RESOLVING ENERGY CHALLENGES: IMPLEMENTING AND EVALUATING AN ENERGY JUSTICE FRAMEWORK FOR NIGERIA

Godswill Akpoduado Agbaitoro

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DEDICATION

This research is dedicated to the Almighty God.

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THESIS SUMMARY

Nigeria is a country with vast conventional and non-conventional energy resources including renewable energies for example. However, it still faces significant energy poverty and challenges thus, affecting the socio-economic growth and development of the country. The energy access and poverty challenges are manifested through the country's inability to utilise its energy resources adequately and efficiently for the betterment of its people. For over five decades, since the discovery of hydrocarbon in commercial quantity, the country has consistently struggled with poor energy access and poverty despite the vast energy resources available at its disposal. One could argue that for a country with huge deposits of energy resources, no Nigerian should be energy poor. Among the reasons for the long-running energy challenges is the nature of its institutional, legal, policy and regulatory frameworks applicable in the energy sector. To a large extent, the shortcomings in the frameworks continue to exacerbate the energy access and poverty challenges, particularly through various injustices manifesting in the country's energy systems. Thus, this research examines the extent to which the concept of 'energy justice' and the principles derived from it could be used to resolve Nigeria's energy access and poverty challenges. It considers how proposed energy justice 'imperatives' drawn from the concept could inform policymakers as well as decision-makers in their quest to resolve the challenges, including the articulation of providing just energy systems. This research demonstrates how the energy justice concept could provide new and specific approaches to achieving long-term solutions to energy access and poverty challenges underpinned by justice concerns in Nigeria.

Keywords: Energy justice; Energy Crisis; Sustainable Development Goals (SDGs); Energy Policy; Energy Justice Imperatives; Energy Access; Nigeria

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LIST OF ABBREVIATIONS

BEIS	Business, Energy and Industrial Strategy
CREN	Council for Renewable Energy Nigeria
CSIS	Center for Strategic and International Studies
DDEOPs	Decentralisation and Diversification of Energy Options
DPR	Department of Petroleum Resources
ECN	Energy Commission of Nigeria
ECOWAS	Economic Community of West African States
EITI	Extractive Indudtries Transparency Initiative
EPSRA	Electric Power Sector Reform Act 2005
EPSRA	Electric Power Sector Reform Act
FEC	Federal Executive Council
FGN	Federal Government of Nigeria
GDP	Gross Domestic Product
GHG	Green House Gas
HRBA	Human Right-Based Approach
IEA	International Energy Agency
LNG	Liquefied Natural Gas
MAN	Manufacturing Association of Nigerian
MW	Megawatt
NDR	Niger Delta Region
NEITI	Nigerian Extractive Industries Transparency Initiative
NEP	National Energy Policy
NERC	Nigerian Electricity Regulatory Commission
NGOs	Non-Governmental Organisations
NREEEP	National Renewable Energy and Energy Efficiency Policy
PHCN	Power Holding Company of Nigeria
PIA	Petroleum Indudtry Act
PWC	Price Waters Coopers
REA	Rural Electrification Agency
SDGs	Sustainable Development Goals
SLO	Social Licence to Operate

SMEs	Small and Medium Scale Enterprises
SMEs	Small and Medium-sized Enterprises
SSA	sub-Saharan Africa
UK	United Kingdom
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
WB	World Bank
WCED	World Commission on Environment and Development

CHAPTER ONE

1.0 Introduction

> The gulf between a highly developed and a subsistence economy does not exist because the researcher examining samples of moon rock is an inherently superior human being to the hill shepherd. It depends almost entirely on the relative availability of energy within their two societies. Like some great hovercraft, industrial society is lifted and maintained above concern with the elemental necessities of life by a prodigious expenditure of energy. Without this energy supply, the sophisticated skills of the industrial world are merely a burden in the struggle for survival.[1]

1.1 Setting the Scene

Adopting Nigeria as a case study, this research analyses the energy access and poverty challenges in the country and explores the extent to which principles derived from the 'energy justice' concept and its framework could be deployed as a strategic tool to resolve them. Furthermore, it discusses how the energy access and poverty challenges in Nigeria are currently being addressed, and how the energy justice framework could be implemented by policymakers and energy decision-makers in order to provide new approaches to achieving long-term solutions. In doing so, this research argues for the adoption of proposed energy justice 'imperatives', drawn from the energy justice concept, and literature. Further, it will show how the 'imperatives' could potentially be applied to resolve aspects of the energy access and poverty challenges in Nigeria. Particularly, the author argues that the proposed 'imperatives' could be used to resolve energy challenges underpinned by justice concerns, whilst articulating the realisation of just energy systems in Nigeria. In the context of realising just energy systems, it is observed that the relationship of energy with justice must be traced

[1] Geral Foley, *The Energy Question*, (4th Edition, 1992) 4.

through an array of responses to power dynamics, fairness, and disadvantage in the energy sector.[2] This implies that decisions relating to energy systems should not only be based on technical or technological reasons but should endeavour to consider justice principles that lead to 'just and reasonable' outcomes in the operations of energy systems.[3]

Nigeria possesses an abundance of energy resources and pursues a policy agenda of energy for all.[4] Despite this fact, the country still suffers from poor economic and industrial development as a result of significant shortages in energy supply.[5] It is recognised that the availability of sufficient energy, together with proper utilisation could lead to significant economic growth in any state.[6] This conception is due largely to the use of energy resources upon transformation to heat or cool homes, run businesses and companies, operate industrial machinery, computer systems, and other devices that save man-hours and expand production in the economy of a State.[7] This observation further explains why energy is often described as the backbone of the world's economy.[8] However, there appear to be some institutional, regulatory, legal and policy challenges with underlying justice concerns in Nigeria's energy sector. Regrettably, these challenges have led to poor energy access and poverty, which continues to impact other sectors of the country's economy.

[2] Sarah Marie Hall, Sarah Hards and Harriet Bulkeley, 'New Approaches to Energy: Equity, Justice and Vulnerability. Introduction to the Special Issue' (2013) 18 (4) Local Environment 413.
[3] Benjamin Sovacool and Michael Dworkin, *Global Energy Justice: Problems, Principles, and Practices* (Cambridge University Press 2014) 1.
[4] Energy Commission of Nigeria, National Energy Policy (2018) < http://www.energy.gov.ng/Energy_Policies_Plan/National%20Energy%20Policy.pdf> accessed 28 November 2021.
[5] ibid.
[6] Akin Iwayemi, Nigeria's Dual Energy Problems: Policy Issues and Challenges (International Association of Energy Economics, Fourth Quarter 2008) https://www.iaee.org/en/publications/newsletterdl.aspx?id=53> accessed 21 December 2021.
[7] Peter Olaoye Olalere, 'Privatisation of Electricity Industry in Nigeria: Lessons from Europe and United State of America' (2014) 5 Renewable Energy L. & Pol'y Rev 136.
[8] Donald Zillman and others, *Beyond the Carbon Economy: Energy Law in Transition* (Oxford University Press 2008) 3.

Nigeria is beset with energy access and poverty challenges,[9] resulting from insufficient energy capacity for cooking, lighting, and industrialisation, among other things. The energy poverty situation has undermined socio-economic growth, and contributed to environmental destruction and climate change due to reliance on unsustainable biomass in the absence of clean energy.[10] Consequently, issues ranging from lack of energy efficiency mechanisms, poor energy access, unaffordability, institutional challenges, lack of due process, lack of transparency and accountability in energy systems, lack of verifiable data, environmental impact crises, and corruption have become prevalent in the country's energy sector.

Against the background above, this research explores principles derived from the 'energy justice' concept and its framework with a view to determining whether they could be used to resolve those aspects of Nigeria's energy access and poverty challenges underpinned by justice concerns. This author will show that Nigeria's energy access and poverty challenges are not only attributed to techonological or infrastructural gaps in its energy sector, but also linked to injustices manifested by the energy systems. Injustice in the context of this research means harms that are caused by energy systems, including failure to make energy more accessible, afforable, clean and sustainable for all people. Thus, the research evaluates and implements the energy framework with a view to see whether it offers specific measures that could be used to resolve existing institutional, legal, policy and regulatory challenges contributing to the energy access and poverty challenges in Nigeria.

1.2 Overview of the Research Question(s)

With the abundance of both conventional and unconventional energy resources in Nigeria, one might think that no Nigerian should be energy poor or have access challenges. Energy

[9] Jan Martin Witte, 'Leveraging Private Capital for Renewable Energy in Namibia- A Practitioner's Perspective' in Oliver Ruppel and Bernd Althusman (eds), *Perspectives on Energy Security and Renewable Energies in sub-Saharan Africa: Practical Opportunities and Regulatory Challenges* (Macmillan Education Namibia 2016) 230.
[10] ibid.

scholars have argued that the continent of Africa and its energy-deprived countries such as Nigeria can have all their energy needs met from the continent's energy-rich resources.[11] Regrettably, the present energy situation in Nigeria appears to contradict the above fact about the country. A major problem with Nigeria's energy sector is the nature of the institutional, legal and policy framework. The framework has consistently failed to deliver just energy systems that should ordinarily reflect good management of available energy resources and services across all divides. This is evidenced by the waves of power sector reforms that began in the 1980s and were re-introduced in 2006 but with no significant improvement in terms of energy access.[12]

Nigeria possesses significant deposits of energy resources that could be harnessed for economic growth and development.[13] Notwithstanding, the country is struggling to build its economy due to significant shortages of energy supply that have compounded the challenges. It is important to note that the cause of Nigeria's energy challenges is not limited to the shortages of energy but also cuts across issues relating to how energy systems as a whole are managed. This is evidenced by the level of challenges existing in the energy system and is often attributed to the shortfalls in the current institutional, legal, policy and regulatory framework in the sector.

Undoubtedly, there is a need for Nigeria to increase energy access and security for its population in order to improve economic development within the state. This could be pursued through the implementation of the energy justice concept and its framework. While the focus

[11] Yinka Omorogbe, 'The Role of Law in Promoting Renewable Energy in Africa' in Oliver Ruppel and Bernd Althusmann (eds), *Perspectives on Energy Security and Renewable Energies in sub-Saharan Africa: Practical Opportunities and Regulatory Challenges* (Macmillan Education Namibia 2016) 210.
[12] Sam Amadi, 'Improving Electricity Access through Policy Reform: A Theoretical Statement on Legal Reform in Nigeria's Power Sector' in Yinka Omorogbe and Ada Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 344.
[13] Agaptus Nwozor, Segun Oshewolo and Oluwaseun Ogundele. 'Energy poverty and Environmental Sustainability in Nigeria: An Exploratory Assessment (2019) 331 Earth and Environmental Science 012033.

will include, among others, ensuring the provision of just energy systems to all people in Nigeria, it will also seek to increase energy access for the population which will potentially transform the country's economic prospects. It is in light of the above that this research seeks to utilise the principles embedded in the energy justice concept and its framework to proffer solutions to existing shortfalls in the current institutional, legal and policy framework in Nigeria's energy sector.

Having identified the problems, the central research question for this research is as follows:

> To what extent can the energy justice framework be deployed as a strategic tool for addressing some aspects of Nigeria's energy challenges?

In answering the central research question above, the following sub-questions become relevant for each chapter:

1. What is the energy crisis (i e. the nature of energy challenges) from a Nigerian context?
2. What is the energy justice concept and its framework? More specifically, what are the imperatives to be drawn from the concept?
3. To what extent can the energy justice imperatives be used to achieve just energy systems at the international and domestic levels?
4. To what extent can the energy justice imperatives be implemented in Nigeria's energy systems?

The rationale for identifying the sub-research questions for each chapter is to enhance our understanding of how the energy justice concept and its framework could be used to resolve energy challenges in Nigeria. The approach will be based on an evaluation and implementation of imperatives drawn from the energy justice concept: showing how they

could mark the beginning of positive changes in the management of Nigeria's energy systems. I t would further show that an understanding of the concept, particularly from an African perspective is vital for a forward-looking developing economy like Nigeria that is grappling with energy challenges despite its internationally recognised energy-rich status.

1.3 Research Methodology

This research shall adopt a combination of methodologies, including an applied 'law-in-context' dimension of doctrinal and evaluative research methodologies, whilst drawing insights from relevant principles in energy law and policy approaches. The doctrinal and evaluative research methodologies are adopted because they are best suited to help achieve the research goals and findings. Particularly, these two methodologies will present an opportunity for the author to elucidate what the energy justice concept and its framework could offer toward resolving Nigeria's energy challenges. Additionally, through these methodologies, the author will be able to assess the effectiveness of the current institutional, legal, policy and regulatory frameworks applicable to Nigeria's energy systems through the lens of the energy justice concept.

The doctrinal research methodology is a defining feature of legal studies and research.[14] It comprises a two-part process of locating the sources of law (primary and secondary) and then interpreting and analysing the relevant texts.[15] It requires the location of the primary sources of law to establish the nature and parameters of the key legal frameworks considered in the research. Additionally, the doctrinal research methodology involves a trained lawyer, jurist or law student reading and analysing the law or legal documents as stated in: (i) primary sources including statutes, regulations, and case-law decisions where applicable; and (ii) researching

[14] Tade Oyewunmi, 'The Restructuring and Regulation of Gas Supply to Power Markets: Nigeria and the EU as Case Studies' PhD Thesis, University of Eastern Finland 2017.
[15] Terry Hutchinson and Nigel Duncan, 'Defining and Describing What We Do: Doctrinal Legal Research' (2012) 17 (1) Deakin Law Review 83–119.

and locating appropriate secondary sources including commentaries, expert opinions, relevant informational reports, and policy documents, depending on the nature of the research questions. Furthermore, the doctrinal research methodology entails the intricacies of critical 'reading, analysing and drawing links to new information to the known body of law'.[16] As opined by Hutchinson and Duncan, this methodology requires the study of arguments or legal opinions relating to legal norms or standards, following which a distinction can be drawn from the standards and facts of any given situation.[17] Furthermore, they stated that the doctrinal research methodology ranges from 'practical problem-solving to straightforward descriptions of new laws, together with some incidental interpretative comments', to 'innovative theory building'.[18]

The research will also adopt an evaluative research methodology that will be used to examine the energy justice concept and its framework. The basis for adopting this method is to provide the research with a theoretical framework that underpins the principles embedded in the energy justice concept. Through this methodology, the research will evaluate various energy justice principles with a view to determining how far they could be used to address energy challenges in Nigeria. Additionally, the research will take into account secondary sources drawn from energy law journals, textbooks, practitioners' handbooks, and other relevant materials for analytical purposes. It is important to note that reference will be made to other jurisdictions where necessary to strengthen arguments relating to the application of the energy justice concept and its framework to Nigeria's energy systems.

1.4 Structure of the Research

The research is divided into six chapters and progresses from conceptual and theoretical issues to practical and substantive issues relating to energy challenges. This introduction is

[16] Oyewunmi (n 14).
[17] Hutchison and Duncan (n 15) 106-107.
[18] ibid.

the first chapter and it sets out the background of the research undertaken and its focus, together with the problem statement as well as the scope and motivation for embarking on the research. Furthermore, the chapter outlines the research methodology, limitations, significance and contribution to knowledge, in particular as it relates to Nigeria and by extension Africa. Finally, the chapter provides some definitional context for the main issues in the research.

Chapter 2 examines the energy crisis, including its definition in the context of this research, its dimensions, and the socio-economic and environmental effects from different perspectives. Furthermore, it discusses how the Nigerian government has attempted to resolve the country's energy crisis through the use of policy measures. Additionally, the chapter looks at the energy security concept and its intersections with the energy crisis in Nigeria. This is considered in light of Nigeria's effort to realise the United Nations Sustainable Development Goals (SDGs),[19] in particular, Goal 7. The objective here is to examine the role that energy security could play in Nigeria's quest to realise the SDGs and whether the energy justice framework could be used to achieve energy security. Finally, it looks at the extent to which the energy justice concept could be used to increase energy security in order to address the energy challenges in Nigeria.

Chapter 3 looks at global perspectives on the energy justice concept and its framework and draws some distinctions between Western and African theorization of the concept. The objective is to advance the application of the concept throughout global energy systems. In this regard, the chapter provides analyses of the three-pronged approach to achieving energy justice - that is, distributive, procedural, and recognition justice. The expected outcome is to

[19] UN Department of Economic and Social Affairs: Sustainable Development Goals https://sdgs.un.org/goals accessed 19 December 2021.

trace the development of the energy justice concept from an idea to a theory backed by principles and show their importance towards addressing contemporary energy problems.

Chapter 4 explores energy justice 'imperatives' drawn from the concept and literature, and further examines their importance to the delivery of just energy systems at the international and domestic levels. Here, the author framed the imperatives as key interventions that should be engaged by states in their energy systems for the purpose of realising energy justice. The analysis of the 'imperatives' in this chapter takes a wider look at how the delivery of just energy systems could contribute to resolving energy challenges linked to injustices in energy systems. Thus, the research sets out to prioritise the imperatives as they are channels through which the idea justice concept could be realised. Part of the analysis in this chapter will focus on States' capacity (through relevant actors) to leverage the values of the energy justice imperatives for their benefits. Lastly, the chapter identifies the relevant actors and/or agents of energy justice that are responsible for implementing the imperatives in energy systems and then considers their limitations.

Chapter 5 offers critical analyses of the implementation of the selected energy justice 'imperatives' in Nigeria's energy systems. While it makes a case for the implementation of the imperatives in the context of Nigeria, it, however, notes that the implementation will differ across countries. The argument here is that there needs to be an understanding of complex but specific injustices existing in individual States' energy systems. Indeed, this approach would allow relevant actors to think about how to implement the energy justice imperatives to resolve the challenges. Thus, the chapter critically discusses how Nigeria could effectively implement the imperatives through relevant tools translating into institutional, legal, policy and regulatory measures. The analyses here will show how the energy justice imperatives do not practically feature in Nigeria's energy systems, and more importantly how they can be implemented not only for the purpose of resolving the

challenges but also to have just energy systems. Notwithstanding the different contexts of implementation, they generally seek to enhance the delivery of just energy systems.

The final chapter (6) draws together the main issues analysed in chapters one to five, whilst also focusing on how to achieve energy justice in Nigeria. Furthermore, it provides 'substantive' conclusions through recommendations of measures that need to be adopted for the realisation of energy justice. In doing this, the author reflects on the energy justice concept in a way that would fit the complex energy challenges in countries of the Global South. Here, there is a focus on delivering transformative change through the concept in contexts where energy systems are less developed, and thus, require specific approaches to address challenges they face. Lastly, the chapter reiterates the importance of the research in the context of Nigeria, and more importantly, the value it adds to the energy justice scholarship in Africa. Part of the concluding analysis will be premised on how the principles embedded in the energy justice concept could be instrumentally effective for addressing the shortfalls in the current institutional, legal and policy frameworks exacerbating the energy challenges in Nigeria.

1.5 Limitations of the Research

Given the nature of the research that focuses on Nigeria, a research methodology using qualitative data and analysis from fieldwork could have been chosen, particularly, developing data on the various injustices experienced in the country's energy systems. Using interview evidence of the lived experience could certainly add depth to the sense of injustice felt, however, there is already sufficient evidence of such impacts that shows many oil-producing regions of Nigeria suffering from environmental consequences of oil development.[20] Some of the impacts will be discussed in subsequent chapters including the ones emerging from the

[20] Elise Aiken, 'Energy Justice: Achieving Stability in Oil-Producing African Nations' (2011) 22 Colorado Journal of International Environmental Law and Policy 293, 297.

legal and policy framework applicable in the energy sector. The key to this research was in examining the limits of the institutional, regulatory, legal and policy framework in Nigeria's energy sector, in particular through an evaluative research methodology that is based on principles derived from the energy justice concept. The evaluative research methodology will provide an opportunity to evaluate Nigeria's energy systems with a view to determining whether it meets the energy justice standard. Furthermore, it will be used to draw out specific energy challenges in Nigeria to use the justice principles embedded in the concept to try to resolve the energy challenges.

Another limitation in this research is the lack of accessible, transparent and verifiable data on Nigeria's energy sector. With available verifiable data, this author would have been able to provide more specific areas where the implementation of the framework could impact. The lack of current statistical and transparent data on Nigeria's energy systems continues to affect potential solutions to the energy access and poverty challenges. Particularly, accessible and verifiable data would have been used to highlight specific areas in Nigeria's energy systems where the principles embedded in the energy justice framework could be implemented.

1.6 Significance and Contribution of the Research

Over the years, Nigeria's energy challenges have manifested in different forms, including the constant power failures that beset the entire energy sector, resulting in poor living conditions and stagnant socio-economic growth.[21] Additionally, the uneven distribution of energy resources and improper management of energy systems have exacerbated the challenges. This issue has resulted in different injustices attributed mainly to the current institutional, legal and policy framework in the energy sector. Just as in other countries, energy remains important to the economic growth and well-being of the Nigerian state. This notion underlines the need to

[21] Uche C. Nwogwugwu 'The Effect of Energy Crisis on Nigerian Economic Transformation and Growth Process: The Way Forward' (2006) 2 (2) Nigerian Army Quarterly Journal 211.

see what the energy justice concept and its framework offer in terms of resolving the country's energy challenges. Thus, this research seeks to proffer an alternative approach to resolving Nigeria's energy challenges through the implementation of imperatives drawn from the energy justice concept and its framework. This will be achieved through an evaluation and implementation of the concept as an alternative approach to resolving energy challenges.

The significance of this research lies in its contribution to knowledge that mainly seeks to fill an apparent gap in energy justice scholarship from the perspective of Africa. This research would show that the issue of energy justice is now more of an intrinsic concern for African countries such as Nigeria compared to other western countries. In this regard, this research comes as one of the first major attempts to test the implementation of the energy justice concept and its framework in a domestic energy system. The objective here is to draw upon what the concept and its framework could specifically offer for resolving energy challenges in the context of an African state. Thus, the research would show that Nigeria needs new ways of thinking and approaches towards resolving its energy challenges. This would culminate in allowing policymakers in the energy sector to go beyond addressing technological issues to understanding some of the central justice issues with profound negative implications on energy systems. As opined by Sovacool and Dworkin, "any decent and stable society must have to grapple with the multiple facets of injustice surrounding energy and the environment".[22] Thus, the research strives to advance strategic and comprehensive efforts through the lens of energy justice that would drive greater awareness of the meaning, basis, and value of the energy justice concept and its framework in not only Nigeria's energy systems but other African countries with similar energy challenges.

A further contribution of this research could also be appreciated owing to the dearth of scholarship that looks at the energy justice framework and its application to countries in the

[22] Sovacool and Dworkin, *Global Energy Justice* (n 3) 5.

Global South such as Nigeria. Until recently, energy scholars, particularly from the Global North appear to have generalised the concept in such a way that its implementation in the Global North countries should take the same form in the Global South countries. However, this research takes a different view as the present author seeks to correct that impression by first identifying country-specific aspects of injustice in energy systems and showing how they contribute to energy challenges. This is further done through an understanding of country-specific energy challenges as well as the impact of injustices before implementing the energy justice framework. Particularly, this approach is useful for countries with significant energy resources (such as Nigeria) but faced with the challenge of poor energy access. Using Nigeria as a case study in this research is pivotal in relation to developing the concept from an African perspective. This case study would serve as a benchmark for future studies on the concept and its framework in the context of other energy-rich countries with similar challenges in Africa.

This research focuses on Nigeria for two main reasons. Firstly, the country is well-placed in terms of the availability of significant conventional and unconventional energy resources. However, it has failed to translate these resource advantages into any form of socio-economic development for the benefit of its citizens, thus resulting in different energy injustices meted out to the Nigerian people. To an extent, the failure to effectively utilise the resources is attributed to the shortfalls in the institutional, legal and policy framework in Nigeria's energy sector. Secondly, there remain far-reaching activities going on in the country's energy sector that raises concerns of injustice in the form of the distributive, procedural and recognition dimensions of energy justice. It is for this reason that the research explores the energy justice concept and its framework, specifically to find out whether it could potentially offer new solutions to the energy challenges in Nigeria.

1.7 Background Context of the Research

The presence of energy and its influence on the human and social world is essentially ubiquitous.[23] While energy remains a fundamental human need and the driving determinant of human progress, humans have constantly engaged in energy conversions-processes that transform one form of energy into another, but most importantly, a more useful form.[24] It is observed that humans, particularly those living in high-energy industrialised nations, rely on flows of constant energy for their survival and, in the process, generate outputs of degraded energy (heat) and waste matter.[25] This approach has made energy undoubtedly remain at the centre of human development, possessing the ability to cut across different economic sectors. For instance, before the industrial revolution, it is well known that agriculture was the primary method of human development and it involved the cultivation of and use of land for raising plants and animals.[26] Interestingly, the knowledge, skill, and learning devoted to the care of the soil and the growth of plants advanced the development of human society and remain an important aspect of economic and social growth.[27] However, agriculture was dependent upon the energy derived from photosynthesis in plants for its productivity.[28]

In terms of mechanical energy, this was derived from human and animal muscle power used to grow food rather than relying on technology. However, in the early eighteenth century, there was the development of the steam engine which represented a true revolution in energy technology,[29] and also permanently established the link between fossil energy resources and

[23] Eugene A. Rosa, Gary E. Machlis and Kenneth M. Keating, 'Energy and Society' (1988) 14 ANN. REV. SOCIOLOGY 149, 149.
[24] Lakshman Guruswamy, *Global Energy Justice: Law and Policy* (West Academic Publishing 2016) 8.
[25] ibid 8.
[26] ibid 10.
[27] ibid 10.
[28] ibid.
[29] John Fanchi, *Energy in the 21st Century* 3rd ed. (World Scientific Publishing Company 2013) 149-51.

industrialization.[30] By the late nineteenth century, energy demand in industrialized countries had grown considerably,[31] and this demand was met by the development of electric energy which was considered to be incredibly versatile and was transmitted over vast distances with the ability to be put to a wide variety of uses.[32]

The observation above shows how important energy is to mankind and the development of society. According to an anthropologist, Leslie White, "societies' ability to exploit new, better forms of energy drives development, and that access to energy dictates the progress of people".[33] This conception explains why energy problems remain a major impediment to the advancement of human development and society at large. Therefore, where there are energy challenges – which may be in the form of significant shortages translating into an energy crisis, it is almost impossible to live a standard life.

1.8 Energy Crises

Presently, Nigeria is faced with an energy crisis – including a variety of challenges that continue to affect its economic growth and development. A country often regarded as amongst the world's largest oil producers, producing approximately 2 million barrels of oil daily,[34] which has now dropped to about 1.5 million barrels as of 2021, ironically imports up to 80 per cent of its fuel and has experienced severe shortages over the past years.[35] There is also the issue of corruption and mismanagement (as per the institutional and policy

[30] James C. Williams, "History of Energy," Scientist and the Franklin Institute: Making Their Cases, Philadelphia PA: The Franklin Institute, 2006 https://www.academia.edu/170347/_History_of_Energy_Scientists_and_the_Franklin_Institute_Making_Their_Cases_Philadelphia_PA_The_Franklin_Institute_2006 accessed 11 November 2021.
[31] Fanchi (n 29) 151.
[32] Guruswamy (n 24) 5.
[33] Leslie A. White, 'Energy and the Evolution of Culture' (1943) 45 AM. ANTHROPOLOGIST, 335-56, 345.
[34] Kiersten Wills, 'Nigeria's Economy in "Hurricane" Due to Oil Crisis and Inflation' *Atlanta Black Star* (Africa 9 May 2016) <http://atlantablackstar.com/2016/05/09/nigeria-subject-low-oil-prices-resulting-national-energy-shortage/> accessed 10 November 2021.
[35] Martin Patience, 'Why is Africa's Largest Oil Producer Short of Petrol?' BBC News, (Africa 7 April 2016) <http://www.bbc.com/news/world-africa-35990319> accessed 10 November 2021

framework challenges) which has left Nigeria's four refineries to rot.[36] The consequences of these events have left power generation in the country somewhat stagnant, allowing the economy to grind almost to a halt.[37] It is important to note that the challenges in Nigeria's economy in relation to energy are further exacerbated by factors such as lack of access to modern energy services, unaffordability, poor system of energy efficiency, energy insecurity and poverty, corruption, and environmental impact crisis. Indubitably, these factors are somewhat attributed to different aspects of energy injustices existing in Nigeria's energy systems.

The phrase 'energy crisis' is viewed from different perspectives and conveys a variety of meanings. In one sense, it describes a situation where there is a significant shortage in the supply of energy to an economy - that is, supplies of fuel energy are less than we want, or they might cost much more in the future.[38] In another sense, it refers to a tangled web of energy problems that include among others the quality of the environment and the availability, marketing, and growing demand for energy resources and how its development affects the quality of the environment.[39] Prime examples of different perspectives on the concept of energy crisis can be drawn from the Organisation of Petroleum Exporting Countries (OPEC) - Arab embargo of 1973 which resulted in the increase of oil prices all over the world due to the unavailability of oil resources for energy.[40] Additionally, an incident that has been used to describe the concept of an energy crisis was the shortage of

[36] 'Problems at the Pump' The Economist (30 May 2015) <http://www.economist.com/news/midddle-east-and-africa/21652306-fuel-crisis-nigeria-highlights-desperate-need-subsidy-refrm-problems> accessed 10 November 2021.
[37] Hanri Mostert and Heleen Van Niekerk, 'Disadvantage, Fairness, and Power Crises in Africa: A Focussed Look at Energy Justice' in Yinka Omorogbe and Ada Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 47.
[38] Duane Chapman, Timothy Tyrrell and Timothy Mounty, 'Electricity Demand Growth and the Energy Crisis' (1972) 178 Science 703-708 <http://science.sciencemag.org/content/178/4062/703/tab-pdf> accessed 11 November 2021.
[39] ibid 703.
[40] Charles Garrison, 'The Energy Crisis: A Process of Social Definition' (1981) 4 (4) Qualitative Sociology 312, 316.

natural gas for energy during the severe winter of 1976-7 in the United States (U.S).[41] The July 13, 1977, blackout in the state of New York in America is another example that perfectly describes an energy crisis. The implication of the incidents stated above is that at some point the economy of these nations was significantly affected by the energy crisis. In all these events, it was recorded that there was a fundamental problem relating to the shortage of energy for the economic growth and development of these states.

