



THE ESTABLISHMENT OF A LEGAL FRAMEWORK
FOR THE SUSTAINABLE DEVELOPMENT OF
RENEWABLE ENERGY IN NIGERIA

BY

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A thesis submitted in fulfilment of the requirement for the
degree of Doctor of Philosophy (Law)

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DECEMBER 2013

ABSTRACT

Nigeria has abundance of untapped sources of energy and, at the same time, it suffers from inadequacy of fossil fuel for the generation of electricity. Its energy generation values are diminishing very much and very fast. Therefore, slowing development will not bring foreign ideas and cultures that appear to be suitable for the sustainable development in renewable energy. The National Energy Policy and Action Plan need to be reviewed since 2007. Energy generation is barely very low with only 4,000 MW at the moment. The environmental issues in the oil production areas are alarming for more than 50 years as gas flaring is still on in the country. Therefore, there is a need for viable reform in the energy sector to bring about the development of sustainable energy through the diversification of energy sources. This work has proposed a viable framework that will establish a legal and institutional framework for the sustainable development of renewable energy in Nigeria. In achieving the set objective, this research adopts the doctrinal legal research methods, i.e. qualitative research. Primary and secondary materials have been examined to see how Nigeria with abundant sources of energy can also generate electricity in the country for sustainable development. Meanwhile, Malaysia, Netherlands and India are closely studied in the areas where Nigeria can adopt to improve its energy generation. Finally, this research discusses relevant laws and policies relating to planning, and energy generation for the diversification of energy sources that will bring sustainable energy in the country.

ملخص البحث

نيجيريا عندها وفرة مصادر الطاقة الغير مستغلة، وفي نفس الوقت، يعاني من عدم كفاية الوقود الأحفوري، لنشئ الكهرباء. القيم نشئ طاقتها تُقلل كثيراً وسريعة جداً. ولذلك، فإن تباطؤ التطوير لن تجلب الأفكار والثقافات الأجنبية التي تبدو أنها مناسبة لتحقيق التنمية المستمرة في الطاقة المتجددة. نهج الطاقة الوطنية و رسم في العمل تحتاج إلى مراجعة منذ عام 2007. نشئ طاقة المستوى واطئ جداً بالكاد مع 4,000 ميجاوات فقط في الوقت الحاضر. إن القضايا البيئية في مناطق التي تنتج النفط مقلقة لأكثر من 50 عاما كما أن إندلاع الغاز لا يزال في الدولة. ولذلك، هناك حاجة للإصلاح الفعال في قطاع الطاقة إلى إحداث لتطوير القوة المستمرة من خلال تنويع مصادر الطاقة. وقد اقترح هذا البحث هيكل فعال صالحا التي من شأنها تنشئ الإطار القانوني والمؤسسات للتنمية المستمرة من تحديد طاقة في نيجيريا. في تحقيق الهدف المحدد، هذا البحث يعتمد مناهج البحث القانوني المذهبي، أي البحث النوعي. وقد تم فحص المواد الأولية والثانوية لنرى كيف نيجيريا بمصادر الطاقة الوفيرة يمكن أن تنشئ الكهرباء أيضا في البلاد لنمو المستدامة. في هذه الأثناء، ماليزيا، هولندا والهند، تدرس بشكل وثيق في المجالات التي يمكن اعتمادها لنيجيريا لتحسينه نشئ الطاقة. وأخيرا، يناقش هذا البحث القوانين والسياسات المتعلقة بتخطيط، وتنشئ الطاقة لتنويع مصادر الطاقة التي من شأنها تجلب الطاقة المستمرة في الدولة بالمعني.

APPROVAL PAGE

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DECLARATION

I hereby declare that this thesis is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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**THE ESTABLISHMENT OF A LEGAL FRAMEWORK FOR
THE SUSTAINABLE DEVELOPMENT OF RENEWABLE
ENERGY IN NIGERIA**

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In the Name of Allah, the Most Beneficent, the Most Merciful

This dissertation is dedicated to my dear parents, wife, and children, (HRH) Alh. Dr. Muhammadu Chindo Yamusa II (OFR) (the Emir of Keffi, Nasarawa State, Nigeria) and late Hajiya Fatimah Yamusa II, (parents), Aisha (wife), Fatimah-Zara, Jibril-Rayhan and Al-Kasim- Asharaf (children).

