-of-100000-energy-challenge (accessed at 7 July 2021).

42 www.afdb.org/en/topics-and-sectors/initiatives-partnerships/sustainable-energy-fund-for-africa (accessed at 7 June 2021).

43 www.boi.ng/solar-energy/ (accessed at 5 June 2021).

44 Abdulrasheed Isah (2019). A Tale of Two Countries: Financing Renewable Energy in Nigeria and Brazil.

45 www.theafricareport.com/21981/nigeria-attracts-29m-in-green-equity-finance/ (accessed at 5 June 2021).

46 M Mataluko (2018). 'Rensource raises $3.5 m to take affordable renewable energy to more Nigerians'. https://techpoint.africa/2018/01/30/rensource-raises-3-5m/ (accessed at 5 June 2021).

47 www.theafricareport.com/21981/nigeria-attracts-29m-in-green-equity-finance/ (accessed at 5 June 2021).

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Reduction in import duties

As discussed in the later part of this chapter, there exist fiscal incentives aimed at encouraging the importation of renewable energy equipment as we do not yet manufacture this equipment. One of the incentives is zero duties on solar panels with diodes.[48] Generally, the Central Bank of Nigeria (CBN) in managing foreign exchange reserves restricts foreign exchange at official rates to importation of certain goods and services, which is cheaper for the importers. This does not affect solar products as they qualify for foreign exchange at CBN rates. Therefore, the Renewable Energy Association of Nigeria (REAN), the largest group of renewable energy enterprises, has called for a complete tax waiver on renewables for the purpose of encouraging growth and creating healthy competition in the renewable energy space.[49]

The principal participants in renewable project finance are:

a multilateral institutions and donors;
b public development banks (bank of industry);
c government finance;
d development financial institutions;
e multilateral development banks;
f commercial banks; and
g impact investors such as the USADF.

V DISTRIBUTED AND RESIDENTIAL RENEWABLE ENERGY

Distributed renewable energy generation implies generation of electricity from renewable energy sources such as solar, wind, hydro and biomass near the point of use instead of centralised generation sources such as the national grid.[50] Distributed energy resources can include solar panels, combined heat and power plants, electricity storage, small natural gas-fuelled generators and so on. Interestingly, Nigeria has massive solar energy potential and this happens to be the more developed and explored aspect of renewable energy resources in Nigeria presently.[51]

Lumos is one of the country's leading solar firms that sell self-contained solar facilities to residential units, thus providing relative access to clean energy. Other distributed renewable energy firms in Nigeria include Arnergy, Astrum energy and many others.

48 Excluding solar cells and other components used in the manufacture or assembly of solar modules. See www.ace-taf.org/wp-content/uploads/2020/01/ACE-NIGERIAN-IMPORTATION-GUIDE-2019122001.pdf (accessed at 5 June 2021).

49 Offgrid Nigeria (2018). 'Customs slowing down the growth of solar power in Nigeria with arbitrary port charges'. www.offgridnigeria.com/customs-slowing-down-growth-solar-power-nigeria-arbitrary-port-charges-rean/ (accessed at 5 June 2021).

50 www.energy.gov/eere/slsc/renewable-energy-distributed-generation-policies-and-programs (accessed at 5 June 2021).

51 www.epa.gov/energy/distributed-generation-electricity-and-its-environmental-impacts (accessed at 4 June 2021).

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i Solar power purchase agreement

This is a financial arrangement where the customer allows a third-party developer to own, operate and maintain the photovoltaic (PV) system on its property and purchases the system's electric output over an agreed period of time. In other words, the host customer buys the services provided by the PV and not the PV system itself. It shifts the burden of installation and high capital upfront and even produces cash flow to the host customer.[52]

ii Outright payment

In this arrangement, the customer pays for the solar system installation outright and owns it. Sometimes, it will come at a discounted price.[53]

iii Lease to own

Under this arrangement, the customer pays a fixed monthly payment to the installer but does not own the solar panel. Essentially, the solar installer will work with a separate leasing company to offer a solar lease.[54] Some energy providers partner with certain financial institutions to provide consumer credits to customers who would need their services. On the other hand, cooperative societies have the option of paying off the cost of the entire system while the customers repay over a long period of time.[55]

iv Pay as you go

This arrangement allows customers to pay for solar energy in weekly instalments or whenever they can. In other words, they pay modest amounts to purchase time units to access solar electricity instead of paying upfront for the entire solar lighting structure.[56]