It is pertinent to note that in the context of this research, the concept of energy crisis will not be limited to the general idea stipulating that it often relates to the shortage of energy. In other words, this research will go further to consider other relevant factors that help to put the energy crisis into context. These factors include energy insecurity and poverty; poor energy access infrastructures; unjust energy institutions; unaffordability; poor system of energy efficiency; corruption and environmental impacts crisis. Although these are often viewed as characteristics of the energy crisis, however, their overall effect precipitates poor socio-economic growth and development of a state. Here, the present author will argue that the energy justice framework offers new and specific approaches that could be utilised to address the energy crisis in Nigeria.

[41] ibid.

Figure 1 Energy Resources and Potentials in Nigeria

Energy Resources	Summary
Coal and Lignite	2,175 billion tonnes
Crude Oil	36.22 billion barrels
Natural Gas	193,345.99 billion cubic meters
Hydro (large and small)	11,250 MW and 3500 MW
Solar Radiation	3.5 kWh/m2/day
Wind	2–4 m/s at 10 m height
Biomass	11 million hectares of forest and wood land tonnes daily

Source: *Nigerian National Petroleum Corporation (NNPC) Annual Statistical Bulletin 2016; Energy Commission of Nigeria*

1.8.1 A Case Study of Nigeria

Undoubtedly, energy is often considered to be a vital tool for economic growth and development and the well-being of any country.[42] For Nigeria, the availability of sufficient energy will do well to help the country fulfil its potential towards becoming one of the economic giants in the continent of Africa. Therefore, its availability invariably leads to efficient economic growth and development. This contrasts sharply with the fact that its shortage translates into sluggish activity, higher costs, lower production, and a declining economic growth rate.[43] From the data above (table 1.1), it can be deduced that Nigeria possesses vast conventional and unconventional energy resources such as fossil fuel, natural gas, coal, biomass, solar and hydropower resources but faces significant energy access and poverty challenges. It is on record that Nigeria has a total installed power generation capacity

[42] Charles Stith, "For Africa, Energy is Destiny", (2012) Africa Business Magazine 389, 30-32.
[43] ibid.

of 16,384MW which is mainly generated from hydro and gas-fired thermal power plants. Despite the generation capacity, the country continues to struggle and has had its highest record of generation output at 5,615.40MW which is dismal for a country with an estimated energy demand of more than 98,000MW.[44]

It is pertinent to note that the energy access and poverty challenges currently faced by many of Africa's investment hotspots, such as Nigeria with a large market base, reveals a stark reality that the growth of the continent can only be achieved and sustained if energy is available to power that growth.[45] The implication of this is that if the continent is going to overcome its economic gap, countries such as Nigeria with the largest economy in Africa must strive to first overcome its energy gap.[46] For Nigeria, the energy challenge is more troubling as the country is in the midst of a major energy crisis marked by insufficient generating capacity, unreliable energy supply, high prices, and poor access to energy, among others.[47] Despite Nigeria's huge potential for conventional and renewable energy resources,[48] the country cannot be said to have ever had an adequate supply of energy for electricity generation.[49] The energy challenges caused many businesses and industries to relocate from

[44] Business Day, 'The Nigerian Energy Report 2019: The Advances of Renewable Energy in Nigeria' https://www.all-on.com/media/publications/_jcr_content/par/textimage_1943192789.stream/1560239896557/8df5c9fbfccfa74ffaf52c28a4ccd4ef6d90e26b/the-nigerian-energy-report-updated.pdf accessed 13 April 2023

[45] David Ofosu Dorte, "Can Ghana go from Power Crisis to being the Power Hub?" (2016) 31 (11 The Lawyer.

[46] Stith (n 42) 31.

[47] Anton Eberhard and others, 'Africa Infrastructure Country Diagnostic Underpowered: The State of the Power Sector in sub-Saharan Africa' <https://openknowledge.worldbank.org/bitstream/handle/10986/7833/482140ESW0P11110Power0Sector0Review.pdf?sequence=1&isAllowed=y> accessed 22 December 2021

[48] Yemi Oke, "Beyond Power Sector Reforms: The Need for Decentralized Energy Options (DEOPs) for Electricity Governance in Nigeria" (2012) 18:1 Nigerian Journal of Contemporary Law, University of Lagos, 68-71, 69.

[49] Godswill Agbaitoro, 'Is Having a Robust Energy Mix a Panacea for Resolving the Energy Crisis in Nigeria?' (2017) 7 (4) Renewable Energy L. & Pol'y Rev 7-16, 8.

the country due to the inability of the country to meet the energy demands, thereby increasing the unemployment rate.[50]

It is important to note that there have been efforts to address the energy challenges in Nigeria. Particularly, attempts have been made to proffer solutions, including keying into the waves of reforms in the energy sector across the continent – some of which led to the introduction of different policies in Nigeria which will be analysed in more depth later in this research. The reforms were introduced as a strategy to ensure the enactment of effective energy laws and policies to rejuvenate the sector for optimal delivery. This idea led to the introduction of reforms that focused on privatisation and liberalisation exercises.[51] Furthermore, the reforms were introduced to eliminate problems such as inefficiency of the sector, consistent poor delivery, and a high level of indebtedness that characterise the state utilities.[52] A key point to note here is that Nigeria's energy sector is mainly structured along the lines of a sectoral model that is characterised by:[53]

a) a national enterprise that has a monopoly over the public power service
b) the vertical integration of production, transmission, and distribution within the national enterprise.
c) the supervision/regulatory functions of the energy sector are placed within the authorities of the public ministries.

The rationale behind the structure and the reforms introduced was to address the poor economic development, lack of foreign investments, and expansion challenges that the

[50] Maren Borok, Agontu Agandu and Mangai Morgan, 'Energy Security in Nigeria: Challenges and Way Forward' (2013) 11 (2) International Journal of Engineering Science Invention 01-06.
[51] Victoria Crystal Svanikier, 'What Are the Hurdles to Regional Integration of Electricity Supply as a Part of the Solution to West Africa's Power Shortage?' (2009) 7 (3) Oil, Gas and Energy Law Intelligence, 3 <www.ogel.org> accessed 10 November 2021.
[52] ibid.
[53] Jekwu Ikeme and Obas Ebohon, 'Nigeria's Electric Power Sector Reform: What Should Form the Key Objectives?' (2005) 33 Energy Policy 1213-1221.

nation's energy sector has been faced with for the past few decades. The structure above largely contributes to the energy deficiency problems in the country. Despite the introduction of laws and policies in the sector, the problem persists, and this is due to the dominant position of the national enterprise established by the central government whose responsibility is to oversee and manage the energy sector.

In sum, Nigeria's energy challenges are attributed to the large influence exerted by the state through the nature of the institutional, legal and policy frameworks implemented in the sector. As a result, various energy injustices now exist in the system and continue to exacerbate the energy challenges. Perhaps, one task this research seeks to achieve is to find what the energy justice concept can specifically offer to Nigeria in terms of resolving its energy crisis.

1.9 Solving the Conundrum: Any Role for the Energy Justice Framework?

An understanding of the concept of 'energy justice' and the philosophical underpinnings of its three core dimensions namely: distributive, recognition, and procedural justice,[54] will provide the context to which it could be applied to Nigeria. Traditionally, it has always been the practice of the global energy system to shape both the international and domestic energy policy regimes with the primary objective of ensuring an adequate supply of energy. In principle, this happens with little or no regard for long-term consequences to the people that the policy regime is intended to benefit.[55] However, the energy justice concept is beginning to change the narrative as it is now recognised that there is much more to be done than simply pursuing policy frameworks that enhance energy security.

[54] Darren McCauley and others, 'Advancing Energy Justice: The Triumvirate of Tenets' (2013) 3 International Energy Law Review, 107–110 at 107.
[55] Benjamin K. Sovacool, *Energy and Ethics: Justice and the Global Energy Challenge* (Palgrave Macmillan 2013) 3.

As has been stated, Nigeria is an oil-rich nation but often exports its mined fossil fuel, thus, providing energy to other parts of the world.[56] Ironically, the country itself is energy-deprived and faces various challenges in the energy sector.[57] It is important to note that some of the energy challenges in Nigeria are attributed to injustices in the system manifesting in the form of distributive, recognition, and procedural dimensions of the energy justice framework.[58] Thus, the injustice issues existing in the country's energy systems make it difficult to provide adequate energy and services for economic purposes. The reality is that Nigeria's current president - Muhammadu Buhari (and perhaps his successor after the forthcoming general elections) is faced with an uphill task of ensuring significant availability of energy in the country for economic development.

Additionally, there is the issue of armed militants in the Niger Delta Region (NDR) of the country that specialises in targeting energy infrastructures in the sector due to perceived injustices, crude oil theft causing Nigeria to lose billions in oil revenue.[59] The implication of this problems in the sector can be seen in the stagnant or slow economic growth due to the disruption of oil and gas production in the energy sector.

Nigeria remains in a position to negotiate or re-negotiate terms and conditions of investments in the energy sector and to further enact laws and policies to advance principles embedded in the energy justice concept and its framework. This could have been achieved through the recently enacted Petroleum Industry Act 2021 (PIA),[60] signed by President Muhammadu Buhari into law on the 16th of August 2021. The PIA provides, among other things, legal,

[56] Mostert and Van Niekerk (n 37) 64.
[57] Lisa Friedman, 'Africa Needs Fossil Fuels to End Energy Apartheid' Scientific American (5 August 2014), <http://www.scientificamerican.com/article/africa-needs-fossil-fuels-to-end-energy-apartheid/> accessed 10 December 2021; For more discussions on the energy challenges in sub-Saharan Africa, see Benjamin K. Sovacool and Michael H. Dworkin, *Global Energy Justice* (Cambridge University Press, 2014) 226.
[58] Mostert and Van Niekerk (n 37) 64.
[59] Roseline Okere, 'Nigeria lost N3.3 trillion dollars oil revenue last year' The Guardian (17 May 2017), <https://guardian.ng/business-services/Nigeria-lost-n3-3trillion-oil-revenue-last-year/> accessed 10 December 2021.
[60] The Nigerian Petroleum Industry Act 2021

governance, regulatory and fiscal frameworks for the Nigerian petroleum industry. This would have been an opportunity to introduce specific and comprehensive measures that seek to leverage the principles derived from the energy justice concept in the country's energy sector.

1.10 The Energy Justice Concept

To better illuminate the energy justice concept, it is appropriate to first define the concepts of "energy" and "justice". William Blake (1757-1827), a poet and painter once wrote that "energy is eternal delight and from the earliest times human beings have tried to imprison it in some durable hieroglyphic. It is perhaps the first of all subjects of art".[61] According to E.F. Schumacher, energy is "not just another commodity, but the precondition of all commodities, a basic factor that is equivalent to air, water, and earth".[62] The most common scientific definition of energy is that which refers to energy "as the capacity to do work, or the ability to move an object against a resisting force".[63] It is noteworthy that the elements contained in the definitions above validate the fact that energy is indubitably considered to be a significant aspect of both human and economic development.

Justice, on the other hand, is viewed as a key concept that has been debated across several disciplines for well over 2,000 years.[64] In this vein, justice from the philosophical point of view is believed to be a moral concept with a rich and long history, stretching back before the time of Plato and Aristotle and running as a constant thread from ancient thought to the twenty-first century.[65] For European philosophers, such as Thomas Hobbes and John Locke,

[61] Kenneth Clark, The Nude: A Study in Ideal Form (1951) Ch.V: Energy
[62] Geoffrey Kirk, *Schumacher on Energy: Speeches and Writings of E.F. Schumacher* (London: Jonathan Cape 1977).
[63] Sovacool and Dworkin, *Global Energy Justice* (n 3) 5.
[64] ibid 9.
[65] Lawrence M Hinman, *Ethics: A Pluralistic Approach to Moral Theory*, 4th edn (Belmont, CA: Thomson and Wadsworth, 2008), 233.

justice was derived from "natural law" and, like physics or gravity, it is an absolute concept consisting of moral rules and principles.[66] For Christians, justice refers to divine law commanding human behaviour, with stipulations in the bible such as the "Golden Rule" and the "Ten Commandments".[67] However, in modern times, there is now a conclusion with strong beliefs that the notions of justice should focus on "fairness" and attempt to create the conditions for fair social structures, which are meant to produce a fair distribution of goods and services.[68]

Having provided brief conceptual meanings of "energy" and "justice", it becomes necessary to consider the concept of "energy justice", together with an analysis of the context in which it is discussed in this research. Presently, there is a general view that the energy justice concept is seen to be under-theorized and has not been explored extensively in academic literature, particularly from multiple situated perspectives.[69] In a presentation at an event on *Energy Justice in a Changing Climate*, Jenny Saunders (the Chief Executive of National Energy Action, UK) offered the following working definition:

> [In] the UK domestic sector context [energy justice is] about ensuring everyone can afford the energy they need for health and wellbeing. It comprises a range of factors which are to do with the distributional effects of how the competitive (or NOT so competitive) energy markets are working and it is also to do with how Government policies affect the way in which energy is regulated, produced and priced, as well, of course, as

[66] Thomas Hobbes, *Leviathan,* 11.1-2; Robert P. Kraynak, "The Behemoth: Doctrinal Politics and the English Civil War," ch. 3 in History and Modernity in the Thought of Thomas Hobbes (Cornell University Press 1990), 32-68: John Locke, Second Treatise of Government.
[67] Jose Ambrozic, "Beyond Public Reason on Energy Justice: Solidarity and Catholic Social Teaching" (2010) 21(2) Colorado Journal of International Environment Law and Policy 381-398.
[68] Sovacool and Dworkin, *Global Energy Justice* (n 3) 10.
[69] Vanesa Castán Broto and others, 'Energy Justice and Sustainability Transitions in Mozambique' (2018) 228 Applied Energy 645-655.

> the way in which individual household reliance on energy and need comes into play, and ensuring the needs of vulnerable households are met.[70]

For Salter, Gonzalez, and Warner, the concept of energy justice has emerged with two main definitions, both focusing on justice theories and that the concept is traditionally rooted in environmental justice and climate change.[71] According to these energy justice scholars, the first definition advances the idea that energy justice is composed of the three central tenets of distributive, procedural, and recognition justice.[72] The second definition emphasises eight core principles embedded in its framework which are as follows: availability, sustainability, affordability, due process, transparency and accountability, intra-generational equity, inter-generational equity, and responsibility.[73] An interesting fact about these principles is that they offer practical guidance to legislators, regulators, policymakers and the public in the formulation and implementation of energy law and policy.[74] The idea here is that they could be used to advance law and policy frameworks that would lead to the delivery of just energy systems to all people.

Sovacool and Dworkin for their part defined energy justice as a global energy system consisting of three key elements: (1) fair dissemination of energy benefits and services; (2) fair costs of energy services; and (3) evidence of a representative and impartial energy decision-making process.[75] According to these scholars, these elements imply that they translate into providing an energy-just world with the capacity to promote happiness, welfare,

[70] Jenny Saunders, 'Energy Justice-the Policy Challenges. Energy Justice in a Changing Climate: Defining an Agenda, InCluESEV Conference, 10 November 2011, London, UK.
[71] Raya Salter, Carmen Gonzalez and Elizabeth Kronk Warner (eds), *Energy Justice: U.S and International Perspectives* (Edward Elgar Publishing 2018) 2.
[72] ibid 2.
[73] Benjamin Sovacool and others, 'Energy Decisions Reframed as Justice and Ethical Concerns' (2016) 3 (1) Nature Energy 1.
[74] Salter, Gonzalez and Warner (n 71) 4.
[75] Sovacool and Dworkin, *Global Energy Justice* (n 3) 13.

freedom, equity, and due process for both producers and consumers.[76] They further noted that an energy-just world would be one that equitably shares both the benefits and burdens of energy and its services, as well as one that is fair in how it treats people and communities in energy decision-making.[77] The three key elements above have been further developed from another perspective in the scholarship with the viewpoint that the concept is more of a principle advocating that all people should have (i) a reliable, safe, and affordable source of energy; (ii) be protected from a disproportionate share of costs or negative impacts or externalities associated with building, operating, and maintaining electric power generation, transmission, and distribution systems; and (iii) equitable distribution of and access to benefits from such systems.[78]

Furthermore, the advancement of the concept has been described as a new cross-cutting social science research agenda, which seeks to apply justice principles to energy policy,[79] energy production and systems,[80] energy consumption,[81] energy activism,[82] energy security,[83] the energy trilemma,[84] political economy of energy,[85] and climate change.[86] Although the energy justice concept has been used in practice for almost a decade, it was not until 2013

[76] ibid.
[77] ibid 5.
[78] Aladdine Joroff, 'Energy Justice: What it Means and How to Integrate it into State Regulation of Electricity Markets' (2017) 47 Environmental Law Reporter 10927.
[79] McCauley and others, 'Advancing Energy Justice' (n 54) 107.
[80] Raphael Heffron and Darren McCauley, 'Achieving Sustainable Supply Chains through Energy Justice' (2014) 123 Applied Energy, 435-437.
[81] Sarah M. Hall, 'Energy Justice and Ethical Consumption: Comparison, Synthesis and Lesson Drawing' Local Environment (2013) 18 (4) International Journal of Justice and Sustainability 422-437.
[82] Sara Fuller and Daren McCauley, 'Framing Energy Justice: Perspectives from Activism and Advocacy' (2016) 11 Energy Research Social Science 1-8.
[83] Benjamin Sovacool, Roman Sidortsov and Benjamin Jones, *Energy Security, Equality and Justice* (Routledge, London, 2013) 21.
[84] Raphael Heffron, Darren McCauley and Benjamin Sovacool, 'Resolving Society's Energy Trilemma through the Energy Justice Metric' (2015) 87 Energy Policy 168-176.
[85] Kirsten Jenkins, Raphael Heffron and Darren McCauley, 'The Political Economy of Energy Justice in Canada, the UK and Australia: a Nuclear Energy Perspective', in T. Van de Graaf, B.K Sovacool, A. Ghosh, F. Kern, M.T Klare (eds), *Palgrave Handbook of the International Political Economy of Energy*, (Palgrave Macmillan 2016)
[86] Sovacool and Dworkin, *Global Energy Justice* (n 3) 37.

that it began to surface within the academic sphere.[87] Relatively, it has been pointed out in some literature with interconnected definitions depending on the context in which it is discussed. For example, within the energy sector, the concept of energy justice has been discussed from the perspectives of human rights abuse,[88] environmental impact,[89] lack of social licence to operate,[90] lack of access to energy,[91] unaffordability of energy, unjust energy institutions, and the prevalence of corruption in the operation of energy systems.[92] While an extensive discussion of the concept from these perspectives may present a different understanding, the overarching principle is to provide all individuals across all areas, with safe, affordable, clean and sustainable energy.[93] A brief discussion of some aspects of injustices existing in energy system is undertaken below. This injustices necessitate the present research – as per evaluating the concept and its framework whether it could offer new and specific approaches toward resolving the energy access and poverty challenges in Nigeria.

1.10.1 Unaffordability of Energy

Energy injustice manifests through the inability of people to afford energy and its services. Unaffordability of energy in Nigeria is viewed as one of the factors exacerbating the energy access and poverty challenges.[94] Presently, the energy supply is unevenly distributed in Nigeria due to high prices which in many cases put rural populations at a disadvantage. While the population in urban areas tend to benefit more from the available energy services in the

[87] Salter, Gonzalez and Warner (n 71) 2.
[88] Sovacool and Dworkin, *Global Energy Justice* (n 3) 166-68; See also Damilola S. Olawuyi, 'Energy (and Human Rights) for All: Address Human Rights Risks in Energy Access Projects' in Raya Salter, Carmen C. Gonzalez and Elisabeth Kronk Warner (eds), *Energy Justice: U.S and International Perspectives* (Edward Edgar, 2018) 75.
[89] Mostert and Van Niekerk (n 37) 52.
[90] Raphael Heffron and others, 'The Emergence of "Social Licence to Operate" in the Extractive Industries' (2018) Resources Policy 2 <https://doi.org/10.1016/j.resourpol.208.09.012> accessed 10 January 2022
[91] Mostert and Van Niekerk (n 37) 51.
[92] ibid 54-55.
[93] McCauley and others, 'Advancing Energy Justice' (n 54) 107.
[94] Mostert and Van Niekerk (n 37) 51.

country, the same cannot be said about the population in rural areas. It is apparent that those who suffer the most are the ones who are supposed to be protected, the indigent, for whom cheap energy is 'the sole perk of their country's oil riches'.[95] The poor level of affordability in many rural communities in the country is attributed to different aspects of injustices manifesting in Nigeria's energy systems. As we already know energy's presence and influence in the human and social world is ubiquitous.[96] Its availability and affordability require the eradication of energy poverty and the provision of its services on an equitable basis to all.[97] Regrettably, the level of affordability in Nigeria is poor as many citizens cannot afford energy and its services.

1.10.2 Lack of Access to Energy

Lack of access to energy connotes injustice when it is viewed from the perspective of the principles embedded in the energy justice concept.[98] Access to energy and its services remains one of the key objectives of energy justice,[99] because people require access to energy to live sufficient and healthy lives.[100] It is also required for getting the necessities of life without which life becomes difficult. We note that access to modern energy services is a prerequisite to overcoming economic poverty.[101]

Presently, Nigeria struggles with the problem of lack of energy access, particularly in rural areas. The World Energy Outlook 2020 database as published by the International Energy Agency placed electricity access in Nigeria at 61.6% as of 2019, with 77 million people

[95] The Economist, Oil in Nigeria: Problems at the Pump available at https://www.economist.com/middle-east-and-africa/2015/05/28/problems-at-the-pump accessed 20 January 2022
[96] Mario Giampietro, Kozo Mayumi and Alevgul H. Sorman, *Energy Analysis for a Sustainable Future* (Routledge 2013) 27.
[97] Benjamin Sovacool and others, 'Energy Decisions Reframed as Justice and Ethical Concerns' (n 72) 5.
[98] Mostert and Van Niekerk (n 37) 51.
[99] Guruswamy (n 24) 88.
[100] Gordon Walker and Rosie Day, 'Fuel Poverty as Injustice: Integrating Distribution, Recognition and Procedure in the Struggle for Affordable Warmth' (2012) 49 Energy Policy 70.
[101] Jabavu Clifford Nkomo, 'Energy Use, Poverty and Development in the SADC' (2007) 18 Journal of Energy in Southern Africa, 11; Adrian J. Bradbrook and Judith G. Gardam, 'Placing Access to Energy Services Within a Human Rights Framework' (2006) 28 Human Rights Quarterly 389.

without power supply.[102] It goes on to put electricity access for the urban population at 91.4%, while that of the rural population was placed at 30.4%.[103] Regrettably, this has led to heavy reliance on unsustainable biomass in rural areas which is linked to environmental destruction and climate change. The poor energy access is characterised by constant blackouts, lack of connection or access to the national grids, poor transmission networks, and failure to pursue a robust energy mix. The lack of access to energy and the overwhelming reliance on biomass for cooking have adverse consequences for human health and contribute to climate change.[104] For this reason, this research would investigate whether the energy justice concept could create the impetus to expand access to clean energy through the pursuit of a practical robust energy mix in Nigeria.

1.10.3 Unjust Energy Institutions

A key challenge with Nigeria's energy systems is the institutional mode of operations with issues of lack of transparency and accountability that have led to the breakdown of energy institutions that are originally required to show empathy for the interests of marginalised and vulnerable citizens.[105] For instance, energy institutions in Nigeria often do not set up clear and comprehensive standards that should help shape energy decisions relating to poor access, and energy efficiency, among others, or on how to achieve transparent and accountable forms of energy decision-making. Additionally, they are generally not receptive to the idea of inclusion of local knowledge and having different levels of governance at the local level, which is indicative of the processes of information sharing, participation in decision-making

[102] International Energy Agency, World Energy Outlook 2020 https://iea.blob.core.windows.net/assets/a72d8abf-de08-4385-8711-b8a062d6124a/WEO2020.pdf accessed 20 January 2022. The Energy Progress Report 2021 published by The World Bank, the IEA, the International Renewable Energy Agency (IRENA), the United Nations , and the World Health Organization ranked Nigeria as the world's worst country with regards to access to electricity with about 90 million of the total population without power supply.

[103] ibid.

[104] Guruswamy (n 24) 91.

[105] Adedolapo Akinrele, 'Transparency in the Nigerian Oil and Gas Industry' (2014) 7 (3) Journal of World Energy Law and Business 221.

and inclusion of various stakeholder. Regrettably, these issues, which are largely underpinned by justice concerns, have in diverse forms contributed to the long-running energy challenges in Nigeria.

The existence of 'just energy' institutions is essential to the realisation of energy justice.[106] Just like the existence of a comprehensive legal and regulatory framework for the energy sector is a prerequisite for protecting the interests of individuals and groups, so also is establishing just energy institutions an important component of the energy justice framework.[107] In practice, when we have energy institutions that are largely independent and devoid of interference from the central government, they tend to help realise the objectives of energy justice. This could be achieved through their responsibilities geared toward among other things exposing injustices by energy monopolies and addressing energy poverty. Energy availability and efficiency could be enhanced through the establishment of just energy institutions that are seen to be transparent, accountable, and can exercise some form of independence even though they may be run by an agency of the national government.

1.10.4 Poor System of Energy Efficiency and Conservation

Nigeria's national government has a responsibility to design frameworks that seek to facilitate energy efficiency strategies in order to reduce some of the effects of the energy crisis. The form of energy injustice perpetrated through poor efficiency and conservation constitutes the failure on the part of the Nigerian government through its national enterprise to devise means that facilitate energy efficiency systems. This is further seen in the failure of the current policy framework to consider the importance and gains of energy efficiency to economic growth and development.

[106] Amartya Sen, *The Idea of Justice* (Penguin Books 2010) 8-17.
[107] ibid.

Energy efficiency simply means a visible improvement in practices and products that reduce the energy necessary to provide services.[108] Poor practice of energy efficiency and conservation increases the challenges associated with the delivery of energy services. On the other hand, good practice of energy efficiency reduces the footprint of energy systems in communities where such injustice exists.[109] The benefits derivable from the practice of energy efficiency and conservation by various economic sectors remain largely untapped in Nigeria. This is due mainly to a lack of awareness of the economic and social benefits of energy efficiency measures.[110] Additionally, the poor level of energy efficiency in Nigeria is attributed to the nature of policy applicable in the energy sector. Energy efficiency and conservation practice could contribute towards the realisation of some aspects of Nigeria's commitments to the UN SDGs because its measures could potentially help to get energy services to a large percentage of people who are currently without access.

1.10.5 Environmental Impact Crisis

Environmental impact of the extractive industries is another key manifestation of energy injustice. Sovacool and Dworkin noted that environmental damage in extractive industries occurs across four dimensions, namely climate change, air pollution, water pollution, and land-use changes.[111] Among these, environmental damage and water pollution have proven to be the most severe as we have seen in the Niger Delta Region (NDR) of Nigeria.[112] It is instructive to note that environmental considerations and activities of the extractive industries are intertwined and it is impossible to deal with one aspect without referring to the other.[113]

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[108] Sunday Olayinka Oyedepo, 'Energy Efficiency and Conservation Measures: Tools for Sustainable Energy Development in Nigeria' (2012) 2 (3) International Journal of Energy Engineering 86-89, 90.
[109] Thoko Kaime and Robert Glicksman, 'An International Legal Framework for SE4All: Human Rights and Sustainable Development Law Imperatives' (2015) 38 (5) Fordham International Law Journal 1430.
[110] ibid 1430.
[111] Sovacool and Dworkin, *Global Energy Justice* (n 3) 68.
[112] See the OILPRICE.COM (3 June 2016) <http://oilprice.com/Energy/Crude-Oil/How-Corruption-And-Oil-Crime-Are-Tearing-Nigeria-Apart.html> accessed 18 January 2022.
[113] Mostert and Van Niekerk (n 37) 52.

For example, the extraction of oil, coal, and natural gas is water-intensive. This means that a vast quantity of water is required for the extraction process which ultimately creates a high chance of water pollution.[114] This process causes tension between local residents of oil producing communities, national governments, and energy companies.[115] The tension transforms into civil unrest leading to the destruction of oil pipelines and other energy infrastructures, abduction of expatriate workers, and disruption of oil and gas production for energy. This contributes to the energy challenges in Nigeria, while also affecting government revenues and energy supply across the country.

1.10.6 Corruption

Undoubtedly, Nigeria remains a prime example of how corruption can affect the development of oil and gas resources for the benefit of a country. Presently, oil makes up around seventy percent of all government revenues in Nigeria and is the largest portion of its gross domestic product.[116] However, despite the country's rich deposits of oil resources, many Nigerians still live in poverty as successive governments have consistently failed to translate the resources into socio-economic wealth. The Nigerian state was created in the 1960s and at that time enjoyed huge benefits from oil resources.[117] Regrettably, as time went by, the Federal Government of Nigeria took sole title to oil resources through decree and cut regional entitlement to benefits down to almost nothing.[118] Unfortunately, this approach made the NDR, a region with extremely abundant oil reserves, one of the poorest and least regions in the country by the mid-1990s.[119]

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[114] Sovacool and Dworkin, *Global Energy Justice* (n 3) 80-81.
[115] Ruth Krause, 'Oil Spills Keep Devastating Niger Delta' *DW* (20 March 2015) <http://www.dw.com/en/oil-spills-keep-devastating-niger-delta/a-18327732> accessed 28 January 2022.
[116] Augustine Ikelegbe, 'The Economy of Conflict in the Oil Rich Niger Delta Region of Nigeria' (2005) 14 Nordic Journal of African Studies 208.
[117] ibid 214.
[118] ibid.
[119] ibid.

The prevalence of corruption, especially where certain individuals are enriched at the expense of local communities where crude oil is exploited is a clear manifestation of energy injustice.[120] In Nigeria, corruption is apparent in oil and gas production,[121] as well as the mining industry.[122] For example, corruption relating to revenues from crude oil is so prevalent that agencies, like Transparency International and the World Bank, have described the Nigerian state as one of the most corrupt in the world.[123] Sadly, the issue of corruption and mismanagement of oil revenues have also been reported to be among the reasons for the neglect of the four national oil refineries in Nigeria.[124] For a country with huge deposits of oil and gas resources, it is expected that Nigeria should be energy sufficient but the poor state of the national refineries is evidence of corruption in the energy sector. This challenge is also seen as a contribution to the tension in the NDR, thus causing disruptions to oil and gas production in the country.[125]

Having briefly started to map out the issues for analysis, the next chapter of examines the economic, social and environmental impacts of the energy crisis in Nigeria. The analysis of the energy crisis and its impact would form the basis for the introduction of the energy justice concept and framework as a potential tool to resolve the energy challenges in Nigeria.