ACKNOWLEDGEMENTS

In the Name of Allah (S. W. T) the Beneficent the most Merciful, all praises belong to Allah, the Lord of the worlds. I will remain ever grateful to Allah (S.W.T) for making it possible for seeing me through my academic pursuits and the successful completion of my doctoral programme. My supervisor Professor Dr. Abdul Haseeb Ansari has been so wonderful. His painstaking guidance and thorough academic mentorship has made this research possible. The helpful comments of my co-supervisor Dr. Maizatun Mustafa have significantly helped to streamline the scope of this research. She is not just a supervisor but a mother.

My father, HRH Alhaji (Dr.) Muhammadu Chindo Yamusa II, Order of the Federal Republic of Nigeria (OFR), the Emir of Keffi and Chancellor of Nasarawa State University Keffi, who has made everything possible for me in my academic pursuits, worth special acknowledgements. His words of motivation in a number of letters he wrote to me have remained in my mind. I will always live to remember the striking words: “Shehu! The only royal road to success in life is to get your-self educated in whatever field.” Thank you, my dear Father.

Furthermore, it is important to appreciate the untiring efforts of a number of eminent personalities who have helped me during my studies. I specially thank Professor Dr. Shamsudeen Amali, Vice Chancellor of Nasarawa State University, for his constant support, advice and understanding. My thanks also go to Professor Dr. E.J. Otuka, Deputy Vice Chancellor (Academics); and Professor Dr. Ukeji, Director of Academic Planning, the Registrar, and Bursar. I would like to also appreciate the immense contributions of Professor Dr. Dan Shehu, Director of Sokoto Energy Centre; and Professor Bala E. J., Director Nigeria Energy Commission Abuja.

I have learnt a lot from my Dean, Professor Dr. Hunud Abia Kadouf, Staff and Students of the Ahmad Ibrahim Kulliyyah of Laws (AIKOL), International Islamic University Malaysia during my doctoral programme. I appreciate every second I spent as a doctoral candidate in AIKOL. In addition, the encouragements that I received from my brothers Yamusa Jr., Abubakar, Ahamadu, Aliyu; my sisters Halima, Bilkisu, Aisha, Hauwa, Fatima (mummy), Hafsatu (gogon-zaria); and my friends Kamal Alimi, Isa Hardo, Dr. Katika Yaki, Umma Abdullahi, Dr Umar A. Oseni, Bala Tanimu (soja) and Mr. Bond Abbe are worth acknowledging.

Finally, history shall not pardon me for being negligent not to salute my dear wife Aisha Shehu and beloved daughter Fatimah and her brothers Jibril and Al-Kasim. Thank you for being patient in my absence and I love you all.

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World Summit on Sustainable Development, (WSSD) or Earth Summit 2002 (took in Johannesburg, South Africa 2002)

LIST OF ABBREVIATIONS

AGTA	Associated Gas Framework Agreement
ALSCON	Aluminium Smelter Company of Nigeria
ACQ	Annual Contract Quantity
AD	After the death Christ
AEC	African Energy Council
ADB	African Development Bank
APPA	African Petroleum Producers Association
ACEEE	American Council for Energy Efficient Economy
AGO	Automotive Gas Oil
Bkwh	Billion-Kilowtt hour
BPE	Bureau for Public Enterprise
BP	Biomass Power
bbl	Barrel
CAP	Chapter
CLJ Law	Malaysaia Law Journal
CAC	Company and Allied Matters Act 1990
CDIAC	Carbon Dioxide Information Analysis Centre
CSD	Commission on Sustainable Development
COP	Conference of Parties
CHP	Combined Heat and Power
CCS	Carbon Capture Storage
CH ₄	Atmospheric Methane
CO ₂	Carbon dixate
CSP	Concentrated Solar Power
DG	Director General
DISCO	Distribution Company