VI RENEWABLE ENERGY SUPPLY CHAINS

The renewable energy supply chain generally caters for the processes involved in the generation and distribution of renewable energy. This would usually start from the point of acquisition or captivation to accumulation, conversion, transmission and distribution for use by the end consumer.

From the legal perspective, regulations are put in place to ensure equitable utilisation and distribution of electricity. The NERC regulates the sphere and it is mandated to do so in an equitable and competitive manner. With respect to feeding the supply chain, there are various licences in place to ensure steady motion. In this regard, there are various types of licences that are procured depending on the nature or stage of renewable energy participation and distribution. An applicant will essentially need to determine the necessary category of licensing that a proposed activity falls into.

52 www.epa.gov/greenpower/solar-power-purchase-agreements (accessed 4 June 2021).

53 https://astrumenergy.com.ng/payment-options/ (accessed 4 June 2021).

54 www.solarreviews.com/blog/solar-lease-everything-you-need-to-know (accessed 4 June 2021).

55 www.solarreviews.com/blog/solar-lease-everything-you-need-to-know (accessed 4 June 2021).

56 https://energypedia.info/wiki/Pay-as-you-go_Approaches_(PAYGO) (accessed 4 June 2021).

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i The generation licence

This licence applies to the generation stage of the supply chain and authorises the generation of electricity. However, one would have to determine whether such generation will be for the purpose of private or individual use (off-grid) or for public use (on-grid) or for utilisation jointly with a licensed generator or distributor.[57]

ii The transmission licence

This licence applies to the transmission stage of the supply chain. The transmission licence, as its name implies, authorises the operation and maintenance of a transmission system or facility within Nigeria. This stage of the supply chain is usually handled by the Transmission Company of Nigeria. Such transmission usually involves movement of power in bulk, from the generating site to the national grid prior to general distribution.

iii Distribution licence

This authorises a licensee to distribute generated electricity from grid supply points directly to the general consumers. Since the introduction of the Electricity Power Sector Reform Act (EPSRA) (2005), this is where the discos usually come in. There are currently 11 discos servicing the 36 states of Nigeria and classified based on their region or sphere of distribution. Their role is usually to bring electricity to homes.

iv The trading licence

This licence authorises the licence holder to deal in the purchase and sale of the available electricity to consumers.

v Captive generation licence

This licence is issued to persons generating less than 1MW of electricity. This means the electricity is merely generated in a renewable way and is not sold to a third party, meaning that it is for personal use.

There is no doubt that the key factor in any good supply chain should be sustainability[58] and this can be facilitated by liberalisation and competition, adequate communication and empathy between all stakeholders involved.

vi Tariffs

The tariffs available offer:

a pioneer (tax exemption) status for energy companies for the first three years, renewable for another two years;

b a generous capital allowance for investments in infrastructure and raw materials;

c zero tax on repatriation of profits (to encourage foreign participation and interest);

d a duty allowance for imports and exports of renewable machinery and materials;

57 https://rea.gov.ng/nigerian-mini-grid-market-opportunities-investment/ (accessed 5 June 2021).

58 F Jelti, A Allouhi, MS Büker, R Saadani, A Jamil. 'Renewable Power Generation: A Supply Chain Perspective'. *Sustainability* (2021) 13, 1271.

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e free custom duties for two years on the importation of equipment and materials used in renewables and energy efficiency projects;[59] and

f availability of loans and funds to project developers of renewable energy.

The tariffs are not automatic and usually have to be applied for or claimed during the tax computation.