[120] Sovacool and Dworkin, *Global Energy Justice* (n 3) 169.
[121] Grimot Nane, 'Denying Oil Exploitation and Corruption in the Niger Delta' in M Kennet, M Mekonen, J Felton, and A Winchester (eds), *Green Economics: Voices of Africa: Green Economics: A Beacon of Hope for Africa:* Green Economics Institute Handbook, Reading (2011)
[122] Sovacool and Dworkin, *Global Energy Justice* (n 3) 169.
[123] Chux Ibekwe, 'Corruption in Oil Revenue Distribution and Conflict in Bayelsa State, Nigeria' (PhD Thesis, Kennesaw State University 2014) 3.
[124] Olusola Joshua Olujobi, 'Nigeria's Upstream Petroleum Industry Anti-Corruption Legal Framework: the Necessity for Overhauling and Enrichment' (2021) Journal of Money Laundering Control
[125] Mostert and Van Niekerk (n 37) 47.

CHAPTER TWO

Understanding the Economic, Social and Environmental Implications of Energy Crises

2.0 Introduction

> No one today is ignorant of the part played by energy, not only in science, but in industry, politics, and the whole science of human welfare. From the cradle to the grave, everyone is dependent on nature for an absolute continuous supply of energy in one or other of its numerous forms. When the supplies are ample, there is prosperity, expansion, and development. When they are not, there is want.[1]

This chapter examines the 'energy crisis' phenomenon in general and subsequently looks at its economic, social and environmental implications in Nigeria. The analysis drawn focuses on three key dimensions to energy crises, namely: (i) shortages of energy supply; (ii) high demand/over-consumption; and (iii) energy wastage. It is important to note that the conceptualization of energy crises in this chapter is drawn from the energy access and poverty challenges presently faced by mainly developing countries such as Nigeria. The concept of energy crises is used here as an overarching description of energy challenges specifically linked to access and poverty. The chapter further acknowledges emerging discussions of current injustices existing in Nigeria's energy systems, and how they contribute to the country's energy access and poverty challenges.

Whilst the dimensions to energy crises are examined in this chapter, the impact created as well as some national measures, particularly through energy policies introduced by the

[1] F Soddy, *Matter and Energy* (1912) cited in AA Jordan, H Bryan, and M Moudie, *Facing the International Energy Problem* 1980-2000 (New York, Praeger 1979)

national governments (in this case Nigeria) to resolve the economic, social and environmental effects are also highlighted. The goal of the current chapter is to understand the socio-economic implications of energy crises using Nigeria as the case study, with subsequent chapters of the research analysing whether the energy justice concept and its framework could offer specific measures toward resolving the energy crisis in Nigeria. Overall, this chapter sets out a background study of the energy challenges (i.e the energy crisis) in Nigeria, including the current level of energy insecurity with a view to finding in subsequent chapters whether the energy justice framework could be used as a strategic tool to resolve the challenges.

Following this introduction, the chapter begins with a general discussion on energy crises, analysing some of the key causes that are generally set against the background of a wider political-legal context of energy policy, energy security, fuel poverty and environmental protection. Next, it provides analyses of three dimensions to energy crises and their socio-economic impacts on a state. It then moves to examine the energy crisis phenomenon in the context of Nigeria, together with its effect from three distinct perspectives namely: (1) economic, (2) social, and (3) environmental. This is followed by an examination of the various policy measures introduced by the Nigerian government to address the impacts of the energy crisis. Lastly, the chapter considers the role that energy security could play in resolving the energy crisis and further realising the United Nations (UN) Sustainable Development Goals (SDGs) in Nigeria. In this regard, it argues that achieving energy security is important to the Nigerian state not only as a measure to resolve the energy crisis but to enhance its capacity to realise the SDGs. Overall, the idea is to ascertain the energy justice framework could be used as a viable tool to achieve energy security which in turn could help Nigeria in the realisation of the SDGs.

2.1 Definitional Context

This section examines the energy crisis concept and further provides analyses from three key dimensions. The three dimensions are (1) shortages of energy supply; (2) high demand/over-consumption; and (3) energy wastage.

For many years, mankind has always needed energy and will continue to need energy.[2] While the sources and usage of energy needed by man may have changed with time, some patterns have remained constant.[3] This explains why energy is needed everywhere and drives everything to the extent that the modern life of mankind, both individual and society depends largely on its availability.[4] Therefore, energy is seen as the force propelling our vehicles, lighting our world, facilitating industrialisation, and is essential to the economic well-being of any given state in the same way as food is important to the health of a person.[5]

It has been observed that man's interdependence on energy is a fact of international life.[6] This implies that the disruption, turmoil, and evident risks to energy supply demonstrate both its tangibility and how fundamental it is to modern life.[7] Against this background, it would mean that when there are energy access and poverty challenges, especially in the form of insufficient availability of its supply, this means that individual States, largely dependent on energy for economic growth and development, are thrown into an unpleasant situation or crisis that could lead to the collapse of their economy.

An in-depth understanding of the phrase 'energy crisis', its dimensions, and implications on socio-economic growth and development will provide the necessary background for further

[2] Eugene Coyle and others, 'Reflections on Energy, Greenhouse Gases, and Carbonaceous Fuels' in Eugene Coyle and Richard Simmons (eds) *Understanding the Global Energy Crisis* (Purdue University Press 2014) 12.
[3] ibid.
[4] ibid 13.
[5] Charles Stith, "For Africa, Energy is Destiny", (2012) Africa Business 389, 30-32.
[6] Larry Neal and Rando Cameron, *A Concise Economic History of the World: From Paleolithic Times to the Present* (Oxford University Press 2016) 118.
[7] ibid.

discussions. The phraseology of the energy crisis phenomenon has become commonplace, but in reality, it conveys a variety of meanings in different contexts.[8] This is because there is no unified or commonly accepted definition of the concept.[9] To this end, some commentators and energy scholars have argued that the phrase simply describes a situation of shortage of energy supply, particularly of natural gas and oil.[10] Furthermore, the energy crisis could also be described as a situation where a nation is faced with disruptions in energy supply accompanied by rapidly increasing prices that threaten economic and national security.[11] To put it differently, 'we simply are running out of fossil fuels, the earth supply is finite, and that supplies are declining and resources dwindling is beginning to show'.[12] For instance, writing about the U.S energy crisis in 1979, Aman refers to the long lines experienced at gasoline stations in 1975, the nationwide imposition of fifty-five-MPH speed limits, the disruption of the economy in the winter of 1977, and perhaps most importantly, the 1973 Arab oil boycott that resulted in a dangerous declaration of the U.S dependence on foreign oil.[13] All of these, he said, were indications that by the late 1970s the U.S was about to enter into a new era of energy scarcity.[14]

According to Ziagos and Wedel, the energy crisis is any shortfall in the supply of energy.[15] More specifically, Brown opined that the energy crisis is seen as the problem of decreasing oil production (affecting exporting nations) and increasing oil prices (affecting importing nations).[16] Brown's definition of energy crisis brings to the fore two things. Firstly, it reflects

[8] Alfred C. Aman, 'The Energy Crisis A Few Perspectives' (1978 -1979) 5 Cornell Law Forum ed, 11.
[9] ibid 12.
[10] ibid 12.
[11] Uche C. Nwogwugwu 'The Effect of Energy Crisis on Nigerian Economic Transformation and Growth Process: The Way Forward' (2006) 2 (2) Nigerian Army Quarterly Journal 211.
[12] ibid.
[13] ibid
[14] ibid 11.
[15] John Ziagos and K Wedel, "Energy Crisis: Will technology Save Us?" (2007) March 24 Science on Saturday https://www.osti.gov/sciencecinema/biblio/987118 accessed 18 January 2022.
[16] Bill Brown, "The Present Energy Crisis: Is it Deja-Vu, All over Again?" (2010) The Electrochemical Society Interface https://www.electrochem.org/dl/interface/wtr/wtr10/wtr10_p007.pdf accessed 18 January 2022.

how developed nations involved in major importations of energy suffer economically due to the scarcity of energy to power their economy. For example, despite being an oil producing country with four national oil refineries, Nigeria still imports refined petroleum products for economic purposes including the energy needed for key sectors such as transportation. Secondly, it describes the situation of energy-exporting nations suffering from declining oil production as a result of low oil prices and disputes in the global energy market.

For a more practical view, it is important to examine the concept from the perspectives of developed and developing nations. An energy crisis may be viewed as 'an alteration of energy balance in the general circulatory system arising from decrease or increase in energy demand with attendant economic and environmental impact'.[17] The alteration of energy balance may lead to either a rise or fall in energy prices.[18] Thus, when there is an increase in energy prices, developed nations may suffer some kind of setbacks in their economy as a result of the high cost of energy, while oil-producing developing nations enjoy economic gain due to the increase in revenue.[19] On the other hand, when a fall in energy price occurs, developed nations enjoy economic growth because it creates access to more energy required to power their economy, while the producers (mainly from oil-producing developing nations) suffer economic setbacks and environmental degradation because they would have to produce more energy which will only earn them less revenue.[20] Consequently, the production of more energy may lead to lower environmental standards, especially in developing nations with huge deposits of oil resources.

[17] Festus Mbalisi and Beatrice Offor, "Energy Crisis and its Effect on National Development: The Need for Environmental Education in Nigeria" (2015) 1 Vol. 3 British Journal of Education 21-37, 26.
[18] ibid 26
[19] ibid 26.
[20] ibid 26.

The advantage to energy-importing nations when there is a fall in energy prices is that it becomes a benefit to consumers and sometimes results in tax cuts.[21] The reason is that because consumers will be paying less for gasoline, home heating, and other domestic use of energy, they will have more disposable income and will, therefore, tend to increase their spending on other things; thus stimulating economic growth. On the other hand, if the price of energy in the global market remains low for a significant time, the energy producers or exporting nations are likely to face serious economic challenges because their energy sector is, typically, responsible for over 50-90 per cent of their economic growth.[22] Regrettably, this low growth may lead to a sudden drop in their GDP. The point to note here is that at any time when the volume of energy supply changes this has a consequential effect on the price of energy, which affects both producing/exporting and/or importing/consumer nations, with different implications and effects on the economies of nations depending on whether they are an energy-exporting or importing country.

It is interesting to note that the analysis above aligns with the school of thought that describes the energy crisis phenomenon as a situation involving insufficient availability of energy. The inference that may be drawn from this is that key sectors of the economy usually face serious socio-economic challenges such as the increase in gas and petroleum prices due to the shortages of energy supply. Consequently, at the very least, the day-to-day conveniences of citizens are put in jeopardy, while national security and the long-term growth potential of the economy are faced with uncertainties.[23]

To provide a better understanding of the energy crisis phenomenon this research acknowledges that the definition should not be restricted to mean only 'insufficient

[21] Daniel Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World* (Penguin Books 2012) 108.
[22] ibid 108.
[23] Aman (n 8) 13.

electricity' as many energy scholars have opined. However, insufficient electricity supply or non-availability should be viewed merely as only one distinct form of energy challenges, which can bring about an energy crisis, and to this list of challenges, we should also add a number of other similarly serious challenges caused by the energy laws and policies within a state. For example, lack of practical diversification and/or decentralisation of energy options, a policy framework that constitutes a form of energy challenges that could translate into an energy crisis. This is because the idea of having diversified energy sources and/or options could potentially increase energy access and therefore augment the overall national production. Additionally, environmental damages, arising from oil exploration and production should not simply be viewed as being an 'environmental crisis', but also as forming part of a bigger 'energy crisis'. Similarly, as we will see, there are other problems caused by current policies in place within Nigeria, which should also be conceived as contributing to the current energy crisis.

It is important to note that while the shortage or lack of energy access can cause an energy crisis, which affects every area of socio-economic growth and development in any state[24], so too can other energy challenges or problems as these may also have devastating impacts on society. This research argues that Nigeria has a number of energy challenges, distinct from shortages or lack of energy access, and these other challenges are equally having devastating impacts on socio-economic conditions within the country.

In sum, the energy crisis phenomenon largely constitutes amongst other things the struggle to increase energy access for domestic, commercial, and industrial use which should make the standard of living acceptable. This implies that countries experiencing an energy crisis will constantly find themselves in a situation where they have to strive continuously to ensure that there is no cut in energy supply in addition to ensuring sufficient access. Therefore, national

[24] Mbalisi and Offor (n 17) 27.

governments, as well as policymakers must ensure that all activities carried out within the energy sector are geared toward ensuring sufficient energy access.

2.2 Dimensions to Energy Crises

Depending on which form energy challenges may appear and how a nation is confronted by them, the dimensions to energy crises are attributed to the challenges in a particular state. For instance, the energy challenges confronting any state may be connected to the cost of energy, its importance to developmental activities and environmental implications surrounding the generation and use of various forms of energy.[25] These challenges may relate to unaffordability, unavailability, unjust energy institutions, environmental impacts arising from production, and a poor system of energy efficiency and conservation – all of which have become prevalent in energy systems, particularly in domestic regimes. These different forms of energy challenges determine the dimension of the energy crisis confronting a state.

In the energy landscape, the challenges in energy sectors that turn out to be a form of energy crises (for example shortages) are sometimes attributed to a lack of effective energy policies and laws that should create an enabling environment and drive investments. For oil-producing developing nations such as Nigeria, energy challenges are exacerbated by the government's decision to build an economy that is largely dependent on a particular energy source. This approach leads to high demand/over-consumption of a single energy source, the demand of which leaves the country with a distinct form of energy crisis. Drawing on the analysis of the energy crisis concept above and from energy scholarship more broadly, the dimensions to energy crises are framed under three headings namely: (1) shortages; (2) over-consumption and (3) wastage. A discussion of the three dimensions is undertaken below.

[25] ibid 22.

2.2.1 Shortage of Supply

The shortage of energy supply (also referred to as poor energy access in Global South countries such as Nigeria) remains one of the major reasons why states experience an energy crisis. This is often experienced because of a reduction in oil production from the perspective of a producing nation or major scarcity from the perspective of a nation that is involved in importation. Shortages of energy supply can also result from increasing oil prices at the international energy market, thus contributing to the energy crisis problem of States that are dependent on the energy market. For, example, the two worst energy crises in the history of the U.S occurred in 1973 and 1979.[26] Interestingly, the two energy crises were a result of shortages of energy supply to the U.S economy. Although, the 1973 crisis was linked to the Arab Oil Embargo and the 1979 crisis was caused by the Iranian revolution, both energy crises culminated in a drastic shortage of energy supply which by every stretch of impacted every corner of the U.S economy. It is noteworthy that there are other issues such as the reduction in oil production in the U.S and other parts of the world with sources of oil such as the Middle East and increasing oil prices that contributed to this energy crisis period in history.[27] However, one thing that is clear from the above discussion is that shortage of energy translates into one of the dimensions to energy crises.

2.2.2 High Demand/Over-consumption

Excessive consumption of energy constitutes another dimension to energy crises as it could lead a country down the path of over-reliance on a particular energy source. The reality is that sufficient availability of energy is needed to sustain the economic growth and development of any state. Perhaps, this explains the reason why many countries, particularly in the Global South find themselves to be over-dependant on fossil fuel which is often a result of the way their economy is designed to operate. For instance, higher prices of energy could be caused

[26] Brown (n 16).
[27] ibid.

by increased scarcity, either because of excessive demand or because of inadequate or delayed investment in high-risk countries where oil and gas energy resources are concentrated.[28] It is observed that States that are mainly involved in over-consumption of energy find themselves in a situation where there is usually a high demand for energy to power their economy. The implication of this is that such over-dependence could lead to a crisis in the energy sector. For example, in the U.S, the Arab embargo leading to the 1973 energy crisis brought to reality the over-dependence and over-consumption of fossil fuel in the U.S.[29] This challenge affected the economy of the U.S simply because of the over-reliance and over-consumption of fossil fuel in almost every sector of the country's economy.

Another way through which over-consumption could lead to energy crises is when it is considered from the lens of environmental pollution, particularly in oil-producing countries.[30] Undoubtedly, excessive energy demand as we have seen in developed countries is attributed to a number of reasons, including over-consumption. The world's consumption model relies almost entirely on the use of non-renewable energy sources such as oil, gas, coal, and uranium amongst others.[31] At the current rate of consumption, oil may likely be the first fossil fuel energy to run out.[32] According to projections, there would be between 40 and 60 years of proven reserves of conventional oil, while natural gas could be exploited for another 70 years.[33]

It is important to note that due to energy demands, particularly from developed countries, oil-producing countries may feel obligated to produce more oil for the global energy market. For

[28] Jean-Marie Chevalier, 'Introduction' in Jean-Marie Chevalier (eds), *The New Energy Crisis: Climate, Economies and Geopolitics* (Palgrave Macmillan 2009) 3.
[29] Brown (n 16)
[30] D. R Pendse, 'Energy Crisis and Its Impact on Energy Consumers in Third World: 1' (1980) 15 (3) Economic and Political Weekly 108.
[31] SolarImpulse Foundation, 'Solution to the Energy Crisis: How to Achieve Sustainable energy?' < https://solarimpulse.com/energy-crisis-solutions> accessed 8 January 2022.
[32] ibid.
[33] ibid.

instance, countries that rely heavily on oil revenues tend to produce more energy to meet global demands. This approach could lead to environmental pollution with drastic consequences such as civil unrest, militancy, and tension in host communities, particularly in oil-producing countries. This is evident in oil-producing countries where militants engage in acts of sabotage to the operations of multinational oil corporations in the industry.[34] This is because militants groups in oil host communities sometimes believe that an act of sabotage on energy infrastructures is one way to register their grievances about the negative impact of oil pollution on their environment. The point is that high demand for fossil fuel often serves to encourage oil-producing countries to undertake more exploitation and production of oil regardless of how the operations affect the environment and the lives of people in host communities.

2.2.3 Energy Wastage

In addition to the above two dimensions to energy crises, there is also the aspect of energy wastage resulting from the lack of conservation and efficiency mechanisms in energy policy frameworks. Particularly, for developing nations, this appears to be a form of injustice drawing from the nature of the policy framework that may not have been designed to address issues relating to energy efficiency. This approach is often associated with the culture of not being able to conserve energy, together with the lack of adequate energy efficiency measures in the system.

Energy wastage is mainly associated with the unnecessary use of energy and its services.[35] It describes the waste of energy or its services, particular fuels and electricity.[36] For instance, in Nigeria, a lot of energy is wasted because house-holds, public and private offices, as well as

[34] Bernard G. Taverne, 'Human Rights in Natural Resource Development: Public Participation in the Sustainable Development of Mining and Energy Resources (2002) 10 International Energy Law and Taxation Review 266.
[35] SolarImpulse Foundation (n 31)
[36] ibid.

industries use more energy than is necessary to fulfill their needs.[37] One practical reason for this is that they use outdated and inefficient equipment and production processes, making the need for energy to exceed its supply.[38] A contributory factor to the culture of energy wastage in developing countries is the apparent lack of energy efficiency policy framework and conservation mechanisms.

Energy efficiency and conservation measures incorporated into policy framework could play a dominant role in eradicating the culture of energy wastage. The reduction of energy wastage by consumers is a major attribute of energy-saving mechanisms, and it requires actions both on an individual and collective level. This is a responsibility that should be undertaken by national governments through established energy institutions. Where national governments focus on developing infrastructures to enhance energy conservation, they could help to stimulate the culture of conservation and could potentially address some aspects of the energy crisis in developing countries.

In sum, the dimensions to energy crises constitute diverse challenges that ultimately transform into an energy crisis faced by individual countries. While the dimensions culminate in a particular form, they are nevertheless country-specific and manifest in different ways. However, it is important to note that they thrive on the backbone of the shortfalls of the existing institutional, legal and policy frameworks applicable in energy sectors. The next section will examine the energy crisis in Nigeria.

2.3 An Examination of the Energy Crisis and its Effects in Nigeria

The importance of sufficient energy access in modern society cannot be overemphasised. Without sufficient energy access, it is difficult for any country to be fully engaged in

[37] Sunday Oyedepo 'Energy and Sustainable Development in Nigeria: the Way Forward' (2012) 2:15 Energy Sustainability and Society <http://www.energysustainsoc.com/content/2/1/15> accessed 18 February 2022.
[38] ibid.

meaningful economic development, such as, industrialisation. The unavailability and inaccessibility of electricity in Nigeria keeps increasing yearly, constituting a major challenge yet to be resolved by the Federal Government of Nigeria (FGN). Globally, Nigeria is one of the poorest countries in terms of electricity generation. The grid-connected electricity per capita consumption is 126 kWh.[39] We note that over 41% of the Nigerian populace has little or no access to electricity and this is estimated at 80 million people.[40]

Over the years, it is not in doubt that poor energy access, particularly in developing countries in SSA, such as, Nigeria has become one of the factors that contribute to national insecurity. In any modern society, any form of threat to national security could be attributed to declining economic growth, increasing inflation, rising unemployment, and losing billions of dollars in investment.[41] In principle, this may be attributed to the insufficient availability of energy supply to the economy of such a society. This aptly describes the Nigerian economic situation as the country continues to struggle to resolve its energy access problem. It is pertinent to note that Nigeria's energy sector requires a major drive to deliver optimally. Perhaps, such drive may begin from the point of understanding the nature of the country's energy challenges as well as other contributory factors.

In the last 58 years, Nigeria has struggled to have a stable energy supply.[42] Particularly, in the area of electricity demand, there have been significant shortfalls in terms of the dismal energy service provision, thus leading to the crisis.[43] According to the IEA, around 94% and 39% of

[39] Mustapha Mukhtar and others, Effect of Inadequate Electrification on Nigeria's Economic Development and Environmental Sustainability' (2021) 13 Sustainability 2229.
[40] ibid.
[41] Mbalisi and Offor (n 17) 22.
[42] Chineme Okafor, Nigeria' s Power Sector: 58 Years of Falling Behind Expectations https://www.thisdaylive.com/index.php/2018/10/02/nigerias-power-sector-58-years-of-falling-behind-expectations/ accessed 22 January 2022.
[43] Akin Iwayemi, Nigeria's Dual Energy Problems: Policy Issues and Challenges (International Association of Energy Economics, Fourth Quarter 2008) https://www.iaee.org/en/publications/newsletterdl.aspx?id=53> accessed 21 January 2022.

the population do not have access to clean cooking facilities and electricity, respectively.[44] The energy challenges experienced in Nigeria appear to be self-inflicted due to incessant years of poor energy law and policy frameworks. The challenges are also attributed to institutional problems on the part of authorities saddled with the responsibility of providing energy for the citizenry.[45] This is evidenced by the lack of a policy framework that should facilitate practical diversification of energy options and/or sources that could be used to resolve some aspects of the challenges in the country.[46] It is interesting to note that the scale of the energy challenges in Nigeria has grown beyond any instant solution. This means that at a time when energy is considered to be the backbone of human activities and a vital commodity for the survival of modern economies,[47] national governments will require much more than energy laws and policies to address the deficiency besetting different aspects of the country's economy.

Nigeria is an energy surplus country in theory given the range of energy resources that are available in the country.[48] Notwithstanding, the country has failed to translate its energy abundance status into socio-economic growth and development. The energy crisis – as per shortages resulting from the poor institutional, legal and policy framework in Nigeria has weakened the industrialisation process and has prevented the nation from reaching its economic potential. According to the Council for Renewable Energy Nigeria (CREN), it is estimated that power outages caused by insufficient energy supply brought about a loss of

[44] International Energy Agency. World Energy Outlook 2017. Special Report: Energy Access Outlook; October 2017 https://iea.blob.core.windows.net/assets/9a67c2fc-b605-4994-8eb5-29a0ac219499/WEO2017SpecialReport_EnergyAccessOutlook.pdf accessed 20 February.
[45] Yemi Oke, 'Beyond Power Sector Reforms: The Need for Decentralised Energy Options (DEOPs) for Electricity Governance in Nigeria' (2012) 18 (1) Nigerian Journal of Contemporary Law, University of Lagos, 68-71, 67.
[46] ibid.
[47] Donald Zillman and others, *Beyond the Carbon Economy: Energy Law in Transition* (Oxford University Press 2008) 3.
[48] Oke (n 45) 70.

126 billion naira (US$ 984.38 million) annually.[49] Besides the huge income loss, the energy challenges have also resulted in health hazards due to the exposure to carbon emissions caused by the constant use of 'emergency power generators' in many households and business enterprises, and an increase in the unemployment rate and high cost of living leading to a deterioration of living conditions.[50] The energy crisis in Nigeria has undermined efforts to achieve sustained economic growth, and halted the increase that ought to be seen in the competitiveness of domestic industries in domestic, regional and global markets and employment generation.[51]

Furthermore, the dismal energy service provision has adversely affected the living standards of the population and exacerbated income and energy poverty in an economy where the majority of the people live on less than $2 a day.[52] This is owing to the policy environment from institutional and governance failures which induce gross distortion and inefficiency in production, investment choices and low return on investment and expensive delays and cost overruns in the state energy enterprises.[53] For example, the failure of the four state oil refineries to operate at full capacity to augment the importation of petroleum products in Nigeria is linked to the nature of the institutional, legal and policy framework in the energy sector. This policy problem is also evidenced in the failure to fully harness the country's non-conventional energy sources.[54] Developing a practical and robust energy mix as a pathway to address the shortfalls in Nigeria's energy sector remains a policy issue that needs to be addressed by the government. This is because the failure on the part of the government to

[49] Council for Renewable Energy Nigeria <https://www.renewablenigeria.org.ng/index.php/en/> accessed 20 February 2022.
[50] Oyedepo (n 37)
[51] Iwayemi (n 43)
[52] ibid.
[53] Godswill Agbaitoro, 'Is Having a Robust Energy Mix a Panacea for Resolving the Energy Crisis in Nigeria?' (2017) 7 (4) Renewable Energy L. & Pol'y Rev, 8.
[54] ibid 8.

engage in practical and robust diversification of the country's energy options remains a contributory factor (at least from a policy perspective) to the energy crisis in Nigeria.[55]

Presently, the shocks from the energy crisis have created diverse problems in the national wheel of effective management of industrial and socio-economic transformation and growth.[56] The magnitude of the energy deficiency problems is manifested in the poor level of industrial capacity and utilisation, the high rate of struggle and closure of manufacturing firms, the high unemployment rate, low-level of growth in small and medium scale industries and underdevelopment of the rural areas.[57] Consequently, this has led to the conclusion that an understanding of Nigeria's energy deficiency problem requires first an understanding of the culture at a level deeper than what is available only through reading literature.[58]

Undoubtedly, the availability of energy has proven to be a major catalyst for economic growth and development in many advanced nations around the world. Amongst other things, energy aims at meeting human welfare, boosting agricultural activities, transportation, and industrialisation.[59] Therefore, it is safe to conclude that energy is crucial to all aspects of human development.[60] This implies that the success of industrialisation of any nation depends largely on the level of energy available for sufficient power, mechanical work, transportation, infrastructural development, commerce and information technology and research.[61]

According to the Manufacturing Association of Nigeria (MAN), in one of its semi-annual economic reviews conducted between 1995-1999, it was observed that "…there is no facet of

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[55] Oke (n 45) 67.
[56] Nwogwugwu (n 11) 234.
[57] ibid 234.
[58] Julia Kennedy-Darling and others, 'The Energy Crisis of Nigeria: An Overview and Implications for the Future' (2008) University of Chicago <http://franke.uchicago.edu/bigproblems/Energy/BP-Energy-Nigeria.pdf> accessed 25 January 2022.
[59] P.D Sharma, *Ecology and Environment* (10th edn, New Delhi, India: Rastogi Publications 2009)
[60] Thoko Kaime and Robert Glicksman, 'An International Legal Framework for SE4All: Human Rights and Sustainable Development Law Imperatives' (2015) 38 (5) 1405.
[61] Israel Owate, F.U Nte and J. Nna, *Energy Resources and Environmental Crisis* (Pearl Publishers 2005)

the national economy that has not been adversely affected by the energy crisis but the worst hit is the main engine of economic growth and progress" – the manufacturing sector.[62] Evidence of the impact of the energy crisis is seen in the collapse of the textile industry due to a lack of adequate electricity supply to the industry.[63] The shortage of energy led to a constraint on the textile industry's productive capacity and increased the cost of production, thereby raising the energy cost as a result of self-generation which made the industry less competitive with foreign textile industries.[64] Regrettably, there has been no significant change in terms of the energy crisis affecting the Nigerian manufacturing sector since 1999. The point here is that energy is needed in every sphere of human activity, so much so that without it, the satisfaction of human needs, which brings comfort and convenience can hardly be met.

From the above, it is clear that the social, economic, and political consequence of the energy crisis is not a new phenomenon even on the international scene.[65] The effect of energy crises is often felt in different aspects of an economy due to the importance of energy as a commodity with the potential to transform the economic life of any nation. As for Nigeria, the energy crisis continues to manifest through the dimensions discussed in section 2.2. This is evidenced, firstly, through the shortages of energy affecting the economic growth and development of a country that is supposedly awash with energy resources. Secondly, despite the insufficient availability of energy, there appears to be a problem of energy wastage which is attributed to the lack of energy efficiency measures in the system. This is attributed to the failure on the part of the national government to educate the citizens on the importance of energy efficiency and conservation. Thirdly, Nigeria has a monolithic economy which is

[62] Manufacturers Association of Nigeria, Half-Yearly Economic Review 1996-1999. MAN, Obafemi Awolowo Way, Ikeja, Lagos, Nigeria. https://www.manufacturersnigeria.org/EconomicReview accessed 25 January 2022.
[63] Sam Amadi, 'Improving Electricity Access through Policy Reform: A Theoretical Statement on Legal Reform in Nigeria's Power Sector' in Yinka Omorogbe and Ada Ordor (eds) *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 348.
[64] ibid 348.
[65] Olabisi Aina and A.I Odebiyi, 'Domestic Energy Crisis in Nigeria: Impact on Women and Family Welfare' (1998) No. 26 African Economic History 1-14.

almost 90 per cent oil and gas dependent. As discussed under section 2.2 above, over-dependence on fossil fuel causes high demand/over-consumption, thereby resulting in one of the dimensions to energy crises. The next section will undertake an analysis of the effects of the energy crisis in Nigeria from three perspectives, namely: (1) economic; (2) social; and (3) environmental. This is done in order to find where and how the energy justice concept could be used as a strategic tool to address the country's energy challenges.