DPR	Department of Petroleum Resources
DPR	Detailed Project Report
DPK	Dual Purpose Kerosene
DDPR	Director of the Department of Petroleum Resources
ECN	Electricity Corporation of Nigeria
EPSR	Electric Power Supply Reform Act 2005
EIA	Environmental Impact Assessment
EPL	Exclusive Prospecting License
et al.	and others
EU	European Union
EPL	Exploration Prospecting Lease
ECOWAS	Economic Community of West African States
ERU	Emission Reduction Unit
EGASPIN	Environmental guideline and Standard
FEPA	Federal Environmental Protection Agency
FIT	Treed –in- Tarif
e.t.c	Et cetera
GP	Gas gathering point
GEF	Global Environmental Facility
G15-D8	Group of 15 countries, 8 developing countries
GGFR	Global Gas Flaring Reduction Initiative
GEIFON	Global Education Initiative for Nigeria
GENI	Global Energy Network institute
GW	Gig-watts
GDP	Gross Domestic Product
GE	General Electricity Company United States of America
GHGs	Green Houses Gases
GENCO	Generating Electricity Company
Gwh	Gig-watt hours

Gtoe	Giga-toe
HDI	Human Development Index
HYSON	Hydrocarbon Services Nigeria Limited
ha	Hectare
HPFO	High pour fuel oil
HR	Federal House of Representative
IPP	Independent Power Producers
IEA	International Energy Agency
IUCN	International Union of Conservation of Nature
IPCC	Intergovernmental Panel on Climate Change
IUCN	International union for Conservation of Nature
IOC	International Oil Corporation
IAEA	International Atomic Energy Agency
IDSL	Integrated Data Services Limited
ICTP	International Centre for Theoretical Physics
INR	Indian Rupee
JVA	Joint Venture Agreement
JP5	Japan 5 Fiscal Incentives for Energy Efficiency
KRPC	Kaduna Refinery and Petrochemical Company Limited
Kg	Kilograms
Kv	Kilovolt
Kwh	Kilowatt hour
Km	Kilometer
LPG	Liquefied Petroleum Gas
LPFO	Low pours fuel Oil
LNG	Liquefied Natural Gas
Ltd	Limited
LFN	Laws of the Federation of Nigeria
LA21	Local Agenda 21

MDGs	Millennium Development Goals
MJ/m ²	Millijoule per square meter
MYR	Malaysia Ringgits
MW	Mega-watts
MNES	Ministry of Non-Conventional Energy Sources
Mtoe	Megatone (Million Tonnes of Oil Equivalent)
MAED	Model for the Analysis of Energy Demand
MOU	Memorandum of Understanding
MMSD	Ministry of Mine and steel Development Nigeria
MMA	Mineral and mining Act 2007
ML	Mining Lease
MYTO	Multi Year Tariff Oder
MCF	Million Cubic Feet
MIEEIP	Malaysia Industrial Energy efficiency Improvement Programmme
No.	Number
NEEDS	National Economic Empowerment Development strategy
NCEE	Nigerian Centre for Energy and Environment
NMA	Nigerian Meteorological Agency
NIOMR	Nigerian Institute for Oceanography and Marine Research
NCP	National Council for Privatization
NNPC	Nigerian National Petroleum Corporation
NCERD	National Centre for Energy Research and Development Nsukka, Nigeria
NESCO	Nigeria Electricity Supply Company
NEPA	National Electricity Power Authority
NDA	Niger Dam Authority
NEP	National Electricity Policy
NIPP	Nigerian Independent Power Project
NGN	Nigeria Naria Currency

NCCA	Nigerian Coal Corporation Act 1990
NCC	Nigerian Coal Corporation
NIPC	Nigeria Investment Promotion Council
NESI	National Electricity Supply Industry Protection
NCEEC	National Centre for Energy Efficiency and Conservation
NCHRD	National Centre for Hydropower Research and Development
NCPRD	National Centre for Petroleum Research and Development
NNC-WEC	Nigeria National Committee on World Energy Council
NAPIMS	National Petroleum Investment Management Services
Nigeria	Nigeria Gas Company
NLNG	Nigeria Liquefied Natural Gas
OECD	Organization of Economic Co-operation and Development
OPL	Oil Prospecting Licence
OGIC	Oil and Gas Implementation Committee
OPEC	Organisation of Petroleum Exporting Countries
OMLS	Oil Mining Lease
PIB	Petroleum Industry Bill
PMS	Premium Motor Spirits
PPTA	Petroleum Profit Tax Act
PLC	Public Liability Company
PPA	Power Purchasing Agreement
PHRC	Portharcourt Refining Company Limited
PPP	Polluter Pays Principle
PA	Petroleum Act
PSC	Production Sharing Contract
PPMC	Pipeline and Production Marketing Company Limited
PV	Solar Photovoltaic
PPP	Public Private Partnership
PHCN	Power Holding Company of Nigeria