VII CONCLUSIONS AND OUTLOOK

As a sequel to Nigeria's participation in the Paris Agreement on Climate Change, there has been increased attention on the desirability and possibility of increasing power generation through renewable energy sources, thus meeting Nigeria's Intended Nationally Determined Contribution (INDC) 2030 target to mitigate climate change.[60] Nigeria's renewable energy strategy in this regard includes solar power generation and a decrease in the predominant use of fossil fuel burning generator sets.[61]

The renewable energy attitude is complemented by international donors like the USAID and World Bank and local visionaries like Zolar Electric and Arnergy Solar Limited that have invested in renewable energy in Nigeria. It is hoped that the investments will be reflected and enforcement will be complemented by wider adoption of renewable energy.

59 National Renewable Energy and Energy Efficiency Policy (NREEEP).

60 Dele Faseemo (2021) 'Benefits of Renewable Energy Adoption in Nigeria Endless' *The Guardian Nigeria,* https://guardian.ng/interview/benefits-of-renewal-energy-adoption-in-nigeria-endless/ (accessed 31 May 2021).

61 Peter Hansen, 'Nigeria's Energy for All Solar Power Plan', *Climate Scorecard Nigeria* (2021) www.climatescorecard.org/2021/04/nigerias-energy-for-all-solar-power-plan/ (accessed 30 May 2021).

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Appendix 1

ABOUT THE AUTHORS

ISRAEL AYE

Commercial and Energy Law Practice

Israel is the managing partner of the Commercial and Energy Law Practice (CELP). He is also a director at Aspen Energy Nigeria (energy services and consulting group). Prior to his current role at CELP, he served as senior partner for commercial and energy at PAL. Before then, Israel worked in-house in Shell where he provided hands-on legal advice and support to transactions and projects in the upstream, midstream and downstream aspects of Shell's businesses in Nigeria. Israel is a highly sought after energy lawyer and widely reputed for providing practical and pragmatic solutions and support to clients, based on his extensive legal and commercial knowledge of the petroleum industry in Nigeria. Admitted to the Nigerian Bar in 1993, Israel is also a member of the International Bar Association and he holds a Bachelor of Laws, LLB (Hons) from the University of Jos. Israel is an accredited mediator at the London-based Centre for Effective Dispute Resolution (CEDR) and a Member (MciArb) of the Chartered Institute of Arbitrators (Nigerian Chapter) in the United Kingdom.

INI IHEONYE

Commercial and Energy Law Practice

Ini Iheonye holds a Bachelor of Laws, LLB (Hons) from Madonna University, Nigeria and also a Master of Laws, LLM (Hons) in applied human rights from Sheffield Hallam University, United Kingdom. She has practical experience in the fields of legal advisory, commercial and corporate transactions, legal research and general litigation. In addition, Ini collaborated in researching and providing recommendations on behalf of the Helena Kennedy Centre for International Justice, Sheffield, United Kingdom to the UN's committee of the Convention on the rights of persons living with disabilities. Her recommendations were all adopted by the committee. Ini was called to the Nigerian Bar in 2015 and is presently an attorney II at Commercial and Energy Law Practice (CELP).

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ISOCHUKWU NWOSU

Commercial and Energy Law Practice

Isochukwu graduated from the University of Lagos (Nigeria) in 2016 and was called to the Nigerian Bar in 2017. Isochukwu has keen experience in law, technology and energy law. He is a facilitator at the Green Club of the University of Lagos, Nigeria. Isochukwu is a two-time innovation hacker and designed a free law resource platform and a customised search engine for lawyers and law students: www.isochukwu.com and research.isochukwu.com, respectively. Isochukwu is currently an attorney II at Commercial and Energy Law Practice (CELP).

LORD MCABRAHAM-INAJOH

Commercial and Energy Law Practice

Lord is currently a student of law at Benson Idahosa University, Nigeria. He is also a member of the legal research team at Commercial and Energy Law Practice (CELP), where he serves as an intern.

COMMERCIAL AND ENERGY LAW PRACTICE

Km 18 Space Pad Building
Argungi, Along Lekki-Epe Expressway
Lagos,
Nigeria
Tel: +234 8129083595
info@candelp.com
www.candelp.com

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