2.3.1 Economic Perspectives

The sufficient availability of energy is often viewed as a catalyst to economic development because it can boost infrastructural developments, such as building roads, railways, aviation, agricultural, and oil and gas sectors.[66] These infrastructures tend to increase domestic earnings and strengthen the nation's foreign exchange reserves.[67] However, where there is energy deficiency, as is the case in Nigeria, it becomes impossible to provide such infrastructures. This implies that where there is insufficient energy, different economic sectors of the nation are likely to struggle.[68]

As has been established in this research, energy shortages are known to be one of the dimensions to energy crises that are likely to have a ripple effect on different economic sectors, such as manufacturing, agriculture, and education amongst others. This is evidenced by the fact that sufficient availability of energy often fuels productive activities in an economy including agriculture, commerce, manufacturing, and industry amongst others.[69] The reality is that just as the energy deficiency problems can reduce per capita income and GDP, stalls income distribution, and reduces the labour force and job opportunities, its

[66] Ikechukwu Diugwu, Musa Mohammed and Dorothy Baba 'Towards Effective Infrastructure Development in Nigeria: Theoretical Considerations from a Project Management' (2015) 5 American Journal of Industrial and Business Management 172-180 **DOI:** 10.4236/ajibm.2015.54019 accessed 20 January 2022.
[67] Mbalisi and Offor (n 17) 27.
[68] ibid 28.
[69] Oyedepo (n 37) 17.

availability could ensure increased productivity, thereby contributing to higher GDP with the capacity to boost capital and resources.[70]

Additionally, from a business point of view, insufficient availability of energy causes Small and Medium-scale Enterprises (SMEs) to incur an extremely high overhead cost to maintain their expensive fossil fuel-powered emergency generators.[71] SMEs play an important role in boosting any nation's economy.[72] This is evidenced by a study conducted by the Federal Office of Statistics showing that over 97% of all businesses in Nigeria employ less than 100 employees.[73] Therefore, it suffices to say that about 97% of all businesses in Nigeria are SMEs.[74] This means that with the unstable energy supply, the operations of SMEs and other businesses will continue to face major challenges as a result of the energy shortages. Consequently, this makes it difficult for local businesses to thrive due largely to low productivity, poor quality output, and increased production and overhead costs.

There remain various ways through which shortages in energy supply could affect different sectors of a nation's economy. The shortage of energy supply can make a sector, such as manufacturing redundant.[75] The manufacturing sector is arguably one of the backbones of any nation's economy with the ability to utilise its capacity fully and efficiently.[76] However, challenges arising as a result of unstable energy supply, thus leading to deficiency are likely

[70] Maansi Verma 'Achieving Redistributive Energy Justice: A Critical Analysis of Energy Policies of India' in Usha Tandon, (eds) *Energy Law and Policy* (Oxford University Press 2018) 379.
[71] Mbalisi and Offor (n 17) 28.
[72] Dili Ojukwu, 'Achieving Sustainable Growth through the Adoption of Integrated Business and Information Solutions: A Case Study of Nigeria Small and Medium Sized Enterprises' (2006) 6 (1) Journal of Information Technology Impact pp. 47-60, 48.
[73] ibid.
[74] ibid.
[75] Mbalisi and Offor (n 17) 28.
[76] Nwogwugwu (n 11) 234.

to result in low output in the sector. In Nigeria, the effect of the energy crisis continues to put the manufacturing sector under severe strain due to the high costs of production.[77]

Beyond the manufacturing sector, there are instances where energy challenges have affected the educational sector in Nigeria. This is seen as a major impediment to the promotion of rural education schemes. For instance, lack of adequate electricity is a challenge to the provision of modern educational systems in many developing countries such as Nigeria. This is because there is a strong nexus between energy and the educational attainment of children.[78] It is important to note that the provision of modern energy and its services can potentially improve the availability and quality of educational systems and infrastructures. This, in turn, could lead to the growth of a nation's economy.

The availability of sufficient energy could also contribute to the growth of the agricultural sector by way helping to eradicate poverty and hunger through increased agricultural production in the sector.[79] In reality, countries that see the agricultural sector as the major driver of their economy could be exposed to challenges of increased productive output due to energy shortages. The point is that energy challenges pose a significant impediment to the economic prospects of any country even for a country, that relies heavily on agricultural production to boost economic growth.

For Nigeria, there are indications that the energy crisis has had a significant effect on household food consumption patterns and basic health, particularly among families living in rural areas. This challenge is evidenced in terms of changes in cooking habits, and a reduction in the number of cooked meals and types of food cooked.[80] Additionally,

[77] Money Management Series (December 22, 2014) See Nigeria as non-oil Country by Okonjo-Iweala https://mmsplusng.com/blog/see-nigeria-as-non-oil-country-okonjo-iweala/ accessed January 2022.
[78] Kaime and Glicksman (n 60) 1425.
[79] ibid.
[80] Aina and Odebiyi (n 65) 10.

insufficient energy can lead to the incapacity of people to boil water before drinking, and not sterilizing children's feeding bottles by boiling them.[81] It could be argued that families in rural areas usually engage in this practice due to either unavailability or insufficient availability of energy supply, which is supposed to assist them to meet prevention measures of health challenges and having properly cooked food.

A review of the Nigerian economy by Price Waters Cooper (PwC) in 2018, revealed that despite the economic slowdown in the country, there still exists significant potential for sustainable growth.[82] The PWC report states that there exists a sizeable non-oil economy, driven by other services and the agriculture sector which needs to become revenue and export-generating for the government.[83] However, to be free from the current situation, Nigeria needs to take reasonable steps towards building internal capabilities that will enable and support the economy. This requires investment in the energy sector, perhaps in the form of practical diversification of energy options in order to increase availability for the realization of economic goals.

2.3.2 Social Perspectives

Another perspective through which the effects of the energy crisis have been experienced is from the social aspect. This reveals the importance of energy and its use for the provision of basic social amenities such as shelter, quality healthcare, potable water, safety and security, and quality education amongst others. The use of energy to provide these basic amenities is a practical example of how socio-economic rights can be promoted and protected. Therefore, it suffices to say that sufficient availability of energy promotes non-materialistic social values, such as respect for the human person and dignity, social justice, equity, tolerance, respect for

[81] ibid 10.
[82] Nigeria's Energy Crisis Hindering Economic Growth *Leadership News* (June 24, 2018) < https://leadership.ng/2018/06/24/nigerias-energy-crisis-hindering-economic-growth/> accessed 20 January 2022.
[83] ibid.

basic rights and needs of others, freedom of expression and participation, commitment to purpose and meaning in human existence, fairness, loyalty and commitment to human, personal and societal ideals, tolerance and acceptance of individual differences.[84] In addition, energy availability can provoke change in the structure and ideology of any society.[85] Therefore, where there are shortages of energy, social values, as well as the standard of living in such a society are negatively affected.

The nexus between sufficient availability of energy and social amenities is seen in the relationship between energy consumption and the comfort of human life.[86] This implies that the amount of energy available for consumption often determines the quality of the standard of living.[87] Evidently, one of the reasons for the poor standard of living in many developing countries, particularly in the SSA region is the lack of energy access from the reach of the majority of the population, which is what they need to improve their standard of living.[88] Energy access remains a fundamental tool for the provision of basic social amenities in any society. Thus, where there is poor energy access, the effect is often accompanied by health risks, low socio-economic status, poor research as a result of the slow pace of knowledge production, low purchasing power, and general poverty.

It is pertinent to note that the right to energy access as a basic social good has a place within the human rights framework.[89] Bradbrook, Gardam and Cormier opined that this argument is premised on the conception that access to energy is already implicit in a range of existing human rights obligations, particularly, those in the field of socio-economic rights.[90]

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[84] Mbalisi and Offor (n 17) 28.
[85] E.O Okeem, 'Social Structure, Ideology and Adult Education' in F.C Okafor, E.O Okeem and J.I Mereni (eds) *Foundations of Adult Education* (Pacific Publishers 1987) 49-54.
[86] W.P Cunningham and B.W Saigo, Environmental Science: A Global Concern (6th edn, McGraw Hill 2001)
[87] Mbalisi and Offor (n 17) 28.
[88] ibid 29.
[89] Adrian Bradbrook, Judith Gardam and Monique Cormier, "A Human Dimension to the Energy Debate: Access to Modern Energy Services" (2008) 26 (4) Journal of Energy and Natural Resources Law, 526-552, 539.
[90] ibid 539.

Therefore, developing a regime that strongly recognises the right to energy access as an essential part of human rights, and in furtherance of socio-economic rights is a positive step towards addressing the social effects of energy crises. The promotion of energy access rights could, therefore, culminate in the realisation of Nigeria's socio-economic goals through the provision of basic public services such as transportation, clean water, and quality health care, etc.

2.3.3 Environmental Perspectives

Energy resources are part of environmental resources that are explored, exploited, transformed and utilised for the satisfaction of human needs.[91] The different stages of energy resource development have negative effects on the environment and this is where the environmental effects are focused. Environmental challenges affect the quality of human life, bearing in mind that the quality of human life is inextricably linked to the quality of the environment. This observation explains the relationship between energy systems on the one hand and the environment on the other hand.[92]

We note that in many energy-resource rich countries, especially the developing ones, their national governments tend to engage in massive exploration and production of their proven or probable energy resources for economic growth. This creates false ideas and hopes that with more production, the shortages would disappear. Regrettably, this approach tends to increase the level of injustice towards host communities by way of increased devastation of their environment.[93] For instance, the majority of Nigeria's proven oil and gas resources are

[91] Mbalisi and Offor (n 17) 31.
[92] Thomas B. Johansson 'The Imperatives of Energy for Sustainable Development' in Adrian Bradbrook *et al.,* (eds) *The Law of Energy for Sustainable Development* (Cambridge University Press 2005) 46.
[93] Olubayo Oluduro, *Oil Exploitation and Human Rights Violations in Nigeria's Oil Producing Communities* (2014 Intersentia)

located in the NDR of the country.[94] Since the discovery of oil in the region, there has been serious environmental degradation that is associated with the exploration and production of resources by multinational corporations operating in the region.[95] This raises the concern of how to reconcile the exploration and production of resources without depleting or destroying the environment.[96] Regrettably, this has resulted in tension between militant groups in the region, civil societies and NGOs and the national government on the one hand, and multinational corporations on the other hand.[97] The implication of the tension translates into major disruptions of production as different militant groups tend to register their grievances through the destruction of energy infrastructures in the region. The recent destruction of facilities belonging to Nigeria Agip Oil Company (NAOC) by a militant group called Bayen-Men is a testament to the environmental effects of energy crises arising from the quest to resolve shortages through more exploitation and production.[98] The militant group released a statement that the destruction of the facility was in response to the injustice against the people in the host community.[99]

The point is that the pressure to address the energy deficiency problem – i.e, to meet demands causes the FGN to pursue more exploitation and production of oil and gas resources regardless of the negative impact on the environment. This would lead to the granting of more permits and licences to multinational corporations to conduct more exploitation and production in oil-producing communities whose environment is already devastated as a result

[94] Hassan Tai Ejibunu 'Nigeria's Niger Delta Crisis: Root Causes of Peacelessness' (EPU Research Papers) file:///C:/Users/ga18480/Downloads/datenpdf.com_28-nigerias-niger-delta-crisis-root-causes-of-peacelessness-.pdf accessed 22 March 2022.
[95] Bukola Faturoti, Godswill Agbaitoro and Obinna Onya 'Environment Protection in the Nigerian Oil and Gas Industry and *Jonah Gbemre v Shell PDC Nigeria Limited*: Let Plunder Continue?' (2019) 27 (2) African Journal of International and Comparative Law 225-245.
[96] ibid 227.
[97] Ruth Krause, 'Oil Spills Keep Devastating Niger Delta' *DW* (20 March 2015), <http://www.dw.com/en/oil-spills-keep-devastating-niger-delta/a-18327732> accessed 18 January 2022.
[98] Vanguard Newspaper, Militant Blew up Agip Facility over Alleged Neglect, Disregard to 'Agreement' https://www.vanguardngr.com/2021/11/militants-blow-up-agip-facility-over-alleged-neglect-disregard-to-agreement/ accessed 3 March 2022.
[99] ibid.

of the day-to-day activities of the multinational corporations operating in the region. In reality, the environmental issues arising from the exploitation and production of oil and gas resources constitute aspects of the environmental impacts of Nigeria's energy crisis.

In sum, the effects of the energy crisis as discussed above show the importance of energy to the Nigerian economy. The present realities in Nigeria – as per the effects of the energy crisis discussed from the three perspectives remain to be seen as an impediment to the country's socio-economic development. This has led to the introduction of some national policy measures by the FGN to address the energy challenges. The next section looks at some of the measures set out to address the economic, social and environmental effects of the energy crisis.

2.4 Energy Policy Interventions Aimed at Resolving the Energy Crisis in Nigeria

This section examines policy measures introduced by the FGN to address the economic, social and environmental effects of the energy crisis. The objective is to trace the historical attempts to address the challenges in Nigeria's energy sector.

Just like many African countries, Nigeria is still faced with the difficulty of meeting its ever-increasing population's energy demand.[100] This challenge has prompted different governmental reforms and policies to address the challenges in the energy sector. Regrettably, the reforms have been ineffective over the years as the power sector has failed to provide electricity to over 40% of Nigerians in the last 10 years, leaving over 80 million of its citizens without access to electricity.[101] Even after five years of privatizing the electricity sector, the country's electricity generation, transmission, and distribution remain erratic.[102]

[100] Olusola Bamisile and others, 'An Approach for Sustainable Energy Planning Towards 100 % Electrification of Nigeria by 2030' (2020) 197 Energy 117172.
[101] Olusola Bamisile and others, 'Development and Assessment of Renewable Energy-Integrated Multigeneration System for Rural Communities in Nigeria: Case Study' (2020) 146 J. Energy Eng. 1–10.
[102] Okafor (n 42)

Since the year 2000, Nigeria has engaged in endless reforms of its energy sector through various policy measures. The reforms have been focused on increasing the availability and reliability of energy supply across the country.[103] This approach led to several attempts by the FGN through the introduction of different policy measures as part of mitigating strategies toward the energy crisis. It is true to a large extent that the policy measures introduced are linked to the current framework applicable in the sector and have consistently failed to yield positive results. However, there seems to be a gap, as the policies remain largely theoretical with no actual strategy on how they are to be accomplished. Further, upon a deeper look, it is clear that the policies have failed to address some of the existing challenges in the Nigerian energy sector as the challenges persist. Perhaps, this is due to a lack of understanding of specific assessments of the challenges characterised by the energy crisis.

The FGN's policy measures aimed at addressing the energy crisis are discussed under three headings, (1) energy policy measures adopted to address the economic effects; (2) energy policy measures to address social effects; (3) energy policy measures to address environmental effects.

2.4.1 Policy Measures for Economic Effects

Generally, the principal responsibility of formulating and implementing energy policy lies with the national government. This implies that the government is responsible for ensuring the availability of energy as well as the security of its supply as part of its obligation to the citizenry. In Nigeria, there has been the development of national energy policy papers by the FGN as part of measures to address the effects of the energy crisis. The first is the National Energy Policy (NEP) designed by the Energy Commission of Nigeria (ECN) in 2003, and approved by the Federal Executive Council (FEC) in the same year, but launched in 2005. This was later reviewed in 2013 and subsequently in 2018. The second is the National

[103] Amadi (n 63) 344.

Renewable Energy and Energy Efficiency Policy (NREEEP) introduced by the Ministry of Power in 2015.

Historically, Nigeria's first attempt at developing a national energy policy to address the energy challenges was in 1978 at the Energy Policy Conference, where the former military Head of State, General Olusegun Obasanjo stated in his foreword to the proceedings that "energy, in all its ramifications, has finally emerged in our consciousness as a crucial element in this unavoidable industrialisation and socio-economic development process".[104] Following that conference, in 1984, a Draft Energy Policy Guideline which led to the first NEP was formulated by the Federal Ministry of Science and Technology with limited scope and depth in terms of the content.[105] In 1993, the Energy Commission of Nigeria (ECN) which was established by the FGN in 1988 pursuant to the Energy Commission of Nigeria Act,[106] made some changes to improve the NEP and produced a new draft in the same year.

In 2003, 2013 and more recently in 2018 the FGN through the ECN consecutively reviewed the NEP with a primary objective that is geared towards increasing the availability of energy supply in the country. Overall, this document served as a road map to a better national energy future in Nigeria.[107] The ECN is responsible for the planning, monitoring, and evaluation of policy implementation and diversification of energy resources through the development of new and alternative energy sources in the country.[108] Further, it determines the energy needs

[104] Michael Sunday Agba, 'Energy Poverty and Leadership Question in Nigeria: An Overview and Implication for the Future' (2011) 3 (2) Journal of Public Administration and Policy Research 48-51.
[105] Maren Borok, Agontu Agandu and Mangai Morgan, 'Energy Security in Nigeria: Challenges and Way Forward' (2013) 2 (11) International Journal of Engineering Science Invention 1-6, 2.
[106] Act No 62 of 1979, as amended by Act 32 of 1988 and Act No 19 of 1989.
[107] Oluseyi Ajayi and Oluwatoyin Ajayi, 'Nigeria's Energy Policy: Inferences, Analysis and Legal Ethics Toward RE Development' (2013) 60 Energy Policy 61-67, 62.
[108] In an interview with the Director General of the Energy Commission of Nigeria, Professor Abubakar S. Sambo on 17 March 2010, the DG stated that the 2003 National Energy Policy provides the policy direction of the nation in respect of electricity as well as other energy sectors of the economy and that the ECN has also developed the National Energy Master Plan 2007, which it seeks to pass into law as the Energy Law of Nigeria.

and mix of the nation,[109] with the aim to ensure that there is the security of supply. In carrying out this responsibility, it can be seen that based on policy implementation, the focus was on the electrification of urban areas with less concentration on rural areas that equally need energy for economic development. The ECN published the NEP with the following objectives:

- To ensure the development of the nation's energy resources, with diversified energy resources option, for the achievement of national energy security and an efficient energy delivery system with an optimal energy resource mix.
- To guarantee increased contribution of energy productive activities to national income.
- To guarantee adequate, reliable and sustainable supply of energy at appropriate costs and in an environmentally friendly manner, to the various sectors of the economy, for national development.
- To guarantee an efficient and cost-effective consumption pattern of energy resources.
- To accelerate the process of acquisition and diffusion of technology and managerial expertise in the energy sector.
- To promote indigenous participation in energy sector industries, for stability and self-reliance.
- To successfully use the nation's abundant energy resources to promote international co-operation.
- To promote research and development in, and adoption of, sustainable low carbon and clean energy technologies to mitigate environmental pollution and climate change.

[109] Balkisu Saidu, 'Committing to Legal and Regulatory Reform: An Analysis of the Legal and Regulatory Framework of the Electricity Supply Industry in Nigeria' (2011) 29 (3) J. Energy & Nat. Resources L. 355, 362.

- To promote gender sensitivity and special attention to rural energy needs.
- To promote efficiency, conservation and carbon management best practices in the nation's energy supply chain.
- To ensure comprehensive and up-to-date availability of energy sector data and information.
- To ensure effective coordination of national energy planning, programmes and policy implementation [110]

An examination of the NEP shows that it is designed to cater for the energy sector in general. However, the policy framework for the power sector in particular, as a component of the energy mix is stated in the National Electric Power Policy (NEPP). The main objective of NEPP is to establish an effective and efficient regulatory regime for the electricity sector. In this regard, the FGN through the NEPP aims to, amongst other things, attract private investment to the power sector; develop a transparent and effective regulatory framework for the sector; divest its interest in the state-owned entities; introduce restructuring and privatisation in the sector, and promote competition to meet growing demand through the liberalisation of the electricity market.[111] While some of these aims were met by the FGN, the system, however, largely remains dominated by state control and this undoubtedly made it difficult for the country to realise its full energy potential.

As regards NREEEP, its main focus is to meet electric power supply targets sustainably. In Nigeria, the main renewable energy sources focused on are hydropower, solar (PV and thermal) and wind. There is mention of other sources, such as geothermal, wave and tidal

[110] Energy Commission of Nigeria, National Energy Policy 2018 p. 8 < https://www.energy.gov.ng/Energy_Policies_Plan/National%20Energy%20Policy.pdf> accessed 28 February 2022.

[111] Roadmap for Power Sector Reform, (2010), p.15, http://anedng.com/wp-content/uploads/2016/03/Roadmap-for-Power-Sector-Reform-Full-Version.pdf accessed 28 February 2022.

energy, but in reality, these are mentioned for convenience. The objectives of the NREEEP are summarised below;

- Development of more (100 kW – 500 kW) and mini (1500 kW – 1 MW) hydropower schemes in an environmentally sustainable and socially acceptable manner, with private sector participation. Additional focus was placed on accelerating the completion of Mambila, Zungeru and Gurara large (100 MW) hydro projects.
- 10 % minimum contribution of total electricity generation from hydropower (This will involve applying a mix of various scale installations in the power generation).
- Use of waste wood (biomass) as an electricity generation source in the mix and other non-wood biomass for alternative off-grid, power sources.
- Solar PV use as decentralised options for off-grid, remote areas and standalone power applications (1 – 10kW) like communications stations and security cameras.
- Finance renewable energy development through; budget allocation, privatisation of Power Holding Company of Nigeria, fiscal incentives like tax cuts, across to capital market for private investors in renewable and participation of international donors and NGOs
- Implementing energy efficiency measures such as demand-side management, promotion of energy-saving technologies and tariff provisions for electricity distribution companies that achieve high efficiencies within their customer base.[112]

Drawing on the development of the NEP, the first policy measure introduced in the year 2003 resulted in the power sector reforms that largely culminated in privatisation and liberalisation of the energy sector. This approach was informed by desperate attempts to key into the wave

[112] Energy Commission of Nigeria, National Renewable Energy and Energy Efficiency Policy <http://www.energy.gov.ng/Energy_Policies_Plan/natonal_renewable_energy_and_energy_efficiency_policy.pdf> accessed on 20 February 2022.

of power sector reforms sweeping across the SSA region in the face of the energy crisis. This measure was adopted in the early 2000s by many countries in the SSA region as a way to address the economic effects of the energy crisis in the region.

Over the last three decades, reforms in the power sector have been implemented to varying degrees across countries in Africa.[113] The reform model involves the introduction of corporatisation, commercialisation, restructuring, privatisation and liberalisation, and competition.[114] While the implementation of the reform was driven through the privatisation and liberalisation mechanism, it was however based on the need to attract the much-desired foreign investment, and pressure from multilateral agencies and donors, and a desire to curb losses emanating from financial and technical mismanagement.[115]

Just like other African countries in the SSA, Nigeria also subscribed to the power sector reform agenda. The decision was based on recommendations made by international financial institutions which were considered as a strategy to access private sector financing for the energy sector.[116] For instance, adopting and implementing the reform agenda was a pre-condition for institutions like the World Bank to lend money to African governments.[117] Thus, the reforms were purely based on the regulatory regime with the enactment of the Electric Power Sector Reform Act 2005 (EPSRA). The EPSRA repealed the Nigerian Electric Power Authority and Electricity Act,[118] and created a new regulator - the Nigerian Electricity Regulatory Commission as the main regulatory body. Despite the nomenclature shift from the Nigerian Electric Power Authority (NEPA) to what is now the Power Holding

[113] Njeri Wamukonya, 'Power Sector Reforms in Sub-Saharan Africa: Some Lessons' (2005) Vol. 40 (50) Economic and Political Weekly 5302-5308.
[114] ibid.
[115] ibid 5303.
[116] ibid 5302.
[117] World Bank Policy Research Report, 'Adjustment in Africa: Reforms, Results, and the Road Ahead' (Oxford University Press 1994) https://documents1.worldbank.org/curated/en/219981468192845881/pdf/multi-page.pdf accessed 10 February 2022.
[118] See National Electric Power Authority (NEPA) Act, Cap No. 33, Laws of the Federation (LFN) 2004. Electric Power Sector Reform Act 2005

Company of Nigeria (PHCN), energy challenges persist. The demand for better power and its importance to national economic growth and development contributed to the reasons for undertaking the reforms in the sector.[119] However, the energy sector has not been able to deliver optimally despite the reforms.

As mentioned earlier, the power sector reforms in Nigeria were mainly pursued through the privatisation and liberalisation mechanism. The idea behind this approach is connected to the theory of capitalism which is vital to establishing the link between the energy sector and competition.[120] Based on the idea of capitalism, the FGN had anticipated that through privatisation and liberalisation, foreign direct capital, technology and management skill will be imported into the energy sector. However, this approach has proven to be ineffective as the country is still faced with an energy crisis.

The privatisation and liberalisation mechanism was one of the strategies employed by the FGN to transform government-owned monopolistic enterprises to standard models characterised by the unbundling of generation, transmission, and distribution of power.[121] Here, the FGN made effort to decentralise the sector by way of allowing the private sector to be involved in the process of generating, transmitting and distributing power. This was done to create an opportunity for the sector to be dominated by private participants, together with the intention of presenting it as being organised around competition in an independently regulated environment.[122] Furthermore, the privatisation and liberalisation mechanism was adopted to attract private capital into the energy sector. However, it is observed that this twin

[119] Oke (n 45) 69.
[120] Adebayo Adaralegbe, "Are the Energy Laws of Nigeria Sufficient to Promote and Preserve Competition?" (2003) 9 International Energy Law and Taxation Review 251-257.
[121] Amadi (n 63) 350.
[122] ibid.

mechanism has not produced the desired result as there are currently no profitable returns on investments in the sector.[123]

Regrettably, one of the major problems that hindered the success of the twin strategy in Nigeria is the over-centralisation of the regulatory and governance framework in the sector. An over-centralised framework leads to a lack of confidence from private-sector investors because it could fail to give them the freedom to make decisions that should affect the sector. This remains a challenge arising from the policy framework in the energy sector. This is because the over-centralisation of the regulatory and governance framework ultimately creates an environment of regulatory uncertainty. This is due largely to the nature of unstable control and regulatory uncertainty manifested by the FGN which in turn causes lack of confidence on the part of private investors in the sector.[124] Another weakness of the privatisation and liberalisation mechanism is the existence of multiple and sometimes irreconcilable interests of the legislators who establish a largely unviable framework within which the regulator must operate.[125] This tends to hinder the success of the policy measure aimed at addressing the energy crisis.

2.4.2 Policy Measures for Social Effects

A key performance indicator for energy policy is its ability to affect socio-economic growth and development in a country.[126] The policy measures introduced by the FGN to address the social effects of the energy crisis have for the most part focused on increasing energy access to secure socio-economic development. This approach supported the idea that energy access

[123] ibid.
[124] Oke (n 45)
[125] Amadi (n 63) 364.
[126] Musbaudeen Bamgbopa and others, 'A Review of Nigerian Energy Policy Implementation and Impact' (2019) < https://www.researchgate.net/publication/332118886_A_Review_of_Nigerian_energy_Policy_Implementation_and_Impact> accessed 20 February 2022.

creates an enabling environment and opens up opportunities to sustain projects that provide basic necessities for citizens.

It is important to note at this juncture that socio-economic growth and development are mainly connected with the provision of energy access which is in turn dictated by the national energy policy.[127] This implies that poor energy access hinders the socio-economic growth and development of any state. Importantly, the provision of energy access indirectly also leads to improvements to the provision of basic social amenities, such as the availability of good roads, quality health care delivery system, quality educational system, potable water, strong safety and security architecture, etc. This is because human wellbeing, poverty reduction, social inclusion, and economic improvement are not achievable without good and reliable access to energy and its services.[128] Thus, developing an effective energy policy framework that takes into account the social effects of the energy crisis is important as energy access and its services are required to improve the standard of living.

It is clear from the above that there remains a continuous effort by the FGN to increase energy access, but sadly the results are minimal. According to Kennedy-Darling and others, on the NEP 2003, less than 40 % of Nigeria's population is connected to the electricity grid.[129] They further revealed that of the less than 40 % of the population that is connected to the national electricity grid system is short of power supply more than 60 % of the time.[130] Thus, while there are clear government goals and policies in place to increase energy access, these goals are not being achieved on the ground. In terms of achieving the electricity supply targets as set out in the NEP, the focus has been on the completion of several never-ending

[127] ibid.
[128] Jenny Sin-hang Ngai, 'Energy as a Human Right in Armed Conflict: A Question of Universal Need, Survival, and Human Dignity' (2012) 37 BROOKLYN J. INT'L L. 59; See also Kamil Kaygusuz, 'Energy Services and Energy Poverty for Sustainable Rural Development' (2011) 15 RENEWABLE & SUSTAINABLE ENERGY REV. 936.
[129] Julia Kennedy-Darling and others (n 58)
[130] ibid.

'on-going' power projects, and expansion and security of the transmission network, while addressing energy inefficiencies. The truth is that there are no practical policy measures on energy access to boost the socio-economic status of citizens in Nigeria. At best, there are statements contained in various policy documents and the national energy master plan that seeks to increase energy access with no clear plan for implementation.

2.4.3 Policy Measures for the Environmental Effects

Policy measures from an environmental perspective indeed take into account the principle of sustainable development whilst also attempting to meet demands. The policy measures seek to protect the environment during production, processing, transportation, and utilization of energy. In principle, this is based on addressing environmental problems related to energy production, distribution, and consumption which is mainly in the form of pollution.[131]

The environmental policy measures call for the development of environmental education to educate and re-orientate citizens on the implications of their activities directed towards the protection, improvement, management, restoration, and conservation of Nigeria's environment.[132] This approach is in addition to protection from the operations of multinational corporations (MNCs) in Nigeria's extractive sector. This will take the form of implementing environmental standards for all energy processes, together with the use of environmental regulatory bodies to monitor compliance with standards or environmental protection targets in the energy sector.