PTF	Petroleum Trust Fund
PIL	Public Interest Litigation
PPP	Purchasing Power Parity
R & D	Research and Development
RES	Renewable Energy Sources
REN21	Renewable Energy Policy Network of the 21 st Century
REMP	Renewable Energy Master Plan
Rtd	Retired
Sq	Squire
Scf	Standard Cubic foot
SERC	Sokoto Energy Research Centre at Usmanu Danfodiyo University
SEDA	Sustainable Development Authority
SHP	Small Hydro Project
SEB	State Electricity Board India
SPV	Sahelian Power
SPDC	Shell Petroleum Development Company Nigeria Limited
SC	Service Contract
SML	Special Mining Lease
SEPL	Special Exploration Prospecting Lease
STEG	Solar Thermal Electricity Generation
S.A.W	Sallallahu Alaihim Wasallama
Twh	Terawatt hour
Toe	Tonne of Oil Equivalent
TCN	Transmission Company of Nigeria
TPE	one toe petroleum equivalent
UNIDO	United Nations Industrial Development Organisation
UK	United Kingdom
US/USA	United States of America
UNFCCC	United Nations Framework Convention on Climate Change

UNCED	United Nations Conference on Environment and Development
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UN	United Nations
USD	United States Dollar
U&I	Urban and Industrial Waste Power
Vol.	Volume
VAT	Valued Added Tax
WRPC	Warri refinery and Petrochemical Company Limited
WSP	World Solar Programme
WEC	World Energy Council
WBM	World Biofuels Markets Rotterdam, Netherlands
WSSD	World Summit for Sustainable Development
WCS	World Conservation Strategy
WCED	World Commission on Environment and Development

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Nigeria has a total area of 923,768 sq Km (356,667 sq miles). The total land area is 910,771 sq Km (351,649sq miles) and, thus, this shows that the country has 98% of land area.¹ The country has 36 States with Abuja as the Federal Capital. These states are grouped into six Geo-Political zones.² It has abundance of untapped sources of energy and, yet at the same time, it suffers from inadequacy of electricity.³ Notwithstanding, there are several statutory provisions and policies that provide for the generation of energy from hydrocarbon (oil, coal, and gas) resources readily available in abundance throughout the country.⁴

Its energy generation values are diminishing very much and very fast. Therefore, slowing development will bring in host of foreign the ideas and culture that appeared to be suitable in the energy sector for the sustainable development and progress.⁵

The poverty rate in Nigeria is increasing due to the government's failure to provide employment opportunities through public services and private sectors. The

¹ Sambo A. S., B. Garba, I. H. Zarma and M. M. Gaji. "Electricity Generation and the Present Challenges in the Nigerian Power" <www.worldenergy.org/documents/congresspapers/70.pdf> (viewed on 1 February 2013) at 1.

² Ibid.

³ US Department of State, Background note: Nigeria: <www.state.gov/r/pa/ei/bgn/2836.htm> (viewed on 15 October 2011). See Nigeria Natural Resources: <http://www.indexmundi.com/nigeria/natural_resources.html> (viewed on 15 October 2011). See also C.I.A World fact-book: Nigeria: <www.cia.gov/library/publications/the-worldfactbook> (viewed on 15 October 2011).

⁴ Petroleum, 1969 Act, and Petroleum (Drilling and Production) 1969, Petroleum, 1990 (Act No. 350 of 1990, LFN).

⁵ Umar, I. H. "Overview of renewable energy in Nigeria: Opportunities for rural development and development of Renewable Energy Master Plan". Paper presented at the Renewable Energy Conference, Energetic Solutions, Abuja/Calabar, 21-26 November, 2004, see also Umar I. H., Iloje, O. C. and Bala, E. J. "Review of renewable energy technologies in Nigeria", Vol. 8, Nos. 1&2, (2000) Nig. J. Ren. Energy, 99-109.