As earlier stated, one of the effects of the energy crisis on the environment is that it encourages more exploitation and production of energy resources without consideration of the impacts on human rights and the environment. Additionally, the effect of the energy crisis

[131] Energy Commission of Nigeria, National Energy Master Plan available at < http://www.energy.gov.ng/Energy_Policies_Plan/Draft%20(Reviewed)%20NEMP%20-%202014.pdf> accessed 21 February 2022.
[132] Mbalisi and Offor (n 17) 21; See also ECN, National Energy Policy 2018 (n 110)

on the environment can be traced to the negative impacts resulting from the activities involved in the production and consumption of energy resources and their by-products.[133] These activities which are driven by one form of energy or another include agriculture - that is farming, fishing, hunting, and fruit gathering; industrial operations – that is manufacturing, mining, oil exploration and refining, quarrying, and processing; construction – that is dams, roads, bridges, houses; trading – that is the distribution of goods and services; transportation – that is the movement of people, goods and services; and consumerism – that is final utilisation of the products made from environmental resources.

The activities mentioned above which require the use of different forms of energy lead to various environmental problems, such as pollution, climate change, biodiversity loss, improper waste disposal, deforestation, ozone layer depletion, global warming, desertification, and erosion amongst others. These problems may justify the need to introduce policies that are ecocentric and address environmental effects arising from energy activities. It may also justify why the introduction of policies that seek to promote environmental education is important. According to the Environmental Education and Training Partnership (EETAP), environmental education as a global policy emerged out of a reaction to the pressure of the 1960s by the leaders in both outdoor and conservation education.[134] This was triggered by increased public awareness of the problems of air, water, noise and landscape pollution, and excess energy demand.[135] It requires learning processes that increase people's knowledge and awareness about the environment and its associated challenges, develop the necessary skills and expertise to address the challenges, and foster attitudes, motivations, and

[133] ibid 35.
[134] Festus Mbalisi, Effectiveness of Environmental Education in the Development of Responsible Behaviours Among Adult Learners in Rivers State (Unpublished Doctoral Dissertation, University of Port Harcourt, Nigeria 2010)
[135] Mbalisi and Offor (n 17) 32.

commitments to make informed decisions and take responsible actions towards the environment.[136]

The nature of the policy from an environmental perspective is meant to empower people to understand how their actions and that of the national government and MNCs degrade their environment.[137] This happens as a result of the government's quest to address the energy challenges mainly through the exploitation and production of more energy resources. This, in turn, motivates people to reject and resist activities that degrade the environment notwithstanding the good intentions to increase energy supply. Hence, they become committed to championing any course directed towards the protection, conservation, and sustainability of environmental resources.[138]

In sum, one could argue that Nigeria should not be experiencing an energy crisis because there are national policy measures that are aimed at addressing the economic, social and environmental effects of the crisis in the energy sector. However, this appears not to be the case due to shortcomings in the system. The reason for the shortcomings is largely attributed to the attitude of the FGN of embarking on the implementation of policy measures and reforms without proper consideration of the realities of the energy sector. The continuous effects of the energy crisis despite the introduction of various policy measures may also be attributed to the failure to understand existing justice issues manifesting in the system. For instance, it is not clear why a country with four national oil refineries relies heavily on the importation of energy to power its economy. This is due to issues relating to corruption, budget diversion, lack of a master plan or inconsistency as a result of political leadership change to achieving the energy policy targets. The inconsistent political will and other socio-

[136] United States Federal Register Fiscal Year 1997 Environmental Education Grants Programme: Solicitation Notice 1996, 65106-65117 <https://www.govinfo.gov/content/pkg/FR-1996-12-10/html/96-31358.htm> accessed 20 February 2022.
[137] Mbalisi and Offor (n 17) 33.
[138] ibid.

political issues such as low motivation on the part of the government, lack of economic incentives, multiple taxations, unfavourable customs and the excise duty affecting the importation of renewable energy technologies contribute to the energy crisis. There are also issues relating to objectives that are usually verbose and ill-defined. These injustice-related issues continue to affect any real chance of achieving energy security in Nigeria.

2.5 Energy Security and the Energy Crisis in Nigeria

This section explores the interlinkages between energy security and the energy crisis and further examines the role that energy security could play in resolving the crisis in Nigeria.

Definitions of energy security vary depending on the perspective through which it is being discussed. For example, definitions of energy security could be provided from the view of trade and investment, politics, consumption/transmission production efficiency, and environmental issues. It could also be considered from a legal perspective, but with a focus on oil as it has traditionally been the case,[139] especially from the position of an energy producer nation or a consumer nation. Energy security is the foundational pillar upon which every advanced world economy is built or developed.[140] The concept is defined as a 'condition in which the state and majority of all of its citizens and businesses have access to available and sufficient energy supply at reasonable prices for the foreseeable future, free from serious risk of disruption of service'.[141] According to the United Kingdom (UK) Department for Business, Energy and Industrial Strategy (BEIS), the term energy security was described as follows:

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[139] John Paterson, 'Reconceptualising Energy Security from a Legal Perspective in the Context of Climate Change' in Tina Hunter, Ignacio Herrera, Penelope Crossley and Gloria Alvarez (eds), *Routledge Handbook of Energy Law* (2020) 58-73.

[140] ibid 64.

[141] Barry Barton, Catherine Redgwell, Anita Ronne, and Donald N Zillman, 'Introduction', in B Barton, C Redgwell, A Ronne and D N Zillman (eds), *Energy Security: Managing Risk in a Dynamic Legal and Regulatory Environment* (Oxford University Press 2004) 5. See also Chukwudi Okeke, Edwin Izueke and F.I Nzekwe, 'Energy Security and Sustainable Development in Nigeria' (2014) 4 (3) Arabian Journal of Business and Management Review 65.

> [t]here is no perfect definition of energy security. When discussing energy security, the Government is primarily concerned about ensuring that consumers have access to the energy services they need (physical security) at prices that avoid excessive volatility (price security). Energy security must be delivered alongside the achievement of our legally binding targets on carbon emissions and renewable energy.[142]

The definitions above capture the present energy situation in Nigeria where the lack of energy security continues to affect sectoral development at various levels. In the context of this research, energy security is a situation where there is sufficient availability of energy for both industrial and domestic consumers, the absence of which translates into energy insecurity and perhaps becomes an energy crisis. However, in the quest to achieve energy security in the modern era, it is pivotal to develop strategies that are also attuned to the principle of sustainable development, which is undoubtedly a key aspect of the energy justice concept. This implies that strategies put in place to drive the realisation of energy security in Nigeria should consider the principle of sustainable development. This conception implies that sustainability should be at the heart of strategies for developing energy processes and technologies, and their conversion to useful forms to provide services.[143]

Based on Nigeria's colonial history, the British Labour Government ideology of a centrally regulated economy and state control of public enterprises was adopted as a model for the nation.[144] Due to underdevelopment challenges, the British philosophy blended well with the

[142] The Department of Business, Energy and Industrial Strategy: Policy Paper on British Energy Security Strategy (November 2012) https://www.gov.uk/government/publications/energy-security-strategy accessed 20 February 2022.
[143] GP Hammond, 'Alternative Energy Strategies for the United Kingdom Revisited; Market Competition and Sustainability' (1998) 59 Technology Forecasting and Social Change 131-151.
[144] Adaralegbe (n 120) 251.

social equity that the developing state of Nigeria was striving to achieve.[145] Consequently, it became the responsibility of the FGN to introduce policy measures to help achieve energy security.

Although the concept of energy security is not entirely new to the FGN, it has not been pursued with any sense of purpose, determination, and consistency that it deserves.[146] At best, the focus has been on a needless review of the Policy Guidelines for the energy sector. This is evidenced in the 2003 NEP with the goal of achieving a good mix through the development of energy resources in an environmentally friendly manner that would guarantee security and self-sufficiency.[147] The challenge is that energy policies on ensuring security in Nigeria fall short of the principle of sustainable development. The principle which is a key aspect of the energy justice concept involves the development and provision of energy sustainably. This means that energy access be provided for all people now and in the future in more sustainable ways that are not detrimental to the environment[148]

It is noteworthy that the approach to energy security in Nigeria provides at least, in theory, that the development of energy resources should be carried out in an environmentally friendly manner.[149] Just like other oil-producing nations, the threshold for achieving energy security in Nigeria is based on a framework that ensures the availability, affordability and reliability of energy services for the economy.[150]

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[145] ibid 251.
[146] Borok, Agandu and Morgan (n 105) 2.
[147] ECN, National Energy Policy 2018 (n 110)
[148] Noam Lior, 'Energy Resources and Use: The Present Situation and Possible Paths to the Future' (2008) 33 Energy 842-857; Marc A Rosen, 'Energy Efficiency and Sustainable Development' (2002) 17 Int J Global Energy Issues 23-34.
[149] ECN, National Energy Policy 2018 (n 110).
[150] Adeola Adenikinju, Seth Acton and Olayinka Adenikinju, 'Energy Security in Africa Issues, Challenges and Possible Role for Green Energy' in Adeola Adenikinju, Akin Iwayemi and Wumi Iledare, *Green Energy and Energy Security* (National Association of Energy Economics 2012)

Undoubtedly, the impact of the energy crisis in Nigeria is also a manifestation of the challenge of energy insecurity. As earlier mentioned, energy security is concerned with the availability of sufficient energy supply to stimulate industrialisation and commercial activities. The importance of implementing policies that facilitate energy security cannot be overemphasised because of the link between the availability of energy and economic development.[151] Therefore, the development of better energy policies that would establish a strong business climate to promote investment, sustainable development, and technological innovation could increase the energy supply in Nigeria.

In sum, we note that oil-importing countries think of energy security in terms of security of supply, while exporting countries think of energy security in terms of security of demand, relying on revenue to stimulate economic growth.[152] The broader factors that are seen as ensuring energy security, thus, suggest that it could offer a potential way to address challenges such as access, and unaffordability, among others, associated with the energy crisis.

2.6 Energy Security and the Sustainable Development Goals in Nigeria

This section looks at the role that energy security could play in Nigeria's quest to realise the UN SDGs.

In September 2015, the UN General Assembly adopted the SDGs after a highly anticipated event in global development to stimulate action over the next 15 years in areas of critical importance for humanity and the planet.[153] This document which replaced the Millennium Development Goals (MDGs) was based on the outcome of Rio+20, with input from the193

[151] Sanam Haghighi, *Energy Security: The External Legal Relations of European Union with Major Oil and Gas Supplying Countries* (Hart Publishing 2007) 10; Daniel Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World* (Penguin Books 2012) 268.
[152] ibid.
[153] United Nations General Assembly, Transforming Our World: The 2030 Agenda for Sustainable Development, UN Resolution N0. A/RES/70/1, 70/1 www.un.org/ga/search/view_doc.asp?symbol=ARES/70/1& accessed 20 February 2022.

UN member states and an array of non-governmental organisations.[154] The goals are embodied in a document,[155] consisting of 17 goals including 169 targets and indicators.[156] The SDGs are seen as a blueprint to achieve a better and more sustainable future for all.[157] They are designed to address various global challenges that nations of the Earth face, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice.[158]

What does this mean for Nigeria? It reinforces the importance of achieving energy security in order to realise the SDGs. This confirms that energy security and the SDGs are interrelated. Without energy security that is achieved through the implementation of a well-designed energy policy framework, it will be difficult for Nigeria to meet some of the commitments of the SDGs. For Nigeria to be able to provide adequate jobs, food, quality health services, education, housing, clean water, and good sanitation, all of which form key aspects of the SDGs' imperatives, there needs to be sustained availability of energy.[159] Hence, relevant institutions and stakeholders in the Nigerian energy sector would have to re-assess themselves and aim to operate with a heightened level of energy to fulfil the SDGs commitments.

The importance of energy to the realisation of the SDGs cannot be overemphasised as it is central to addressing major economic challenges the world today.[160] However, achieving energy security is best pursued through a policy approach that is driven by justice principles.

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[154] Lakshman Guruswamy, *Global Energy Justice: Law and Policy* (West Academic Publishing 2016) 71.
[155] Transforming Our World: the 2030 Agenda for Sustainable Development A/RES701, <https://sustainabledevelopment.un.org/post2015transformingourworld> accessed 20 February 2022.
[156] The United Nations General Assembly Draft Outcome Document Of the United Nations Summit for the Adoption of the Post-2015 Development Agenda <https://sustainabledevelopment.un.org/post2015/summit> accessed on 20 November 2021.
[157] The United Nations Sustainable Development Goals https://www.un.org/sustainabledevelopment/sustainable-development-goals/ accessed 25 February 2022.
[158] ibid.
[159] Chukwudi Okeke, Edwin Izueke and F.I Nzekwe, 'Energy Security and Sustainable Development in Nigeria' (2014) 4 (3) Arabian Journal of Business and Management Review 64.
[160] Guruswamy (n 154) 23.

Just like other nations, Nigeria's commitment to the SDGs is inextricably linked to its policy on achieving energy security. This implies that the extent to which Nigeria can meet the SDGs by 2030 may depend on the nature of its policies on energy security. The emphasis here is on the need to introduce policies that not only consider the attainment of energy security but also ensure that they are geared towards realising the SDGs.

Although it is clear that without energy, the realisation of the SDGs may likely remain a dream in perpetuity. However, just as one cannot expect to succeed in creating jobs without first solving energy problems, the same applies to realising the SDGs. For example, Goal 3 stipulates that countries are expected to 'ensure healthy lives and promote well-being for people of all ages'.[161] However, the process needed to achieve or realise Goal 3 is an essential part of the SDGs. This in turn requires energy to accomplish. Therefore, one way to realise this is through developing energy policy frameworks through an approach that aligns with efforts to provide citizens with opportunities to live healthy lives.

SDG Goal 4 provides that countries should 'ensure inclusive and equitable quality education and promote lifelong opportunities for all'.[162] This is meant to promote the social aspects of an economy. For quality education to be provided for all, investment is needed in educational scholarships and equipment, teacher training workshops, and school buildings, together with the improvement of water and electricity access in schools. To achieve this, there needs to be a significant availability of energy. This approach will instil confidence in investors (both foreign and local) to invest in critical areas that will transform the educational sector, thereby leading to the realisation of critical aspects of the SDGs.

[161] See Goal 3 of the United Nations Sustainable Development Goals www.un.org/sustainabledevelopment/developmentagenda/ accessed 28 February 2022.
[162] ibid.

Goal 8 urges countries to 'promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all'.[163] In reality, it is difficult for any state faced with energy challenges to meet such a goal as sufficient availability of energy is essential to sustainable economic growth. The point here is that energy policy that is designed to achieve security, bearing in mind social and economic challenges faced by citizens will avail governments of the opportunity to realise major aspects of the SDGs by 2030.

In sum, we note that energy security could potentially help to realise different aspects of the SDGs but needs to be pursued from an energy policy approach that captures different aspects of the SDGs. This implies that the prospects of realising the SDGs in Nigeria would require beneficial specificities in the form of incremental levels of energy security driven by policy approaches that are based on justice principles as a possible solution to energy challenges.

2.7 Conclusion

The chapter sets out to examine the energy crisis, its dimensions, and the economic, social, and environmental effects. It discussed the effects of the energy crisis in the context of Nigeria and highlighted some national policy measures introduced by the FGN to address them. It further considered the linkages between the crisis and energy security with a focus on the need to pursue energy security from the perspective of sustainable development. In this regard, it argued that energy security could be pursued through the principle of sustainable development because of its potential to address not only the economic, social, and environmental effects of the energy crisis but to help realise the SDGs in Nigeria. This in effect, is a confirmation that energy and its services remain a crucial input to solutions for primary development challenges such as - providing adequate food, shelter, clothing, water, sanitation, medical care, schooling, and access to information amongst others.

[163] ibid.

From the analysis in this chapter, it is clear that fossil fuel dominates the energy mix in Nigeria's economy. However, as discussed in the chapter, the country is also blessed with other energy resources that could augment fossil fuel energy supplies.[164] Notwithstanding the vast energy resources, Nigeria still finds it difficult to meet her domestic energy demands, particularly for electricity generation. This challenge is attributed to the nature of the energy policy system which fails to address the economic, social and environmental effects of the energy crisis.

As has been discussed in this chapter, the introduction of the 2018 Policy Guidelines - as per the NEP and NREEEP form part of FGN's interventions to revamp the current policy framework. This has not yielded the desired result as the the focus has been on sufficiency in energy supply that is economically favourable, protection of the environment and population from the externalities associated with the development of energy resources, and improving the technical capabilities in the energy system for security.

In the next chapter, the research will introduce the main theoretical framework which underpins the energy justice concept and framework with a view to finding whether it could offer new approaches to resolving Nigeria's long-running energy challenges.

[164] Augustine Madu, 'Nigeria Government Overhauls the Gas Sector to end the Energy Crisis' *The Guardian* (4 February 2008)

CHAPTER THREE

Global Perspectives on the Energy Justice Concept and Framework

3.0 Introduction

> Some may think that decisions about energy can be made on a purely technical or technological basis, without the need to be "distracted" by abstract questions of justice. We disagree, not only because typical controlling statutes for electric utilities require the pursuit of outcomes that are "just and reasonable," but also since in substance energy problems raise moral issues decisively and differentially affected by the outcomes of policy decisions.[1]

Chapter two discussed the energy crisis and its economic, social, and environmental implications in Nigeria. Further, it analysed three dimensions to the energy crisis, together with national policy interventions aimed at resolving it. From the analysis on the effect of energy crises, it is clear so far that the national policy solutions have not fully resolved the problems. Hence, the need to analyse if using an energy justice focus would illuminate new potential solutions to energy challenges. However, to do this, we need to first understand what the energy justice concept and its framework mean both from international and domestic perspectives.

This chapter is concerned with understanding global perspectives on the energy justice concept and its framework. It sets out what the energy justice concept means and, more specifically, what it could mean in the context of Africa. The objective here is to trace the trajectory of the concept from an idea to a framework backed by principles that could

[1] Benjamin Sovacool and Michael Dworkin, *Global Energy Justice: Problems, Principles and Practices* (Cambridge University Press 2014) 1.

potentially be used to both highlight and then address injustices caused by energy systems operation. The main research question this chapter seeks to answer is 'what is the energy justice concept and its framework?' The rationale for adopting the research question is based on the idea behind the energy justice concept, particularly one that stems from the need to ensure that decisions affecting energy systems lead to "just" and "reasonable" outcomes. The purpose of the whole research is to analyse the relevance of the energy justice concept in the search for solutions to some aspects of Nigeria's energy challenges.

It is important to note that any attempt to resolve energy challenges through the energy justice concept would require an understanding of the local context of how energy systems work in individual States. More importantly, the process of applying the principles derived from the energy justice concept and its framework may differ across the jurisdictions. For example, the nature and causes of the energy crisis in African nations may be different from those faced by European nations. Perhaps this is linked to different variables in terms of the economic, social, and environmental aspects of the energy crisis. Therefore, States faced with energy challenges need to demonstrate a clear understanding of the nature of the challenges before finding whether, and potentially how the energy justice concept could apply to resolve them.

Following this introduction, the chapter explores the concept of 'justice' which is central to the energy justice notion, including from various theoretical perspectives. The aim here is not to have readers ponder what justice is, rather it is to aid the understanding of its place and relevance in energy research (section 1). This is followed by section 2 which looks at the 'energy justice' concept, including a critical analysis of its framework. The chapter then moves on to examine the three core dimensions of energy justice, together with how they manifest injustice in energy systems (section 3). Next, it provides a discussion focused on understanding the need for justice in energy systems (section 4). The final section draws

conclusions that summarise all the analyses with a view to finding whether the energy justice framework could be used to address some aspects of energy access and poverty challenges (section 5).

3.1 Exploring the Concept of 'Justice' in Energy Research

While the concept of 'justice' is central to legal discourse, this section will analyse the notion of justice from legal, philosophical, sociological, and political perspectives and how it is understood in energy research. Presently, there is a significant body of research on the concept of justice that spans several disciplines.[2] This observation has led to many studies being devoted to the notion of justice including from the perspectives of law, philosophy, jurisprudence, and political philosophy amongst others. However, it is evident that far less has been expended on the notion of injustice.[3] Notwithstanding, the idea of injustice and its manifestation is beginning to gain traction in energy research.

Admittedly, the concept of justice is a difficult notion to explain and grasp.[4] This observation is attributed to its multi-faceted nature,[5] which has been debated for well over 2,000 years.[6] Justice can be described as "a moral concept with a rich and long history, stretching back before the time of Plato and Aristotle and returning as a constant thread from ancient thought to the twenty-first century".[7] Tracing back to the idea of justice as conceptualised from a philosophical point of view, Aristotle opined that justice means 'giving people what they

[2] Catherine Gross, 'Why Justice is Important' in Daniel Conwell and Quentin Grafton (eds), *Water Reform in the Murray-Darling Basin* (ANU Press 2011) 151.
[3] ibid.
[4] Sovacool and Dworkin, *Global Energy Justice* (n 1) 9.
[5] Aileen McHarg, 'Energy Justice: Understanding the 'Ethical Turn' in Energy Law and Policy' in Iñigo del Guayo and others (eds), *Energy Justice and Energy Law* (Oxford University Press 2020) 20.
[6] Sovacool and Dworkin, *Global Energy Justice* (n 1) 9.
[7] Hinman Lawrence, *Ethics: A Pluralistic Approach to Moral Theory* (4th edn, California: Thomson and Wadsworth 2008) 233.

deserve', and to determine who deserves what, we have to determine what virtues are worthy of honour and reward.[8]

By contrast, political philosophers such as Immanuel Kant in the eighteenth century argued that the justice principles defining our rights should not rest on any particular conception of virtue, or of the best way to live, rather a just society respects each person's freedom to choose his or her conception of the good life.[9] For Jeremy Bentham, an English moral philosopher and legal reformer, justice theory is labelled as utilitarianism that is sometimes summed up as seeking "the greatest good of the greatest number".[10] Bentham's idea of justice is founded on the sole principle to maximise utility, and by utility, he means whatever produces pleasure or happiness and whatever prevents pain or suffering, this should be considered as justice by individuals and governments when deciding what laws and policies to enact – the goal should be to maximise the happiness of the community as a whole.[11]

For the utilitarian, Henry Sidgwick whose focus on justice was in terms of achieving generational equity in the same century proposed that the idea of justice as it relates to generational equity should mean that the welfare of all persons must be weighted equally, including the yet unborn.[12] On the justice of generational equity, Rawls advanced his "savings principle" to suggest that contemporary people have an obligation to compensate future generations for the damage they inflict on the world, meaning they must set a social minimum of "savings" that transcends generations.[13] This conception seems to be akin to Rawls's conception of justice as fairness which may be applied not only to institutions but also to individuals for whom the institutions operate.

[8] Michael J. Sandel, 'Justice: What is the Right Thing to Do?' Boston Law Review 1303.9.
[9] ibid.
[10] Sovacool and Dworkin, *Global Energy Justice* (n 1) 9.
[11] Sandel (n 8) 9.
[12] Scott Gordon, *Welfare, Justice, and Freedom* (New York: Columbia University Press 1980)
[13] John Rawls, *A Theory of Justice*, revised edn. (Cambridge, MA: Belknap Press 1999) 255.

According to Sandel, three approaches to the concept of justice were identified in his book titled - *Justice: What is the Right Thing to Do*? Firstly, justice encompasses the utilitarian idea of maximising the welfare or happiness of society. Secondly, justice means respecting freedom and human dignity. Thirdly, justice has to do with honouring and recognising virtues and the goods implicit in social practices.[14] Other scholars describe justice as a combination of ensuring and recognising the basic equal worth of all human beings together with a commitment to the distribution of good and bad things.[15]

Perhaps the most far-reaching example of what is essential for an adequate understanding of the modern concept of justice is John Rawls's foundational idea which posits that - justice has to be seen in terms of the demands of fairness.[16] Rawls was a leading political philosopher in the twentieth century who propounded a theory of justice based on fairness. Rawls's rightly celebrated approach of 'justice as fairness' yields a unique set of principles of justice that are exclusively concerned with setting up 'just institutions'- meant to constitute the basic structure of the society while requiring that people's behaviour complies entirely with the demands of the proper functioning of these institutions.[17]

According to Rawls, "Justice is the first virtue of social institutions, as truth is of systems of thought".[18] Being the first virtues of human activities, truth and justice are uncompromising.[19] Rawls's theory of justice is predicated on what society "ought" to be.[20] He further makes the normative case for a society based on justice as fairness, considered to be a necessary

[14] Sandel (n 8).
[15] Tom Campbell, *Justice* 3rd edn (Hampshire: Palgrave Macmillan 2010)
[16] Amartya Sen, *The Idea of Justice* (Penguin Books 2009) 53.
[17] John Rawls, *A Theory of Justice* (Harvard University Press 1971) 3.
[18] ibid 3.
[19] ibid 4.
[20] ibid.

corollary of his theory. In this regard, he argued that laws must reflect justice and cannot only express the will of the sovereign or lawmaker.[21]

In expounding the concept of justice, Rawls's idea of justice is viewed from three different contexts. Firstly, there is the derivation of his principles of justice that is based on the idea of fairness, which identifies that institutions need to be grounded in justice for the basic structure of the society.[22] Secondly, there is the angle of reflection and the development of reflective equilibrium - in which ideas of justice can figure, but the focus is on the respective personal assessment of goodness and rightness.[23] Thirdly, Rawls conceptualises the idea of justice as an overlapping consensus dealing with complex patterns of agreements and disagreements on which the stability of social orders depend.[24] This research is concerned with the first view which sees justice as fairness but which is to be achieved through the establishment of just institutions that are designed to be the basic structure of the society. The point here is that Rawls's philosophical understanding of justice is strongly based on ensuring fairness as the foundational principle and operation of social institutions. By applying Rawls's theory, we can, therefore, argue that institutions that need to promote justice as fairness would include those having responsibility for the operation of energy systems.

The argument on the concept of justice as it relates to energy systems is essentially based on entrenching 'justice principles' as being central to re-balancing the global energy system.[25] This notion explains the importance of the concept of justice to energy systems. The aim here is to ensure that there are no characteristics of bias in evaluations, taking note of the interests and concerns of others as well and, the need to avoid being influenced by respective vested

[21] ibid.
[22] Sen (n 16) 54.
[23] ibid.
[24] ibid.
[25] Darren McCauley, *Energy Justice: Re-Balancing the Trilemma of Security, Poverty and Climate Change* (Palgrave Macmillan 2018) 10.

interests, or by personal priorities or eccentricities or prejudices.[26] This approach is broadly seen as a demand for impartiality and is central to the theory of justice as fairness.[27]

As earlier stated, Rawls's position is that the principle of justice as fairness determines basic social institutions that should govern the society.[28] This conception of justice has been transposed into modern-day social institutions around the world, including energy systems that are seen to be largely unfair in the way they deliver to the people. For example, energy access benefits and burdens are disproportionately distributed to people around the world. This is evidenced by the current developmental and financial gap between countries in the Global North and Global South. Particularly, in Asian and African countries, the current global energy system has failed to provide energy for all.[29] This is attributed to the inequitable distribution of energy resources, including how the global energy system has focused on the development of the resources.[30]

It is important to note at this juncture that the tools offered by different philosophers and their justice theories are very complex and diverse, to the extent that some may overlap. For example, in contrast with most modern theories of justice, such as Rawls's conception, that tend to concentrate on a just society, Sen believes that there is a need to conduct an investigative realisation on the advancement or retreat of justice as it affects individuals before arriving at any substantive theory of just institutions as argued by Rawls.[31] Notably, Sen developed this approach throughout the 1980s and 1990s, taking into account the concept

[26] Sen (n 16) 54.
[27] ibid.
[28] John Rawls, *A Theory of Justice* (n 17)
[29] Allie Silverman, 'Energy Justice: The Intersection of Human Rights and Climate Justice' in **Sébastien Duyck,** Sébastien Jodoin and **Alyssa Johl** (eds) *Routledge Handbook of Human Rights and Climate Governance* (Routledge 2020) 252.
[30] Margaretha Wewerinke-Singh, 'A Human Rights Approach to Energy: Realizing the Rights of Billions within Ecological Limits' (2022) 31 Review of European, Comparative and International Environmental Law 16-26.
[31] Sen (n 16) 8.

of justice as "fairness" expounded by Rawls and then focusing on the "functioning" and "capability" of justice from an individualistic approach.[32]

Particularly, Sen argued from the perspective of a comparative assessment of justice focusing on how to make a society more just (that is, the process of achieving justice), rather than speculating about the nature and demands of a perfectly just society.[33] In this regard, Sen noted that the starting point should take the form of providing answers to questions such as 'how would justice be advanced?' rather than questions such as 'what would be perfectly just institutions?'[34] His approach would involve assessing people's capacity to 'convert the primary goods into good living'[35] and hence requires evaluating people's abilities to do the things they value.[36] This conception contrasts sharply with other theories of justice as it has the effect of providing a radical change to the formulation of the theory of justice.[37] The change has the dual effect of first, taking the comparative rather than the transcendental route, and second, focusing on actual justice realisations in the societies involved rather than only on just institutions and rules as argued by Rawls.[38]

Furthermore, Sen's arguments focus on practical ways to achieve justice in societies and this he said, should begin by asking how justice is to be achieved – that is by way of substantive advancement of justice from an individualistic approach,[39] rather than focusing on just institutions as the basic structure of societies. While some scholars have recognised the inadequacies of focusing on the use of just institutions alone to achieve justice in societies,[40]

[32] Amartya Sen, *Inequality Re-examined* (Oxford University Press 1992)
[33] Amartya Sen, 'The Idea of Justice' (2008) 9 (3) Journal of Human Development 331-342.
[34] Sen (n 16) 9.
[35] ibid 66.
[36] Rawls (n 13) 231.
[37] Sen (n 16) 9.
[38] ibid.
[39] Hanri Mostert and Helen Van Niekerk, 'Disadvantage, Fairness, and Power Crises in Africa: A Focused Look at Energy Justice' in Yinka Omorogbe and Ada Odor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 46.
[40] Sen (n 16) 8-10

this approach could however be further enriched by including the rights of citizens to participate in energy decisions. This idea is to project other viable channels to achieve justice in energy systems based on the understanding of the nature of energy problems confronting individual systems, including the ones characterised by justice-related issues.

In sum, despite the variations of the justice concept, it remains a tool that suggests multiple conclusions for energy research and practice.[41] Justice principles provide an analytical framework to help us to think about energy systems as more than simply hardware, and beyond the black box.[42] This observation makes us recognise that the justice concept in the context of energy research has a significant role to play in the search for solutions to global energy problems. Building on this analysis, this chapter will now turn to an examination of the energy justice concept and its framework.

3.2 Energy Justice: Conceptual Framework and Analysis

After two decades of the twenty-first century, it is clear that there are people who still live in an age of severe energy poverty.[43] Not too long ago, attempts in energy practice to bring together terms such as energy and justice would have been difficult, if not impossible due to observations that energy policy and technology are somewhat restricted to the domains of engineering and economics.[44] However, this notion of energy justice has become viable as energy scholars are beginning to recognize that energy practice all over the world raises justice and ethical questions.[45] These questions are particularly raised in the context of energy systems operation with the objective of going beyond technological issues and looking at the role justice considerations could play in the course of resolving energy challenges.

[41] Benjamin Sovacool and others, 'Energy Decisions Reframed as Justice and Ethical Concerns' (2016) 1 Nature Energy 4.
[42] ibid.
[43] Silverman (n 29) 251.
[44] Sovacool and others, 'Energy Decisions Reframed as Justice and Ethical Concerns' (n 41) 4.
[45] Sovacool and Dworkin, *Global Energy Justice* (n 1) 1.

Recent debates show that energy is significantly high on the agenda of political discussion around the world due to concerns over the security of supply, rising prices, and climate change among others.[46] One of the past Chief Executive Officers of the Electric Power Research Institute in the U.S describes energy as 'the elemental force upon which all civilizations are built, and technology provides the means to harness energy'.[47] This conception makes energy critical for the maintenance of innumerable vital life support systems spanning domestic, commercial, and industrial use such as transportation, food production, information technology, national security, health care, cooking, lighting, mechanical power, chemical production, and generally for economic growth.[48]

However, in the current energy landscape, we note that practices in the sector now raise new questions about energy and justice.[49] This is because energy does so much more and forms the basis upon which our modern society functions. Perhaps, the importance of energy justifies the exponential growth rate of its primary use and the link to socio-economic development as the human population equally continues to grow at such a pace.[50] Whilst energy remains a fundamental need and determinant of human progress,[51] more often than not, we note that humans need to strive continually to transform one form of energy in the conversion process into another to sustain progress.[52] This approach has led to the

[46] Sarah Marie Hall, Sarah Hards, and Harriet Bulkeley, 'New Approaches to Energy: Equity, Justice and Vulnerability. Introduction to the Special Issue' (2013) 18 (4) Local Environment: The International Journal of Justice and Sustainability 413-421.
[47] Kurt Yeager, *Electricity, and the Human Prospect: Meeting the Challenges of the 21st Century* (Palo Alto: Electric Power Research Institute 2004) 3.
[48] Lakshman Guruswamy, *Global Energy Justice: Law and Policy* (West Academic Publishing 2016) 13.
[49] Hall, Hards and Bulkeley (n 46) 413.
[50] See the International Energy Agency, World Energy Outlook 2011 (Paris: OECD, 2011) See also International Energy Agency, Key World Energy Statistics 2011 (Paris: OECD, 2011).
[51] Leslie A. White, *The Evolution of Culture: The Development of Civilization to the Fall of Rome* (McGraw-Hill Book Co., Inc.1959) 33-57.
[52] Guruswamy (n 48) 8.

development of complex energy systems that connect energy resources and the delivery of economic infrastructures.[53]

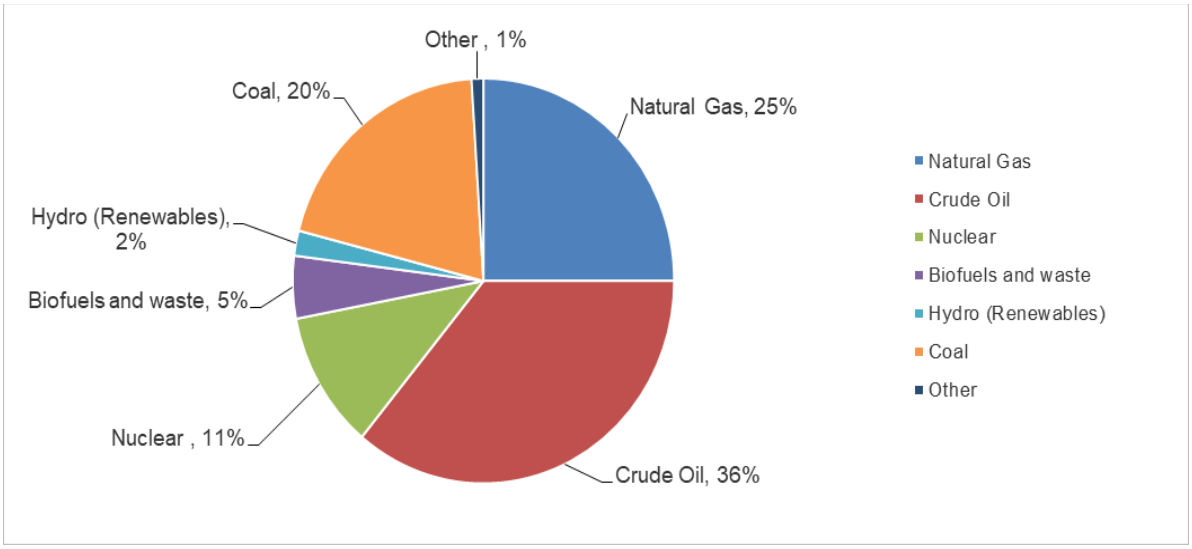
According to the International Energy Agency (IEA), the global energy demand is projected to grow by 45 per cent between 2014 and 2030, and this amount will almost triple by the end of the century.[54] Between 2011 and 2035, it is reported that there would be an additional $38 trillion to be invested in the global energy sector.[55] This is in tandem with the yearly energy demand of the world which is put at 409 exajoules (9,741 Mtoe), most of which comprises commercially traded primary energy sources such as oil and gas amongst others.[56] From 2011 to date, energy consumption in the U.S alone more than tripled and in Japan quadrupled, and increased by a phenomenal factor of 13 in China.[57] Reportedly, the global oil demand also increased by 1.3 per cent in 2018 alone, led by the U.S and China, – and driven by the constant need for oil in petrochemicals and for jet fuel.[58]

In Africa, there is also an increase in the rate of energy consumption at 4.1 per cent growth, and this is believed to be growing faster than that of any other continent in the world.[59] This increase in energy consumption is driven by improved infrastructure, inward investment, and efforts to tackle corruption in the energy sector.[60] Interestingly, the consumption of energy is

[53] Sovacool and Dworkin, *Global Energy Justice* (n 1) 48.
[54] International Energy Agency: World Energy Outlook 2011: Paris OECD https://iea.blob.core.windows.net/assets/cc401107-a401-40cb-b6ce-c9832bb88d85/WorldEnergyOutlook2011.pdf accessed 25 February 2022.
[55] ibid.
[56] D. A. Coley, *Energy and Climate Change* (West Sussex, England: John Wiley & Sons, 2008), pp.312-22.
[57] IEA (n 54)
[58] International Energy Agency, *Global Energy and CO2 Status Report: Oil* (2019), https://www.iea.org/geco/oil accessed 20 April 2020
[59] See Africa's Energy Consumption Growing Fastest in the World <https://www.csmonitor.com/World/Africa/2013/0101/Africa-s-energy-consumption-growing-fastest-in-world> accessed 15 February 2022.
[60] ibid.

set to rise further in the future with increasing population, urbanisation, and economic productivity in the continent.[61]

Figure 3.1 Global Energy Resources Consumption (2019)



Source: *International Energy Agency and U.S Energy Information Administration*

It is important to note at this juncture that despite the importance of energy and its influence on human development, together with the increased consumption rate as stated above, we know that not everyone has access to energy, or people have to pay exorbitant costs for energy, and many sources of energy are very polluting causing environmental harm. Even just highlighting these three very basic issues demonstrates that there are inequalities in the provision and production of energy – (that is our energy systems) which some have labelled as 'injustice'. [62]

[61] World Economic Forum, Understanding Africa's Energy Needs <https://www.weforum.org/agenda/2016/11/understanding-africas-energy-needs/> accessed 25 February 2022.
[62] Sovacool and Dworkin, *Global Energy Justice* (n 1)

3.2.1 Definitional Context

This section explores the energy justice concept and highlights some of the principles derived from it. Furthermore, it sets out what the concept means in the context of this research, and more importantly what it could mean in terms of resolving energy challenges.

The energy justice concept is said to be void of stand-alone definitions and it is argued that the universal adoption of a single definition of the concept is unlikely.[63] The concept is a relatively new phenomenon in energy scholarship, albeit it has been used in practice for almost a decade.[64] The energy justice concept permeates many aspects of the energy life-cycle ranging from energy conversion to distribution, marketing, and use, among others.[65] In recognition of these aspects, it then defines the application of rights across and within the various system components of energy provision and consumption.[66] This observation makes the concept dynamic as it now introduces different themes with links to an overarching principle that is focused on achieving 'just' and 'reasonable' outcomes in decisions that affect energy systems.

The energy justice concept brings together different views and perspectives on theoretical and practical linkages between communities, nations, and generations on how energy systems ought to work.[67] Further, its application presents an opportunity for policymakers and energy decision-makers to develop energy systems that would deliver 'just energy' outcomes.[68] In this research, discussions of the concept of energy justice will be narrowed down to selected aspects of injustices in energy systems. Overall, the research will show how injustices in the

[63] Aladdine Joroff, 'Energy Justice: What it Means and How to Integrate it into State Regulation of Electricity Markets' (2017) 47 Environmental Law Reporter 10927.
[64] Raya Salter, Carmen G. Gonzalez, and Elizabeth Kronk Warner (eds), *Energy Justice: U.S and International Perspectives* (Edward Elgar 2018) 2.
[65] Benjamin Sovacool and Michael Dworkin, 'Energy Justice: Conceptual Insights and Practical Applications' (2015) 142 Applied Energy 436.
[66] McCauley, *Energy Justice: Re-balancing the Trilemma* (n 25) 11.
[67] Robert Bullard, 'Foreword' in Raya Salter, Carmen Gonzalez, and Elizabeth Kronk Warner (eds) *Energy Justice: Us and International Perspectives* (Edward Elgar 2018) xvi.
[68] ibid.

system continue to exacerbate the energy challenges both at the international and domestic levels.

As an emerging field in energy scholarship, there is difficulty in attaining a universal understanding of the concept because it largely requires shared interpretations of what is right or good.[69] Notwithstanding, building on the tenets of 'environmental justice', which provides that all people should have a right to be protected from environmental pollution and to live and enjoy a clean and healthy environment,[70] the 'energy justice' concept is based on a similar approach - that all people should have access to clean, reliable, safe, and affordable energy, with protection from a disproportionate share of costs or externalities associated with building, operating and maintaining electric power generation, transmission, and distribution systems; and equitable distribution of energy burden and benefits from such systems.[71]

From the energy justice literature, the most comprehensive energy justice framework is presented in two approaches by Sovacool *et al.*[72] First, these authors posit that the concept consists of three core dimensions, namely – (1) distributive; (2) procedural; and (3) recognition justice. These three core dimensions helps to identify justice issues in energy systems, and offers different answers to energy-related questions around energy systems. In addition to the three core dimensions, Heffron and McCauley advance a fourth and fifth dimension – that is cosmopolitan justice which means that all human beings must be treated equal in the energy landscape,[73] and restorative justice - that focuses on rectifying situations that cause injustices to communities or individuals in energy activities.[74] The first approach

[69] Sarah Hall, 'Energy Justice and Ethical Consumption: Comparison, Synthesis and Lesson Drawing' (2013) 18 International Journal of Justice and Sustainability, 422, at 428.
[70] Joroff (n 63)
[71] ibid.
[72] Benjamin Sovacool and others, 'Energy Decisions Reframed as Justice and Ethical Concerns' (n 41) 16024.
[73] Raphael J. Heffron and Darren McCauley, The Concept of Energy Justice Across the Disciplines (2017) 105 Energy Policy 658-667.
[74] Stephen Williams and Andréanne Doyon, 'Justice in Energy Transitions' (2019) 31 Environmental Innovation and Societal Transitions 144-153.

found in the literature on energy justice, therefore, links the concept to the three core dimensions that are also described as the 'triumvirate of tenets'.[75] The three core dimensions are briefly described below, however, they will be further analysed in subsequent sections of this chapter.

> (1) Distributive justice – which entails both the distribution of cost, how hazards and externalities arising from energy systems are disseminated throughout the society, and the distribution of benefits and access to modern energy systems and services;[76]
>
> (2) Procedural justice – which requires access to information about energy systems, allowing meaningful participation in energy decision-making, and access to legal procedures for obtaining redress or challenging decision-making processes that affect energy systems;[77]
>
> (3) Recognition justice – which advocates respect for the needs, rights, and experiences of those affected by energy decisions.[78]

As earlier mentioned, the energy justice literature has further developed two dimensions, namely: cosmopolitan and restorative justice. The cosmopolitan justice dimension stems from the view that in the energy landscape we are all citizens of the same world and therefore the cross-border effects on people from energy activities need to be considered.[79] The restorative justice dimension on the other hand looks to address any injustice caused by the energy

[75] Darren McCauley and others, 'Advancing Energy Justice: The Triumvirate of Tenets and Systems Thinking' (2013) 32 (3) International Energy Law Review 107-116.
[76] Benjamin Sovacool and others, 'Energy Decisions Reframed as Justice and Ethical Concerns' (n 41) 31.
[77] Gordon Walker and Rosie Day, 'Fuel Poverty as Injustice: Integrating Distribution, Recognition and Procedure in the Struggle for Affordable Warmth' (2012) 49 Energy Policy 69 at 72.
[78] Ross Gillard and others, 'Advancing an Energy Justice Perspective of Fuel Poverty: Household Vulnerability and Domestic Retrofit Policy in the UK' (2017) 29 Energy Research and Social Science 53 at 54.
[79] Raphael J. Heffron, "Applying Energy Justice into the Energy Transition" (2022) 156 Renewable and Sustainable Energy Reviews 111936.

sector, particularly whether they should be rectified, for example, decommissioning practices which could result in injustices that impact the environment and public health would be a classic example.[80] It is fair to say that the development of all dimensions is premised on the need to achieve what is considered to be 'just' and 'fair' processes throughout whole energy systems. Achieving just and reasonable outcomes in energy systems based on the dimensions is to be driven by established institutional, legal and policy frameworks designed with the view to deliver energy justice.

Second, Sovacool *et al* contextualise the energy justice concept and its framework within eight key principles namely: availability, affordability, due process, transparency and accountability, sustainability, intra-generational equity, inter-generational equity, and responsibility.[81] It is important to note that these principles are set out to help individual States in the delivery of just energy systems to the benefit of all people. This observation has led energy scholars, particularly from western countries, to argue that the development of the principles lacks coherence when discussed in light of different justice theories, consequently, limiting arguments on practical aspects of the concept.[82] For instance, the application of the energy justice concept should be approached from an angle that seeks to address complex energy challenges existing in both countries of the Global South and North. This is because delivering transformative change in contexts where energy systems are, for example, underdeveloped requires assessing the energy justice principles from multiple situated perspectives that are adjusted to the conditions that shape the possibilities for action.[83]

[80] ibid; See also Raphael J. Heffron, 'Energy Law for Decommissioning in the Energy Sector in the 21st Century' (2018) 11 Journal of World Energy Law and Business, 189-195, 189.
[81] Sovacool and Dworkin, *Global Energy Justice* (n 1) 366-71.
[82] McHarg (n 5) 24.
[83] Vanesa Castán Broto and others, 'Energy Justice and Sustainability Transitions in Mozambique' (2018) 228 Applied Energy 645-655.

Notwithstanding the various characterisations of the principles derived from the concept that now presents us with diversity and dissonance in definitions and how the concept is applied.[84] The present author argues that the principles remain constitutive elements of the energy justice framework. In practice, policymakers and energy decision-makers could leverage them to resolve some aspects of energy challenges and further use them to articulate the realization of just energy systems. The realization of just energy systems through the principles depends on how they are implemented in different circumstances whilst considering the nature of individual states' energy challenges. The approach is based on the premise that some countries will need to focus on certain principles before others depending on their energy challenges. The reality is that in the present energy landscape, some challenges are attributed to justice issues in energy systems, and therefore require the application of different principles embedded in the energy justice framework to resolve them.

A third approach to the energy justice framework is founded on proposed 'imperatives' this author has drawn from the energy justice concept and literature. The energy justice 'imperatives' are principles derived from the concept that ought to be embedded in energy systems operation for just and reasonable outcomes. This author has drawn the imperatives based on their linkages to how they tend to manifest injustices in energy systems and further contributing to energy challenges. The importance of introducing the imperatives (in Chapter 4) as part of the energy justice framework is because they could be applied directly to whole energy systems in order to resolve different aspects of energy challenges underpinned by justice concerns. The energy justice 'imperatives' are energy access and services, transparency and accountability of energy systems, sustainability in energy systems, just energy institutions, human rights-centred energy decisions, energy efficiency and conservation, energy democracy, anti-corruption and democratic participation, just

[84] Giuseppe Pellegrini-Masini and others, 'Energy Justice Revisited: A Critical Review on the Philosophical and Political Origins of Equality (2020) 59 Energy Research and Social Science 102-125.

consumption and inter-generational and intra-generational equity. It is important to note that these imperatives provide certain thresholds or criteria which are to be met by individual States in order to resolve different aspects of energy challenges underpinned by justice concerns.

In terms of their implementation, this author notes that implementing the imperatives in energy systems could potentially help to influence energy decisions affecting energy system to be just and reasonable. More so, it could result in a better decision-making process both in the international and domestic spheres.[85] This could be achieved when individual States move to leverage tangible benefits of the framework through the implementation of the proposed energy justice imperatives. In particular, the imperatives would help States to find where, and how injustices occur in energy systems with a view to resolving them. The importance of implementing the energy justice imperatives in Nigeria will be considered in Chapter 5 of this research. The focus will be to present an analytical discourse on the implementation of the imperatives through proposed tools available in Nigeria.

3.2.2 Energy Justice Framework: African Perspectives

An examination of the energy justice concept shows that it is largely framed from a Western philosophy based on the nature of their energy problems. At first sight, the concept arguably looks to be conceived either solely or predominantly from a Western approach – leading to interpretations that appear not to take into account African perspectives or more specifically, those from the Global South. This is evidenced in energy justice discourse at the global level that may have led to the uncritical translation of a universalist discourse on justice, to the specific context in which western-notions of justice may be wholly inappropriate.[86] Jenkins's position confirms the above notion with her work on case studies observed through the lens

[85] McCauley, *Energy Justice: Re-Balancing the Trilemma* (n 25) 1.
[86] Broto and others (n 83) 646.

of energy justice which were focused primarily on systems of large-scale on-grid electricity generation in the Global North.[87]

Presently, from the current energy justice literature, there appears to be less focus in terms of analysis of the concept from multiple situated perspectives.[88] This implies that there is the absence of a balanced critical analysis of the concept from the perspectives of countries in the Global North and South. For example, a critical look at the concept within the context of countries in the Global South should aim to assess how best they can ensure clean energy provision, increase electricity, and clean cooking access while protecting the environment in a fair and equitable manner.[89] This is because the concept itself offers distinct ways to capture the various concerns affecting these countries and these concerns should form the basis of a critical interpretation of the concept suitable for countries in the Global South.

The current analysis of the concept, particularly from a western perspective has not been adjusted to the conditions that shape the possibilities for action in different countries.[90] This is evidenced in the predominantly Western-framed energy justice scholarship that is without a balanced conceptual analysis relating to African countries. This observation is important because energy challenges differ in countries. For example, the injustice manifesting through energy poverty in the form of unaffordability in developed countries would not necessarily be prioritised in developing countries. This is because energy poverty in developing countries is mainly attributed to the challenge of poor energy access and not necessarily due to the unaffordability that we have seen in developed countries. Although if there is the occurrence of poor energy access in a developed state, this could be considered a challenge. It is,

[87] Kirsten Jenkins and others, 'The Methodologies, Geographies, and Technologies of Energy Justice: A Systematic and Comprehensive Review (2021) 16 (4) Environmental Research Letters 1-25.
[88] Broto and others (n 83) 645.
[89] Darren McCauley, Rebecca Grant and Evance Mwathunga, 'Achieving Energy Justice in Malawi: From Key Challenges to Policy Recommendations' (2022) 170 (28) Climatic Change 3.
[90] Broto and others (n 83) 647.

therefore, important to interpret and apply the energy justice concept from the position of localized energy challenges peculiar to individual states.

The argument advanced above is that the energy justice concept should be interpreted as a practical tool to analyse and, possibly, redefine established ways of doing things in the energy sector, especially at the domestic level. As an emerging concept, Western theorization, particularly in terms of how it could be implemented to resolve any form of injustice manifested by energy systems should not overlook or ignore views of countries that have been the most affected by challenges in the global energy system. For example, whilst the principles mentioned earlier as developed by Sovacool and Dworkin,[91] may have a plausible appeal for countries in the Global North, it is fair to say that the policy prescriptions derived from them may not entirely be suitable for countries in the Global South. Thus, the discourse on the development and interpretation of the energy justice concept appears to be poorly grounded when it is examined from a broader range of energy processes framed from both developed and developing countries. This is evidenced in the current energy scholarship, where there has been an omission in establishing a just response to energy challenges which is required to be built on local inclusive governance of individual states.[92] However, case studies are now increasingly examining injustices in lower-income, off-grid, and pre-electrification cases globally, especially in SSA countries.[93]

Perhaps, the reason for the above observation is due to the absence of a proper evaluation of the nature of energy challenges faced in the Global South countries before attempting to apply the energy justice concept. With proper evaluation of the challenges, this could provide

[91] Sovacool and Dworkin, *Global Energy Justice* (n 1) 366-71.
[92] McCauley, Grant and Mwathunga 'Achieving Energy Justice in Malawi' (n 89) 1-22.
[93] Festus Boamah, 'Desirable or Debatable? Putting Africa's Decentralised Solar Energy Futures in Context' (2020) 62 Energy Research & Social Science 101390; See also Festus Boamah and others, 'Justifiable Energy Injustices? Exploring Institutionalised Corruption and Electricity Sector "Problem-solving" in Ghana and Kenya (2021) 73 Energy Research & Social Science 101914.

an opportunity for the concept to be interpreted and applied in a country-specific context based on understandings of energy challenges, particularly as it relates to individual states. Doing so could lead to a standard of application of the concept that considers localized aspects of the energy challenges faced by individual states.

It is also apparent from the present body of energy literature that arguments on the application of the concept to energy systems are heavily based on moral obligations of actors or at best utilising soft law mechanisms.[94] This observation reveals some limitations in the energy justice framework, as well as a complicated task of not only how to identify the legal instruments that advance the concept to be adopted by national regimes, but also the problem of regulatory enforcement to reach the aspirations set forth by the conceptual framework. Hoffman argued that there is presently a gap between the popularity of energy justice discourse and the lack of adequate regulatory and sanctioning actions needed to translate good justice-inspired principles into concrete, affirmative action.[95] This remains a distinct challenge for energy scholars from both the Global North and South as there has been no clear identification of the type of legal instruments that could be used to pursue the enforcement of the energy justice concept and its framework.

The idea of integrating enforcement mechanisms into the energy justice framework through legal instruments is lacking even from Western theorization of the concept. The present author would argue here that there is a need to provide an interpretation that situates the energy justice concept within existing legal instruments at the international, regional, and domestic levels. The implication of this is that it would create an intuitive appeal to translate

[94] For example, see the call on states to realise the energy justice goal of access that is anchored on the United Nations Sustainable Development Goal 7 as agreed by the international community recognizing clean and affordable energy for all. This focus, however, remains a challenge for national regimes due to the lack of any universal enforcement mechanism.

[95] Steven M. Hoffman, Negotiating Eternity: Energy Policy, Environmental Justice, and the Politics of Nuclear Waste' (2001) 21 (6) Bulletin of Science, Technology & Society 456-72.

regulatory enforcement of the concept into national regimes and their energy systems. This, in turn, could set in motion the opportunity for individual states to begin to think about how to achieve the overall objectives of the energy justice concept – that is to, among other things, ensure the delivery of just energy systems.

Furthermore, it is safe to argue that an understanding of the construct of the energy justice concept, and more importantly, its application should begin with a consideration of the nature of the energy challenges of individual states. This approach would ensure that the concept is tested in different states to check its suitability. Perhaps, this will allow energy justice scholars to provide interpretations gleaned from a well-grounded functional approach to energy systems as opposed to binding them into a pre-determined Western philosophy. The present author submits that such interpretations would lead to the framing of the concept that takes into account key factors such as the social and economic situations, geographical location, energy access challenges, and availability of energy resources in individual states. It is therefore fair to say that current interpretations from the scholarship without consideration of the above factors may have contributed to the lack of consensus on the theoretical underpinnings of the concept amongst energy justice scholars.

Furthermore, energy scholars have argued that discussions focused on practical application of the concept remain under-theorized.[96] Particularly, from an African perspective, the application of the concept requires different approaches. This observation is gleaned from scholarly works in the field of energy justice that are to some degree detached from "real world" practice.[97] In reality, setting out its theory is one thing and understanding its applicability to real-life situations is another thing. This is even more challenging as energy challenges differ in countries. For example, the application of the concept towards resolving

[96] Salter, Gonzalez and Warner (n 64) 2.
[97] Kirsten Jenkins and others, 'Towards Impactful Energy Justice Research: Transforming the Power of Academic Engagement' (2020) 67 Energy Research and Social Science 101510.

energy challenges in SSA countries should ordinarily start by taking a critical look at aspects of the institutional, legal, policy and regulatory framework in the region's energy sector. This is because until the challenges faced in the current frameworks are resolved, it may be difficult for SSA countries to achieve energy justice. Thus, the application of the concept should be based on how it is framed towards resolving specific challenges confronting the energy sector in individual states. This would require country-specific approaches to be taken into consideration, including the nature of energy problems, in particular the ones characterised by justice concerns. This author submits that the requisite steps for moving the concept from the realm of theory to practice should be based on approaches to energy challenges that vary between countries. This approach which would be discussed fully in subsequent chapters of this research includes one that seeks to protect low-income citizens, including adopting a system from the outset that addresses the institutional, legal and policy challenges exacerbating the energy challenges. The approach would aim to track the traditional goal of energy system regulators and institutions to ensure just energy access that is reliable, affordable, and sustainable for all people.

It is important to note at this juncture how the energy justice concept as framed for this research is useful for addressing some aspects of the energy challenges underpinned by justice concerns. This could be argued from two approaches. Firstly, as analysed in chapter 2, energy challenges are largely attributed to weak institutions and policy frameworks manifesting injustices that impact how the energy systems operate. Secondly, the challenges are also attributed to unjust energy systems with negative impacts on those whom the energy is supposed to serve. For example, some of the injustices amounting to energy challenges relate to the prevalence of the 'resource curse' among other challenges.[98] The resource curse

[98] Samuel B. Mabikke, 'Africa's Wealth of Resources, Blessing or Curse' (January 2012) Expert Conference Organized at the European Academy Otzenhausen, Saarland 3. www.hss.de/download/120120_Mabikke.pdf accessed 15 May 2022.

is mainly connected to weak governance structures and legal frameworks in the energy sector.[99] Furthermore, the resource curse syndrome is attributed to the lack of good governance principles such as transparency and accountability, and even the rule of law that ought to guide the way the systems work in the energy sector.[100]

In sum, it could be deduced from the analysis above that addressing different forms of injustice in energy systems may require, among other things, a response to issues affecting weak institutions, legal and regulatory frameworks. Perhaps the starting point could be interpreting the concept in a way that takes into consideration peculiar challenges linked to individual states. This research will turn to answering the question why energy justice.

3.2.3 Why Energy Justice

To answer the above question, we must recognise that there are justice concerns raised by the global energy system as well as the energy conversion cycle. This observation makes the energy justice concept a valuable analytical tool that could be used to address injustice concerns in our energy systems. In practice, energy injustices are manifested not only by policymakers and regulators, but also by ordinary people, homeowners, businesspersons, investors, and consumers – essentially, anyone that makes decisions or choices about energy conversion and use.[101] For example, energy systems are largely centralized with national governments in many states exercising major control over decisions relating to the operation of the system. However, ordinary people and businesses have a role to play especially in the way they interact with energy systems through their individual and collective decisions. This interactions, particularly from the government's perspective has led to energy decisions surrounding infrastructures that fail to acknowledge the need for an individual's broader

[99] Halvor Mehlum, Karl Mene, and Ragnar Torvik, 'Cursed by Resources or Institutions' (2006) The World Economy 1118.
[100] ibid 1121.
[101] Sovacool and Dworkin, *Global Energy Justice* (n 1) 5.

capabilities in the context of decentralised energy systems.[102] Consequently, we see that some of the energy decisions as they relate to the system in SSA countries are unjust and thus, continue to exacerbate the energy challenges in diverse ways.

Similarly, the current global energy system raises social and environmental injustice issues caused by the impact of energy developments, such as hydroelectric dams or resource extraction operations, and even injustices from the energy conversion cycle. For example, we know that fossil fuels emit large quantities of substances that pollute the air, land, and environment, resulting in serious adverse health impacts.[103] Energy resource extraction also has an impact on water systems, in particular from production.[104] Other instances of how energy systems work to deliver injustice include the production of feedstock for bioenergy, the abstraction of water for thermal power cooling systems, and the diversion and harnessing of water for hydroelectric systems – as all of these have an impact on water usage.[105]

A further way to answer the question – 'why energy justice?' is through an understanding of the rationale behind the concept itself. This approach will help us to understand and appreciate what is perhaps the first general idea behind the concept of energy justice – which is focused on promoting universal access to energy systems. This idea makes the issue of access and consumption to be put at the centre of the energy justice discussion. Understandably, the provision of universal access to energy systems is paramount in the realisation of just energy systems. This implies that addressing the challenge of access makes the concept of energy justice more impactful with the capacity to influence actors such as policymakers and regulators to pursue the delivery of just energy systems for all people.

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[102] Ruth Kruger and Darren McCauley, 'Energy Justice, Hydropower and Grid Systems in the Global South' in Gunter Bombaerts and others (eds) *Energy Justice Across Borders* (Springer 2020) 93.
[103] Thoko Kaime and Robert Glicksman, 'An International Legal Framework for SE4All: Human Rights and Sustainable Development Law Imperatives (2015) 38 (5) Fordham International Law Journal 1428.
[104] ibid 1429.
[105] ibid.

In light of the above, it becomes necessary to ask whether the energy justice concept has any role to play in energy decision-making, particularly those that affect the energy lifecycle. Scholars have argued that asking the question above provides a better way to assess and resolve energy-related dilemmas.[106] This observation justifies why the concept is useful to address injustices in energy systems that may not be connected to technological factors. Additionally, the consideration of justice elements in energy decision-making alongside moral responsibilities in practice is important in the search for solutions to contemporary energy challenges. This is because energy challenges such as access, poverty, pollution and climate change, inefficiency, unsustainability, energy insecurity, and corruption among others, that are characterised by the energy crisis are now reframed as justice concerns.[107] Therefore, the energy justice concept and its framework provide an important structure to think about how it could be used to address contemporary challenges in the global energy system.[108]

In sum, this section has briefly reflected on what the energy justice concept might provide to energy decision-makers, as well as policymakers at both the international and domestic levels. More importantly, it shows how the concept can be used in the process of addressing energy challenges to create a just and equitable energy future. The discussions showed that much more is required to address energy challenges than only thinking through the technical aspects of the global energy system. The conclusion is that framing possible solutions to energy challenges now transcends beyond technology and is increasingly seen to include addressing abstract questions of injustice manifesting in energy systems.[109]

[106] Benjamin Jones, Benjamin Sovacool and Roman Sidortsov 'Making the Ethical and Philosophical Case for Energy Justice' (2015) 37 (2) Environmental Ethics 145-168.
[107] Sovacool and others, 'Energy Decisions Reframed as Justice and Ethical Concerns' (n 41) 16024.
[108] ibid.
[109] Sovacool and Dworkin, *Global Energy Justice* (n 1) 48.

3.3 Examining the Dimensions of Energy Justice

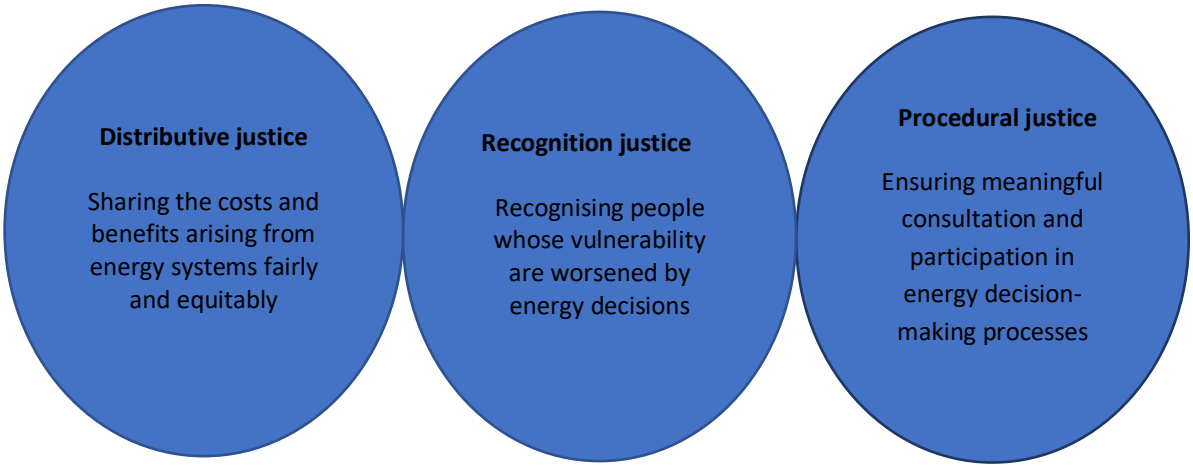
This section discusses a key aspect of the energy justice framework that includes its three core dimensions namely - distributive, recognition, and procedural justice. As stated under section 3.2.1, this research acknowledges the two other dimensions of energy justice namely: 'restorative justice' that emphasises a duty to rectify injustices arising from energy decision-making,[110] (that is providing access to remedies upon violation of legal rights) or, as some energy scholars describe it, as 'even-handed enforcement of energy statutes and regulation',[111] and 'cosmopolitan justice' which takes a universal approach that all human beings have equal moral worth regardless of ethnicity, gender, or social status (that is all human beings in all nations are bound and protected by moral principles).[112]

It is important to note that this research will focus on the three core dimensions for two reasons. Firstly, the three core dimensions of energy justice are central to the overall arguments made in this research – that is looking at whether the concept offers new solutions to energy problems. In practice, the injustices arising from the dimensions have far more effect on the people whom energy is meant to serve than the other dimensions. Secondly, based on contemporary energy challenges in the global energy systems, the three core dimensions appear to be best suited in terms of contextualising the energy justice concept. Part of the analysis in this section will analyse how far energy systems deliver injustices through the three core dimensions, especially as they are seen to apply across energy systems on a variety of scales.[113] Further, their application mainly assists policymakers as well as decision-makers to identify if, and if, so where, injustices occur in our energy systems and

[110] Heffron and McCauley 'The Concept of Energy Justice Across the Disciplines' (n 73) 660.
[111] Iñigo del Guayo and others (eds), 'Introduction – Energy Justice: Defining the Scope' *Energy Justice and Energy Law* (Oxford University Press 2020) 6.
[112] Benjamin Sovacool and others, Decarbonization and its Discontents: A Critical Energy Justice Perspective on Four Low-Carbon Transitions' (2019) 155 Climatic Change 581-619.
[113] Ramazan Sari and others, *Energy Justice : A Social Sciences and Humanities Cross-Cutting Theme Report* < https://shapeenergy.eu/wp-content/uploads/2017/07/SHAPE-ENERGY_ThemeReports_ENERGY-JUSTICE.pdf> accessed 20 May 2022.

processes and, more specifically, how justice can be achieved.[114] In practice, the dimensions are explored in the context of energy production, consumption, and conservation particularly, questioning where across the energy lifecycle the injustices occur.[115] An examination of the three core dimensions of energy justice is undertaken below.

Figure 3.2 *Summary of the three core dimensions of energy justice*



Source: *Authors' compilation*

3.3.1 Distributive Justice in Energy Systems

Distributive justice in energy systems focuses on questions centred on the siting of energy infrastructure and economic issues of energy benefits and burdens of who gets what.[116] This dimension is akin to the environmental justice movement, which is itself a response to the unequal distribution of environmental ills, pollution and waste, and the risks associated with them.[117] It is fair to argue that a practical way to look at the importance of distributive justice in energy systems is through the lens of Rawls' argument in his book - *A Theory of Justice*, where he argues "for legitimate principles of justice which have been arrived at through a fair

[114] ibid 2.
[115] Raphael Heffron and Darren McCauley, 'Achieving Sustainable Supply Chains through Energy Justice' (2014) 123 Applied Energy 435.
[116] Sari and others (n 113)
[117] Kirsten Jenkins and others, 'Energy Justice, A Whole Systems Approach' (2014) 2 Queens Political Reviews 77.

negotiation in which each person has equal rights to basic liberties and re-arrangement of social and economic inequities so that they bestow the greatest benefit to the most disadvantaged."[118] The same principle applies to distributive justice in the sense that benefits and burdens arising from energy systems must be equally distributed among members of the society.

In practice, evidence of distributive injustice relates to energy poverty which remains the most devastating characteristic of the modern global energy system with the unjust distribution of energy access.[119] Presently, an estimated 1.4 billion of the world's seven billion people live without electricity and 2.7 billion people rely on wood, charcoal, and dung for cooking and heating.[120] For developing countries such as Nigeria, lack of energy access is a major challenge exacerbated by the uneven spread of energy benefits and burdens to citizens in urban and rural areas. The energy access challenge raises distributive justice concerns - in the sense that energy injustice manifests in a situation where large parts of society have no or insufficient access to energy and services.[121]

Achieving distributive justice is concerned not only with the siting of energy infrastructure, but providing real access to energy and services.[122] For example, it has been argued that fuel poverty shows uneven spreads of burdens relating to affordable access to energy services.[123] This implies that the energy justice concept derived from the distributive dimension relates to both the provision of affordable access to energy and addressing questions that relate to the extent of people's freedoms and choices in terms of their energy costs and use. This brings

[118] Lakshman Guruswamy, 'Energy Justice and Sustainable Development' (2010) 21 Colo. J. Int'l Envtl. L. & Pol'Y 231-76 <http://scholar.law.colorado.edu/articles/231.> accessed 20 March 2022.
[119] Sovacool and Dworkin, *Global Energy Justice* (n 1) 225.
[120] Eleanor Stein, 'Energy Democracy: Power to the People? An Introduction' in Raya Slater, Carmen G. Gonzalez and Elizabeth Ann Kronk Warner (eds), *Energy Justice: U.S and International Perspectives* (Edward Elgar 2018) 266.
[121] Mostert and Van Niekerk (n 39) 55.
[122] Kirsten Jenkins and others, 'Energy Justice: A Conceptual Review' (2016) 11 Energy Research and Social Science 174-182, 176.
[123] ibid.

the idea of having human rights-centred energy decisions to the fore. Thus, human rights-centred energy decisions are equally relevant in achieving distributive justice involving the siting of energy infrastructure in nearby communities (this will be discussed further in chapter 4).[124] We recognise that energy infrastructure in many countries today has been established in ways that tend to deny the needs and views of specific groups of people.[125] Arguably, this approach is a pointer to one of the definitions of the energy justice concept – stipulating that distributive justice in energy systems is achieved where energy permitting and siting do not infringe on basic civil liberties and that communities are meaningfully informed and well represented in energy decisions.[126]

In sum, distributive justice emphasises that there needs to be a re-distribution of benefits and burdens as they relate to energy systems. This means having to ensure that there is fairness in the siting of energy infrastructures, and fairness in the distribution of its benefits – i.e., access to energy and services for all people at a reasonable cost and without discrimination amongst others. This conception should constitute part of the measures put in place to pursue distributive justice in energy systems operation, thus, evidencing the normative contribution to how energy systems should operate in a just and reasonable manner.[127]

3.3.2 Recognition Justice in Energy Systems

The recognition justice dimension is based on understanding the basis for social inequalities and the acknowledgement or dismissal of marginalised and deprived communities concerning the operation of energy systems.[128] This conception makes it difficult to be able to stipulate with clarity the delivery of energy justice without first recognising the needs and interests of

[124] ibid 176; Diane Sicotte, 'Some More Polluted than Others: Unequal Cumulative Industrial Hazard Burdens in the Philadelphia MSA, USA' (2010) 15 Local Environment 761-774.
[125] Jones Opoku-Ware, 'The Social and Environmental Impacts of Mining Activities on Indigenous Communities: The Case of Newmont Gold (Gh) Limited (Kenyasi) in Ghana' (Master's thesis, University of Agder 2010)1-2 and 13-16. https://core.ac.uk/download/pdf/225885401.pdf accessed 20 March 2022.
[126] Sovacool and Dworkin, *Global Energy Justice* (n 1) 54.
[127] Jenkins and others 'Energy Justice: A Conceptual Review' (n 122) 176.
[128] Sari and others (n 113) 2.

a group of people.[129] The justice of recognition is achieved when there is an understanding of the interests and needs of vulnerable and marginalised groups in the making of decisions that apply to energy systems.[130] For instance, recognition justice would be in effect where policymakers in a particular state recognise the interest of communities that host energy projects in the making of energy decisions. This means that the state recognises that extractive projects have an impact on host communities and that efforts must be made to promote procedural justice through recognition of their interest.

It is important to note that recognition is not the same as participation, instead, it manifests injustice in the form of disrespect, insult, and degradation that devalues some groups of people and places in comparison to others.[131] Further, it manifests injustice in areas where there is a failure on the part of energy proponents to recognise that obtaining a social licence to operate (SLO) is paramount in the delivery of energy justice.[132] According to energy scholars, acquiring SLO requires consultation with communities, including leadership structures while undertaking energy project development.[133] In principle, this approach helps to create a sense of belonging among the people in areas where energy activities are conducted.

The core principle of recognition is built on the foundation that individuals must be fairly and adequately represented - that they must be free from physical threats and that they must be offered complete and equal political rights.[134] For example, it requires acknowledging the

[129] Walker and Day (n 77)70.
[130] Mostert and Van Niekerk (n 39) 55.
[131] Gordon Walker, "Beyond Distribution and Proximity: Exploring the Multiple Spatiality of Environmental Justice" (2009) 41 (4) Antipode 614-636, 615.
[132] Mostert and Van Niekerk (n 39) 61.
[133] Alyson Taylor, 'Building a Social License to Operate in the Renewable Energy Sector https://www.bsr.org/our-insights/blog-view/building-a-social-license-to-operate-in-the-renewable-energy-sector accessed 20 March 2022.
[134] David Schlosberg, 'The Justice of Environmental Justice: Reconciling Equity, Recognition, and Participation in a Political Movement' in Andrew Light and Avner De-Shalit, *Moral and Political Reasoning in Environmental Practice* (London: MIT Press, 2003) 77-107.

needs of marginalised and vulnerable groups and communities in procedures relating to energy decision-making, such as the elderly and the poor. This process aptly describes the energy democracy principle that aims for 'participatory parity' – that is ensuring that people are given a sense of belonging in energy decision-making processes. It is fair to say that recognition justice is achieved where individuals or communities are allowed to participate 'on par with others in social interaction'.[135] An example of the manifestation of recognition injustice could be seen in regions, particularly in developing countries where oil and gas activities are conducted. While oil and gas resources remain the mainstay of the economy of these countries, there have, however, been some misrecognition of the people of host communities, particularly in terms of their needs, way of life and/or culture and the neglect of socio-economic development. For example, Angola which is one of Africa's most established Petro-states with oil as the mainstay of its economy remains a country where issues relating to recognition injustice are manifested in oil producing regions.[136] This injustice is attributed to the erroneous claim that states have unfettered freedom to explore and exploit natural resources,[137] even though it is clear that the principle of permanent sovereignty over natural resources places a duty on central governments to utilise natural resources towards the benefit of the whole population.[138]

Additionally, recognition justice has more to do with practices of cultural domination,[139] patterns of non-recognition (invisibility of people and their concerns),[140] and disrespect

[135] Nancy Fraser, 'Social Justice in the Age of Identity Politics' in Larry Ray and Andrew Sayer, *Culture and Economy After the Cultural Turn* (SAGE publications 1999) 25.
[136] José León García-Rodríguez others, 'Oil, Power, and Poverty in Angola' (2015) 58 (1) African Studies Review 159-176.
[137] United Nations, Economic and Social Council, Prevention of Discrimination and Protection of Indigenous People: Indigenous Peoples' Permanent Sovereignty over Natural Resources, Final report of the Special Rapporteur, Erica-Irene DAES (E/CN.4/Sub.2/2004/30,13 July 2004) para 20.
[138] Ricardo Pereira and Orla Gough, 'Permanent Sovereignty Over Natural Resources in the 21st Century: Natural Resource Governance and the Right to Self-Determination of Indigenous Peoples Under International Law' (2013) 15 Melbourne Journal of International Law 452.
[139] Nancy Fraser *Justice Interruptus: Critical Reflections on the 'Post socialist' Condition* (New York: Routledge 1997)

through stereotyping and disparaging language.[141] Non-recognition as an energy injustice occurs in various forms of cultural and political domination, culminating in insults, degradation, and devaluation.[142] In practice, the non-recognition element may lead to the loss of beneficial knowledge,[143] including valuable knowledge of indigenous people.[144] In this regard, it calls for acknowledging the rights of indigenous people to access and benefit-sharing of energy resources. Further, it manifests not only as a failure to recognise but also misrecognising – a distortion of people's views that may appear demeaning or contemptible.[145] It calls for the actual recognition of the divergent perspectives rooted in social, cultural, ethnic, racial, and gender differences in the operations of energy systems.[146]

In sum, the approach towards achieving recognition justice should seek to acknowledge externalities in the energy decision-making process by way of recognising far-reaching social, economic, and environmental impacts that affect energy systems.[147] This approach would also ensure that actions such as neglect and misrecognition of people, their environment, culture or way of life that are impacted by energy activities are identified and addressed as part of the overall strategy to achieve energy justice.

3.3.3 Procedural Justice in Energy Systems

The procedural justice dimension is a call to ensure equitable procedures are undertaken in energy systems – i.e., one that will ensure the engagement of all stakeholders in a non-

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[140] ibid.
[141] ibid.
[142] McCauley and others, 'Advancing Energy Justice' (n 75) 108.
[143] Jenkins and others 'Energy Justice: A Conceptual Review' (n 122) 177.
[144] Mostert and Van Niekerk (n 39) 60.
[145] Schlosberg (n 134) 77-107.
[146] Nancy Fraser, 'Social Justice in the Age of Identity Politics: Redistribution, Recognition, and Participation' in George Henderson and Marvin Waterstone (eds), *Geographical Thought: A Praxis Perspective* (London: Taylor and Francis 1999); Schlosberg (n 134) 77-107.
[147] Sigrid Stagl, 'Multi-criteria Evaluation and Public Participation: The Case of UK Energy Policy' (2006) 23 (1) Land Use Policy 53-62.

discriminatory way.[148] It is inspired by the need to explore different ways in which energy decision-makers engage with communities.[149] Further, it advocates for all groups to be able to participate in energy decisions, ensuring that their views are taken seriously throughout the operations in energy systems.[150] This approach requires participation, impartiality, and full information disclosure by governments, institutions, and other stakeholders in the energy industry.[151] Part of its core principle is to ensure that there is appropriate and sympathetic engagement with people that energy decisions may affect.[152] Therefore, the focus of the procedural justice dimension is to address energy injustices through the adoption of strategies that offer opportunities for people to be involved in decision-making processes around energy system infrastructures and technologies.[153]

As stated earlier, a fundamental aspect of the procedural justice dimension is that people are allowed to be involved effectively in decisions relating to energy systems ranging from production to distribution, and consumption of energy.[154] For example, one of the key energy justice imperatives is the need to have human rights-centred energy decisions relating to the operation of energy systems. The manifestation of this type of injustice could be seen in the extractive sector in terms of the notion of SLO,[155] and lack of 'free prior and informed consent of communities where energy resources extraction activities are conducted'.[156] It is

[148] Walker (n 131) 619; Robert Bullard, "Environmental Justice in the 21st Century" in J. Dryzek, and D. Schlosburg, *Debating the Earth* (Oxford University Press 2005) 322–356.
[149] Jenkins and others, 'Energy Justice: A Conceptual Review' (n 122) 175.
[150] McCauley and others 'Advancing Energy Justice' (n 75) 108.
[151] Anna Davies, 'Environmental Justice as Subtext or Omission: Examining Discourses of Anti-incineration Campaigning in Ireland' (2006) 37 Geoforum 708-724.
[152] Helen Todd and Christos Zografos, 'Justice for the Environment: Developing a Set of Indicators of Environmental Justice for Scotland' (2005) 14 (4) Environmental Values 483-501.
[153] Sari and others (n 113) 2.
[154] Benjamin Sovacool, Roman Sidortsov and Benjamin Jones, *Energy Security, Equality and Justice* (Routledge 2014) 121.
[155] Kieren Moffat and Airon Zhang, 'The Paths to Social Licence to Operate: An Integrative Model Explaining Community Acceptance of Mining' (2014) 39 Resources Policy 61-70.
[156] Emily Greenspan, 'Free, Prior and Informed Consent in Africa: An Emerging Standard for Extractive Industry Projects' (2014) Oxfam America Research Backgrounder Series http://www.oxfamamerica.org/publications/fpic-in-africa accessed 20 March 2022.

pertinent to note that an example of a place where procedural injustice manifests is in the NDR of Nigeria where there has been a failure both on the part of the government and multinational oil companies to purposefully engage with oil-producing host communities since the discovery and commencement of crude oil exploration and production in the country.

Procedural justice is also concerned with the delivery of just and reasonable outcomes in energy systems through local knowledge mobilisation, greater information disclosure, and better institutional representation.[157] We know that different energy injustices emerge because of the failure to consider the engagement of stakeholders, particularly at the local level. The absence of engagement can exacerbate the energy challenges in a country like Nigeria as it may cause civil unrest usually between the national government and oil-producing host communities. Therefore, the inclusion of local knowledge and stakeholder engagement in energy decisions could make a significant impact on the process of formulating energy policies that seek to deliver just energy systems.[158]

Of great importance to the discourse in this section is the non-disclosure of information relating to energy systems by governments, institutions, and firms. For example, many governments put public consultation at the centre of energy strategy and environmental decision-making.[159] However, the problem lies in the failure to disclose full information which of course impacts the effectiveness of participatory mechanisms and, thus, raises justice concerns. It is argued that at the global level, information disclosure can encourage more ethical and sustainable consumption practices as well as a society's choice of energy production.[160] Additionally, the practice of full information disclosure can act as a means of

[157] Jenkins and others, 'Energy Justice: A Conceptual Review' (n 122) 178.
[158] ibid.
[159] ibid.
[160] Hall 'Energy Justice and Ethical Consumption' (n 69) 422.

recourse when a community is faced with a given energy injustice,[161] whilst educating and empowering people to make informed decisions regarding energy use.[162] Non-disclosure of information relating to energy systems makes the imperative of transparency and accountability relevant. In practice, this justice imperative should ideally take the form of ensuring impartial energy institutions, especially in decision-making as such an approach could lead to the delivery of just energy systems.[163] It is important to note that an inclusive approach when making energy decisions, full information disclosure about the system, and allowing room for consultation and participation of all stakeholders are vital to achieving energy justice.

From the discussions on the three core energy justice dimensions and their application to energy systems above, there is a need to formulate energy policies through the lens of these dimensions. An effective strategy to achieve the above is for the actors of energy justice to seek ways to address the injustices in energy systems, perhaps by addressing them through the lens of the three core dimensions.

3.4 Need for Energy Justice Approach Towards Resolving Energy Challenges

For many years, debates around energy are mostly framed based on either economic or technical terms.[164] However, the energy justice concept is presently changing the narrative by looking at energy from a justice perspective.[165] This observation is important because energy is often seen as the life-blood of modern societies, therefore it follows that if a society wants what is 'just and fair', decisions relating to energy systems and the sector at large should

[161] Walker and Day (n 77) 69-75.
[162] Sovacool and Dworkin, *Global Energy Justice* (n 1) 123.
[163] ibid 208.
[164] Sovacool and Dworkin, *Global Energy Justice* (n 1) 4.
[165] Energy Justice: What is it and Why do we Need it <https://www2.monash.edu/impact/articles/energy/energy-justice-what-is-it-and-why-do-we-need-it/> accessed 25 March 2022.

support goals that reflect justice principles.[166] In some ways, this conception is in tandem with Rawls's theory of justice in which he described justice as the demands of fairness.[167]

In energy practice, it appears that when energy problems are discussed, there is a presumption that energy policy, security, and associated challenges are matters that should be handled by economists and engineers alone.[168] Regrettably, this approach has led to a misconceived idea that the energy market may be capable of solving all the challenges and that scientists and engineers can design technical solutions without the need to address abstract questions on justice.[169] One could argue that the above conception is misleading because it is now clear from the research that factors underpinning the various energy challenges may also require the application of justice principles to fully and meaningfully address them. As argued by energy scholars, the justice principles could be championed through policy implementation that utilises "bottom-up" approaches such as developing local household energy programs that help to expand access to energy and its services.[170] The point here is that there is a need for policymakers as well as decision-makers who constitute some of the actors and/or agents of energy justice to start rethinking decisions in a direction that seeks to ensure that justice principles play a dominant role in the operation of energy systems.

The need for energy justice is founded on two premises. Firstly, the concept refines and expands our legal understanding of how we plan for, invest in, and regulate energy systems.[171] This goes beyond the conventional approach of addressing energy challenges by way of using technological solutions. It is instructive to note that the energy justice concept now offers a way to capture various justice concerns manifesting in the energy life cycle to

[166] James Gustave Speth, Founder and President of World Resources Institute. Comment on a book entitled *Energy and Ethics: Justice and the Global Challenge* by Benjamin K. Sovacool.
[167] Rawls, *A Theory of Justice* (n 17)
[168] Benjamin Sovacool, *Energy and Ethics: Justice and the Global Energy Challenge* (Palgrave Macmillan, London 2013) 2.
[169] ibid.
[170] Salter, Gonzalez and Warner (n 64)
[171] ibid 2.

ensure the delivery of just energy systems that is safe, reliable, fair, affordable, and sustainable for current and future generations and the natural world.[172] This description is in tandem with the UN SDG 7 definition of the concept of energy justice that urges states to ensure access to affordable, reliable, sustainable and modern energy for all.[173] Secondly, the energy justice concept, if, and when implemented could establish an energy path forward that is restorative or minimizes and reverses the cumulative negative impacts of energy systems at local, regional, and global levels.[174] The concept engages with energy systems as a key component and translates into a necessary framework focused on justice-awareness thinking in energy grid systems.[175] This is important because many energy challenges, particularly experienced by developing states such as Nigeria have their roots in the energy grid system.

It is important to note at this juncture that the strategies with which individual states dealing with injustices in their energy systems would use to reverse the trend may be different. This is because injustices manifesting in energy systems could take diverse forms. For instance, injustices vary between countries in the Global North and South as what 'energy poverty' means for countries in the North (i.e., attributed to unaffordability) is typically different from what it means for countries in the South (i.e., attributed to access challenges). The point here is that the type of injustice manifesting in a particular country's energy system will, to a large extent, determine the principles embedded in the energy justice framework that could be used to address them. Therefore, there should first be analyses of what is happening on the ground – that is, the type of challenges attributed to injustice and then figure out how to apply the principles derived from the concept to help proffer specific solutions.

[172] ibid.
[173] Goal 7 of the Sustainable Development Goals <www.un.org/sustainabledevelopment/developmentagenda/> accessed 25 March 2022.
[174] Salter, Gonzalez and Warner (n 64) 2.
[175] Ruth Kruger and Darren McCauley, 'Energy Justice, Hydropower and Grid Systems in the Global South' in Gunter Bombaerts and others (eds), *Energy Justice Across Borders* (Springer 2020) 93.

A further way to appreciate the need for energy justice is informed by the struggle to have a just energy society. This idea is said to be achieved where access is prioritised as it is considered vital to the realisation of a more just society. Without energy access, it is difficult to address many of the socio-economic challenges such as poverty, achieving human wellbeing, social inclusion, and economic improvement.[176] The present author would argue that engaging the concept of energy justice would help to better expand our understanding of how energy systems work beyond the conventional technological viewpoint. Thus, it is safe to conclude that the energy justice concept unites different areas of energy systems and develops theoretical and practical linkages between them.[177]

It is important to add here that a key aspect of the energy justice concept is founded on the notion that delivering universal energy access offers a practical understanding of what it entails. This conception is one of the measures required to address energy problems amongst the energy-poor population in the world. The right for all to have access to energy and services, regardless of whether they are citizens of more or less greatly developed economies remains fundamental in energy justice research.[178] To put this succinctly, institutionalising access to energy is a major step forward in securing justice, especially for the energy poor.[179] This is because energy decisions are in one way or another likely to have profound impacts on the ability of States to increase access to energy and services.

The discourse on the need for energy justice could also be looked at from the perspective of its intersection with other concepts such as environmental justice, human rights, climate justice and indigenous rights among others that are important for human development.

[176] Thoko Kaime, 'International Energy Policy for Development: Human Rights and Sustainable Development Law Imperatives' in Philippe Cullet and Sujith Koonan (eds), *Research Handbook on Law, Environment and the Global South* (Edward Elgar 2019) 307.
[177] Slater, Gonzalez and Warner (n 64) 2.
[178] Sovacool and Dworkin, *Global Energy Justice* (n 1) 5.
[179] Guruswamy (n 48) 9.

Closely related to the intersections with other concepts is the idea that contemporary energy problems flowing from these other concepts also need to be addressed through the energy justice concept. Therefore, the energy justice concept provides a platform to address not only specific energy-related problems but other inter-related areas such as the ones identified above. Through the principles derived from its framework, energy systems could arguably be designed and positioned better and work more efficiently to provide just energy and services for all people.

The present author argues here that the principles derived from the energy justice framework are essential for re-balancing the global energy system in a manner that would ensure the provision of just energy systems for all people. This is achieved when justice issues challenge policymakers as well as decision-makers to reconsider positioning elements of fairness and equity at the heart of potential solutions to energy problems.[180] This approach portrays the concept as an important analytical tool for all stakeholders to help understand how values get built into energy systems to resolve common energy problems from a justice perspective.[181] Additionally, the concept remains a useful decision-making tool that can assist energy planners and consumers in making informed energy choices.[182] More so, understanding the need for energy justice presents people with set opportunities to develop new ways of thinking in terms of energy production, consumption, and waste.

In sum, framing the energy justice concept could be achieved by thinking through specific aspects of energy challenges as they exist in different states. This idea could potentially make it possible to provide new perspectives on how the principles embedded in the energy justice framework could be used to address energy challenges. An important aspect of the need for energy justice is that the concept provides ways for us to look beyond the idea of thinking of

[180] McCauley, *Energy Justice: Re-Balancing the Trilemma* (n 25)
[181] Sovacool and Dworkin, 'Energy Justice: Conceptual Insights and Practical Applications' (n 65) 435.
[182] ibid.

energy as images of infrastructure such as oil and gas energy facilities, coal mines, well fields, pipelines, power, plants, and other physical structures. This approach makes it necessary to deviate from too much concentration on demand and supply, security, risk, public acceptance, costs, and other economic and technological bits of energy systems. In these times of increasing competition for energy resources and the struggle to address challenges in the global energy system, what could be more important is to ensure justice is reflected in the way the energy system works.[183]

3.5 Conclusion

This chapter sets out a discussion on understanding global perspectives on the conceptual framework of energy justice. It discusses the often misleading facts about energy systems and their restrictions to specific areas in practice. This includes reducing energy systems to building energy infrastructures, improving energy security, developing more energy resources to meet demand and supply, and conducting research on new technologies as possible solutions to energy challenges without the need to ask whether justice principles have a role to play.[184]

The chapter further recognises that energy policies have in many ways been designed to focus on adequate supplies of energy with little regard for long-term consequences to the people and cultures the policies are intended to benefit.[185] Regrettably, this approach has led to the development of more energy systems that completely neglect the role of the energy justice framework and how it could be used to resolve contemporary challenges confronting the global energy system. In this regard, the chapter argued that decision-makers, as well as policymakers in the energy sector should be able to consider the energy justice framework,

[183] Martin Pasqualetti, Senior Sustainability Scientist, Global Institute of Sustainability. Comment on the book entitled *Energy and Ethics: Justice and the Global Challenge* by Benjamin K. Sovacool
[184] Sovacool and Dworkin, 'Energy Justice: Conceptual Insights and Practical Applications' (n 65) 441.
[185] ibid.

together with its normative standard with a view to finding whether it could help address specific aspects of energy challenges. In principle, energy decisions should be geared towards providing energy systems that are not only safe, reliable, affordable, and sustainable but also ensure just and reasonable outcomes in energy systems.

A key aspect of the analysis in this chapter is the discourse on the interpretation and application of the energy justice concept and framework from an African perspective. In this regard, the analysis focused on providing an interpretation as well as application approaches that ought to be framed from the understanding of specific energy challenges faced by African states. Here, the chapter argued that interpretations of the concept should go beyond western notions, especially as energy challenges differ between countries in the Global South and North. It submits that only with this approach we may begin to understand the role of justice in resolving challenges in the global energy system.

Lastly, to effectively ascertain the role of justice in addressing energy challenges, the chapter explored the three core dimensions of the energy justice concept and considered how they tend to manifest injustice in energy systems. The discourse culminated in the exploration of distributive, procedural, and recognition justice, particularly in the context of how they manifest injustice in the energy life cycle. Here, the present author analysed the three core dimensions in the context of specific areas and how they apply to energy systems whilst drawing out aspects of injustice manifested through them.

Having discussed the conceptual framework of energy justice from global perspectives, the next chapter examines some imperatives drawn from the literature and framework that could help not only to address energy access and poverty challenges but to also to achieve just energy systems at international and domestic levels.

CHAPTER FOUR

Energy Justice Imperatives for the Delivery of Just Energy Systems: International and Domestic Perspectives

4.0 Introduction

> A just energy system is one that is safe, reliable, fair, affordable, and sustainable for current and future generations and the natural world.[1]

Chapter three examined the energy justice concept and its framework from global perspectives, together with how it has evolved in energy literature. It also examined the three core dimensions of the concept and showed how they manifest injustices in energy systems. This chapter builds on the analysis of the concept and then draws out a set of 'imperatives' needed to not only help resolve energy challenges, but also to assist in the delivery of just energy systems. In the context of this research, and from the interpretation of the energy justice concept provided in Chapter three, the 'imperatives' are simply interventions that are needed to help embed justice in whole energy systems operation. The 'imperatives' are critically examined and used to show how energy systems can be made to be just, thereby addressing energy challenges attributed to injustices in the system. Therefore, this chapter provides an in-depth examination of the 'imperatives' needed to deliver just energy systems as part of measures to resolve energy challenges.

The question of what should 'just energy' systems look like is complex and difficult to put into context. This observation is gleaned from arguments presented by energy scholars that there is no one-size-fits-all solution to the problem of unjust energy systems.[2] This

[1] Raya Salter, Carmen Gonzalez, and Elizabeth Warner, 'Energy Justice: Frameworks for Energy Law and Policy' in R. Salter, C. Gonzalez and E. Warner (eds), *Energy Justice: US and International Perspectives* (Edward Elgar, 2018) 1-2.

[2] World Development Movement: Justice for the World's Poor: Towards a Just Energy System: The Struggle to End Energy Injustice

conception implies that a range of approaches is needed to help deliver just energy systems depending on the local context and specific needs of different national regimes and their energy sector.[3] As has been mentioned in the introductory chapter of this research, where energy systems are unjust, they become factors that contribute to energy challenges in different ways. We note that in practice there appears to be too much attention given to technical challenges in energy systems without the need to consider the role justice could play. This makes the imperatives drawn from the energy justice concept important, particularly in terms of how they could be used both to address energy challenges and deliver just energy systems.

As discussed in Chapter 3, under section 3.4, various forms of energy injustices manifesting in the global energy system produce unjust energy systems. For example, we understand that the inequitable distribution of energy benefits and burdens to people, particularly those living in rural communities both in the Global North and South constitute distributive injustice. The implication of such injustice is seen in the manifestation of people suffering from energy poverty in the form of unaffordability in the Global North and lack of energy access in the Global South. This is an issue of distributive injustice and is attributed to the establishment of unjust energy systems in different national regimes. For this reason, there is a need to analyse whether the energy justice imperatives could help to create just energy systems as part of the measures needed to address energy challenges.

The research question this chapter seeks to answer is 'to what extent can the energy justice "imperatives" be used to realise just energy systems?' In answering this question, the chapter presents a critical analysis of the 'imperatives' needed to advance the objectives of energy justice at both the international and domestic levels. The imperatives are analysed within the

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https://www.globaljustice.org.uk/sites/default/files/files/resources/wdm_energy_justice_briefing.pdf accessed 20 April 2022.

[3] ibid.

international and domestic energy systems because challenges manifesting through injustices in energy systems differ at both the international and domestic levels. Therefore, the present author distinguished the imperatives in order to cover multiple angles of relevant concepts relating to energy justice. Thus, the research will first analyse those concepts (relating to energy justice) largely found at the international level and the global energy system. Thereafter, it will move to those key concepts that are relevant to domestic energy systems. The conclusion that could be drawn is that the energy justice imperatives are necessary, not only to accelerate justice in energy systems operation, but also to address negative externalities associated with the system as a whole.

The chapter begins in Section 4.1 by examining the demands of energy justice on a range of actors, such as policymakers and regulators, individuals, national governments, companies, and Non-Governmental Organisations (NGOs). The rationale for looking at the demands on these actors is because they are the focal point upon which the energy justice pendulum swings. The realisation of justice will be through the help of the actors during the energy life cycle as these actors might reveal additional dimensions to possibility of using an energy justice approach to resolve energy challenges. This section is followed by Section 4.3 which explains the background to the selection of the energy justice imperatives. While laying out the background to the imperatives, this section also considers three stages of the global energy system – i.e., from production to consumption and then waste (including losses) and how injustices manifested through these stages affect people. The justification for looking at the three stages is because they are potential channels through which injustices are perpetrated in energy systems and where the imperatives could apply to resolve them. Next, the chapter turns to a discussion on the actual energy justice imperatives needed at the international and domestic levels (Sections 4.4 and 4.6) and, where applicable, sets out the legal threshold or criteria for meeting each imperative by an individual state. This analysis is

followed by their implications and limitations upon implementation. Finally, the chapter draws some conclusions resulting from the analysis.

4.1 The Demands of the Energy Justice Concept

This section looks at the demands encapsulated in the concept of energy justice as they relate to the key actors in energy systems operation, namely policymakers and regulators, individuals, national governments, companies, and NGOs. In other to realise the objectives of energy justice there need to be actions taken that would define energy systems operation. Thus, these actors serve as channels through which such actions are carried out in order to realise the energy justice objectives. Thus, this section looks at the role these actors could play to help realise the objectives of the energy justice concept, particularly in an attempt to deliver just energy systems.

Due to the evolving nature of the energy justice concept in the literature, it is difficult to ascertain in clear terms what constitutes its demands on relevant actors. As argued by Sovacool Sidortsov and Jones "energy justice demands that we evolve new business models and regulatory paradigms that promote inclusive and transparent planning processes, diverse resource portfolios, and energy policies".[4] However, since every action is derived from policies, perhaps such policies applicable to the energy sector should be the starting point when defining what constitutes the demands of energy justice. This approach is based on achieving justice in energy systems through policy-based actions. This section, therefore, brings together relevant actors and/or agents of energy justice with various policy roles and responsibilities that are required to help energy systems deliver 'just' and 'fair' outcomes. The next section will undertake an analysis of the demands of the energy justice concept on the relevant actors.

[4] Benjamin Sovacool, Roman Sidortsov and Benjamin Jones, *Energy Security, Equality, and Justice* (Routledge 2014) 202.

4.1.1 Policymakers and Regulators

A starting point to the discourse on whom energy justice demands are for is the responsibility placed on policymakers and regulators in the energy sector. At first sight, these actors are the most obvious set of actors of energy justice,[5] and this is because the concept is mainly a policy-oriented discourse.[6] These actors are best placed to ensure that the objectives of energy justice are met through policies, including proper incorporation and realization of the objectives in the most effective manner.

The demands placed on policymakers and regulators through the energy justice concept imply that they have a responsibility through their statutory duties to set up institutional structures that meet the energy justice standard.[7] Their role is to identify what policy tools, processes, and approaches are best suited to capture the nuances of the energy justice questions.[8] This implies that they have a responsibility to ensure policies designed to address energy challenges are framed in a way that reflects the concept of energy justice.

In terms of regulators, the concept of energy justice places certain expectations on regulators to ensure just outcomes in the operation of energy systems. Thus, through their role of energy governance and ensuring due process at all levels of energy decision-making, regulators could through laws motivate all interested stakeholders in the sector to respond to energy injustice concerns. This might entail proposing an energy justice metric to be used in decision-making at the national level – one which could be used to respond to different injustice concerns in energy systems. For example, in Mesoamerican countries namely Nicaragua, Panama and Guatemala there are regulatory and institutional framework that

[5] Aileen McHarg, 'Energy Justice: Understanding the "Ethical Turn" in Energy Law and Policy' in Iñigo del Guayo and others (eds), *Energy Justice and Energy Law* (Oxford University Press 2020) 26.
[6] ibid.
[7] ibid 26.
[8] ibid 27.

empowers regulators to provide services that result in the provision of public electricity.[9] Regulators are also required to ensure that the legal and governance structures are designed to help energy decision-makers, including consumers, focus on considerations of justice in the energy sector. McHarg argued in this regard that this approach might begin with the reform of regulator' statutory duties and new institutional structures and procedures for representing and consulting affected interests from a more holistic view.[10] The idea of placing demands on regulators is to ensure that they consider relevant justice principles whilst carrying out their responsibility as this approach would lead to just and reasonable outcomes.

From the above, policymakers and regulators may need to avoid policies that are sometimes ineffective in reaching a large percentage of the fuel poor, and which may increase rather than reduce distributive injustice in energy systems.[11] Furthermore, policymakers have the additional responsibility to address any disproportionate distribution of energy benefits and burdens between the rural and urban populations, and to undertake actions that would seek to improve the overall standard of living of people. Thus, policymakers, working at the highest levels of Government, are clearly under the strongest obligation in terms of using energy decision-making effectively to affect the lives of people for the better. By necessity, such actions include long-term planning which engages fully with all key areas that intersect with energy policy. For example, drawing on other related aspects of the energy production lifecycle, the energy justice concept requires policymakers to take energy decisions that would ensure that activities in the industry, especially as they relate to production, do not create negative impacts on the environment. The point here is that based on the energy justice concept, policymakers would have a responsibility to embed energy justice principles in

[9] José Juan González, 'Energy Justice, Law, and Poverty in the Context of Mesoamerican Countries' in Iñigo del Guayo and others (eds), *Energy Justice and Energy Law* (Oxford University Press 2020) 300.
[10] McHarg (n 5) 26.
[11] Ross Gillard and others, 'Advancing and Energy Justice Perspective of Fuel Poverty: Household Vulnerability and Domestic Retrofit Policy in the UK' (2017) 29 Energy Research and Social Science at 55, 57-8.

policy-making processes, and perhaps the best way to achieve this being to take a holistic, justice-based view in energy decision-making. This should be seen to be clear for those whom the policy is meant to benefit, but more importantly, ensuring that they receive sufficient funding for execution.

4.1.2 Individuals

Energy justice places some form of ethical 'responsibilities' on citizens that help to guide them towards making informed energy decisions. For example, responsibilities relating to the 'ethical consumption' of energy can empower citizens to take greater and reasonable control over their own use of energy, thus putting them in a position to make informed energy decisions.[12] Here, the demands of energy justice addresses questions and concerns relating to individual ethical or unjust behaviour toward the use of energy.[13] The idea of energy justice responsibilities on individuals means making energy decisions that take into account those that may be affected by irrational use of energy. For example, as individuals, we have a moral responsibility to ensure that our energy consumption and use is not higher than is required for our daily activities. This conception is useful in furthering the energy justice concept,[14] especially as we note that unethical consumption of energy could have impact not only on the environment but also on other energy users. The discourse here is largely related to consumer cultures and the justice implications linked to peoples' way of life, consumerism, and responsibility with regards to production, consumption, and waste practices.[15]

It is important to note that there is a part to be played by those whom energy laws and policies are designed for, including producers and consumers. For example, laws and policies

[12] Aladine Joroff, 'Energy Justice: What It Means and How to Integrate it into State Regulation of Electricity Markets' (2017) 47 Environmental Law Reporter 10929.
[13] Sarah Marie Hall, 'Energy Justice and Ethical Consumption: Comparison, Synthesis and Lesson Drawing' (2013) 18 (4) Local Environment 422-437.
[14] ibid 422.
[15] ibid.

relating to any sector are designed and administered for the benefit of all people in any state. However, those who are unaware of the impacts of their actions in relation to the energy sector for example, make the most important energy decisions.[16] As succinctly described by Sovacool and Dworkin, each of a hundred million individuals may decide to turn on a light switch, yet none of them may be aware of the effect of such a decision as it will lead to the production of more energy, a rise in economic costs, cause reliability risks by straining existing transmission systems, and raise environmental costs through demands that may cause the flooding of a valley for a dam, drilling deeper for gas or petroleum, or to burn enough coal that kills thousands through accelerated lung diseases caused by breathing particulate emissions.[17] The same goes for an individual that adopts an unnecessary energy-intensive lifestyle without considering the implications of the carbon footprints on the climate.

This notion that energy justice places responsibilities on individual consumers (even as a family) and how they make energy choices and the way they use energy is important.[18] This is because individual consumers could be seen to have gained much social and civic responsibility through the promotion of fair and ethical practices, and the ability to turn away from polluting oil companies with poor environmental records. However, this consumer awareness approach does not appear to be the most effective tool to achieve energy justice as most consumers will ideally choose the cheapest or most convenient product. Although, there are now regulations and policies that take some of the individual choices away, for example, in the EU there are policies to promote energy efficiency through appliance certification schemes that ensure that the worst-performing appliances are being removed from the market, thereby leaving a more energy-efficient range of products for consumers to choose

[16] Benjamin Sovacool and Michael Dworkin, *Global Energy Justice: Problems, Principles, and Practices* (Cambridge University Press, 2014) 26.
[17] ibid 26.
[18] Fiona Shirani and others, 'Disconnected Futures: Exploring Notions of Ethical Responsibility in Energy Practices' (2013) 18 (4) Local Environment 455-468.

from.[19] One could argue that policies that tend to promote energy efficiency measures, leveraging individual abilities to 'do the right thing' is one way of getting consumers to understand the demands of energy justice.

A final point to note here is some of the advantages of the energy justice demands on individuals by way of the responsibilities placed on them. Therefore, where individuals are more cautious of their energy decisions, particularly in terms of their choices and consumption, there is a chance that more energy will be conserved, thus making more energy available for use by others and beneficial to everyone. Additionally, the idea of energy justice responsibilities increases the prospects of individuals themselves becoming full beneficiaries of what the concept offers. This is because the responsibility placed on individuals can be advanced by duty-based ethical theories that focus on motivations for ethical behaviour in energy consumption.[20] However, a major challenge with the responsibilities on individuals is the absence of any form of legal mechanisms to implement them. For example, those responsibilities relating to ethical consumption of energy are sometimes difficult to implement due to our individual lifestyle. This is because the energy justice demands in this context appear to be more reliant on voluntary acceptance rather than being imposed with sanctions on individuals. Notwithstanding, there are some legal mechanisms to ensure people don't use too much energy, including capping them at a certain rate and raising the charges for energy use that goes over a certain level. Also, consumer campaigns and smart meters could be used to put individuals in check and to see how much people have used, thus providing some measures on how to get people to buy less carbon-intensive products.

[19] DIRECTIVE 2012/27/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL October 2012 https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF accessed 25 July 2022.

[20] Hall 'Energy Justice and Ethical Consumption' (n 13) 433.

4.1.3 National Governments

An important feature of the demands of energy justice is in relation to the responsibilities placed on national governments. For instance, energy justice places a responsibility on national governments to provide an enabling environment so that its objectives can be achieved through investments in the energy sector. In energy practice, national governments are responsible for making, implementing, and enforcing energy laws and policies. They have the authority to allocate responsibility nationally amongst organisations, businesses, and other lower levels of government.[21] Therefore, governments are responsible for ensuring the energy justice process is effectual from promulgation to enforcement of laws and policies in every sector of the economy.[22] The energy justice concept, therefore, demands that national governments consider enacting justice-based energy laws and policies that would help both in the realization of just energy systems and addressing other aspects of energy challenges such as access. This approach will include addressing energy challenges relating to the negative externalities associated with energy systems such as environmental impacts arising from production.

Part of the demands of energy justice on national governments is that they are to ensure universal access to energy for all. Unfortunately, there are no legal obligations on national governments to ensure citizens' rights to energy access or to provide universal energy access.[23] Focusing on the right to development, also described as the right to energy access, it is apparent that such right only exists indirectly under international law by virtue of soft law

[21] John C. Dernbach and Donald A. Brown, 'The Ethical Responsibility to Reduce Energy Consumption' (2009) 37 Hofstra Law Review 985-1006, 1003.
[22] Tedd Moya Mose, 'Actors in International Energy Law' (2018) 16 (3) OGEL p.4 www.ogel.org accessed on 10 February 2022.
[23] Adrian Bradbrook, Judith Gardam and Monique Cormier, 'A Human Dimension to Energy Debate Access to Modern Energy Services' (2008) 26 Journal off Energy Natural Resources & Environmental Law 526; Yinka Omorogbe, 'Policy, Law and the Actualization of the Right of Access Energy Services' in Kim Talus (ed) *Research Handbook on International Environmental Law* (Edward Elgar 2014) 361; Adrian Bradbrook and Judith Gardam 'Placing the Access to Energy Services within a Human Rights Framework (2006) 28 Human Rights Quarterly 389.

instruments.[24] The arguments on the right to energy access have continued to gain attention in academic literature, but are relatively rare due to a lack of commonly agreed conceptual framework.[25] This argument is made particularly to enhance our understanding of the potential of human rights to accelerate energy access.[26] However, to achieve a human right to energy access, there needs to be conscious efforts by national governments through the enactment of specific legislation, perhaps framing it from a human rights perspective to ensure the delivery of energy access. This approach would put national governments in a position to meet the demands of energy justice that is more likely to be understood by citizens.

4.1.4 Companies

Just as individuals and governments have responsibilities in relation to the demands of energy justice, similarly, energy companies – that is multinational corporations (MNCs) and energy-related businesses operating in the field of energy have a role to play in ensuring just outcomes in energy systems. We note that multinational corporations in the energy sector have a huge amount of power and it is a widely held belief that they as an industry need to change.[27] They constitute powerful forces capable of generating economic growth, reducing poverty, and increasing demand for the rule of law, thereby contributing to the realisation of a broad spectrum of human rights.[28] Perhaps the change that is needed is in relation to their operations which have negative environmental impacts. This notion is mainly discussed in business and human rights debates, especially as it relates to wrongful acts of companies

[24] Adrian Bradbrook, 'Achieving Access to Modern Energy Services: A Study of Legal Strategies' in Yinka Omorogbe and Ada Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 43.
[25] Chian-Woei Shyu, 'A Framework for "Right to Energy" to meet UN SDG7: Policy Implications to meet Basic Human Energy Needs, Eradicate Energy Poverty, Enhance Energy Justice, and uphold Energy Democracy' (2021 79 Energy Research & Social Science 102199.
[26] Margaretha Wewerinke-Singh, 'A Human Rights Approach to Energy: Realizing the Rights of Billions within Ecological Limits' (2021) 31 Review of European, Comparative & International Environmental Law 16-26.
[27] John G. Ruggie, 'Protect, Respect and Remedy: A Framework for Business and Human Rights' (2008) OGEL 3 (6) www.ogel.org accessed 10 May 2022.
[28] ibid.

against the environment in the course of their operations.[29] However, in practice, energy companies as actors of energy justice do not necessarily have the power to make laws or policies, but over time have had a real impact on the energy sector in many states.[30] However, due to the importance of energy companies to the economy of states, the legal regime leaves them with considerable freedom to invariably act justly or unjustly.[31] Regrettably, this idea of freedom continues to affect the way energy companies make decisions, thus making them fail to make decisions anchored in justice. For example, decisions relating to the siting of energy projects or where to invest in energy infrastructure in many states in developing economies is not necessarily based on justice but economic interest, and often regardless of the impact on host communities. This is manifested due to governance gaps that provide the permissive environment for wrongful acts by companies of all kinds without adequate sanctioning or reparation.[32] The point is that the responsibilities placed on energy companies, relate to one that requires them to create supportive and enabling conditions or an environment for the pursuit of justice in energy systems.[33]

4.1.5 Non-Governmental Organisations (NGOs)

A discussion on the demands of energy justice is incomplete without exploring the role of NGOs in the quest to develop a more just energy system. Presently, in modern day energy practice, NGOs have often assumed the responsibility of a watchdog, especially on how energy companies carry out their operations. This has led to critical observations of whole energy systems, particularly from the perspective of production and consumption as questions

[29] Damilola Olawuyi, 'Corporate Accountability for Natural Environment and Climate Change' in Ilias Bantekas and Michael Ashley Stein (eds), *The Cambridge Companion to Business and Human Rights Law* (Cambridge University Press 2021) 234.
[30] Mose, 'Actors in International Energy Law' (n 22).
[31] McHarg (n 5) 28.
[32] Ruggie (n 27)
[33] Ralitsa Hiteva and Benjamin Sovacool, 'Harnessing Social Innovation for Energy Justice: A Business Model Perspective' (2017) 107 Energy Policy 631-639.

of justice have largely been directed towards the above two distinct areas.[34] The goal is to ensure that through advocacy and activism energy systems minimise, or do not deliver, injustices in the sense that the negative effects of policies particularly affect a certain, marginalised group of people.

Interestingly, the channel of NGOs' advocacy and activism has been used by communities with people of colour in the United States for more than 500 years to push for environmental justice.[35] For developing countries, such as Nigeria, NGOs have been instrumental through their advocacy and activism to highlighting the need for environmental justice.[36] Similarly, we need strong NGO advocacy and activism on the energy justice issue.

The focus of NGOs, therefore, is mainly manifested through actions undertaken by way of activism and advocacy movements toward the pursuit of energy justice. This focus, which is now an important part of justice scholarship and activism, is described as 'normative claims' designed to motivate social mobilization on energy justice.[37] The demands of energy justice on NGOs are framed along the lines of moral obligations with the aim to provide active support to a particular issue often through mechanisms such as engagement in policy-making and holding governments and other actors to account.[38] As opined by Fuller and McCauley, the NGOs seek to create change through direct actions such as protests that would in turn lead to the delivery of energy justice.[39]

[34] Sara Fuller and Darren McCauley, 'Framing Energy Justice: Perspectives from Activism and Advocacy' (2016) 11 Energy Research & Social Science 1-8.
[35] Charles Lee, 'Developing the Vision of Environmental Justice: A Paradigm for Achieving Healthy and Sustainable Communities' (1994-5) 14 Virginia Environmental Law Journal 571-8.
[36] Eghosa Ekhator, 'Improving Access to Environmental Justice under the African Charter on Human and Peoples' Rights: The Roles of NGOs in Nigeria' (2014) 22 (1) African Journal of International and Comparative Law 72.
[37] Fuller and McCauley (n 34) 5.
[38] ibid.
[39] ibid.

In sum, whatever form the demands of energy justice take, the key actors with responsibility for their implementation and oversight include national governments, policy makers and regulators, individuals, energy companies and NGOs. It is pertinent to note that under the concept of energy justice, there is a responsibility placed on these actors to ensure that energy systems produce just and reasonable outcomes.

4.2 The Implications of the Demands of Energy Justice on the Actors

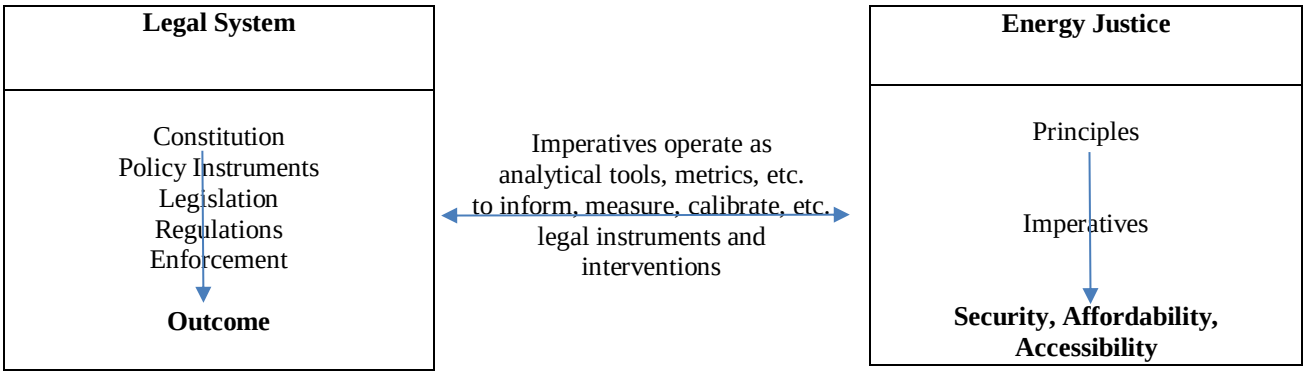
The discussion on the demands of energy justice shows that the global energy system through human actions perpetuates vast inequalities that need to be addressed.[40] In practice, there is a wide range of human actions that cause both just and unjust outcomes in global energy systems.[41] These human actions are mainly in the form of different individual lifestyles and choices, as they relate to the use of energy. The actions of people, particularly in the way they interact with energy, including its use, make the discourse on the demands of energy justice important. This makes the argument on the demands of energy justice placed on individuals, companies, policy makers and regulators, and national governments important. In principle, the idea is to ensure that the actors take justice-based actions in their interactions and use of energy. These enduring actions provoke aspects of equity and morality that are seldom explicit in energy planning and analysis.[42]

Overall arguments on the demands of energy justice remains a call to ensure that principles derived from the energy justice concept are reflected in the energy systems through the roles and responsibilities of the various actors. Thus, the principles need to be taken into account by policy makers in the process of formulating energy policies, who also need to ensure that

[40] Sovacool and Dworkin, *Global Energy Justice* (n 16) 32.
[41] Elinor Ostrom, 'Polycentric Systems for Coping with Collective Action and Global Environmental Change' 20 (2010) Global Environmental Change 550-557; See also Benjamin Sovacool, 'An International Comparison of Four Polycentric Approaches to Climate and Energy Governance' (2011) 39 (6) Energy Policy 3832-3844; Michael Dworkin, Roman Sidortsov and Benjamin Sovacool, 'Rethinking the Scale, Structure and Scope of U.S Energy Institutions' 142 (1) 2013 Journal of the American Academy of Arts and Sciences 129-145.
[42] Sovacool and Dworkin, *Global Energy Justice* (n 16) 4.

that they are realised through the other actors.[43] It is pertinent to add here that this research acknowledges the centrality of energy to economic growth and development and the responsibility on the principal actor (i.e. national government) to provide universal energy access and services.[44] This research equally acknowledges the importance of others actors, such as citizens, policy makers and regulators, and NGOs and the role they have to play in meeting the demands of energy justice. In practice, they all have to align their actions relating to energy systems with the energy justice demands in order to realise just energy systems.

Figure 4.1 *This table shows that the energy justice framework can operate in parallel to a legal system.*



4.3 Energy Justice Imperatives: Background

This section will draw out a set of 'imperatives', or requirements, from the energy justice concept and literature that will be the focus of the author's analysis in Nigeria in Chapter five. There is a wealth of academic writing and analysis on energy justice, and various ways of configuring the various elements. For the purposes of this research, this author will provide a background context to the energy justice 'imperatives' drawn from the concept, what they are, and why the author has selected the ones that are needed to help achieve just energy

[43] Ramazan Sari and others, 'Energy Justice – A Social Sciences and Humanities Cross-Cutting Theme Report (2017) Cambridge, Shape Energy <https://shapeenergy.eu/wp-content/uploads/2017/09/SHAPE-ENERGY_ThemeReports_ENERGY-JUSTICE.pdf> accessed 13 May 2022.
[44] Michael Carnegie LaBelle, 'In Pursuit of Energy Justice' (2017) 107 Energy Policy 615-620.

systems at the international and domestic level. Further, it will examine three main stages of the global energy system, namely: (i) production, (ii) supply and consumption, and (iii) waste (losses) that are critical when discussing the energy justice imperatives. The author examines the three stages because they present opportunities for decision-makers, as well as policy makers to think through how to use the imperatives to address energy challenges associated with the stages. The idea here is to identify areas within the three stages of the global energy system where injustices are manifested and find whether the energy justice imperatives could be implemented to address them.

The term 'energy justice imperatives' for this research is used to mean the constitutive elements derived from the energy justice concept and its framework. In energy practice, the 'imperatives' could serve as a guide for policymakers and decision-makers to think through how to design and implement energy law and policy frameworks to deliver energy justice. The imperatives are, therefore, set out and analysed in this chapter with a view to understanding what is needed not only to address energy access and poverty challenges but to achieve just energy systems both at the international and domestic levels. More so, they will help states to improve their energy situation, thus helping states to overcome many intractable energy challenges.

A key distinct feature of the imperatives is that they can operate in parallel to a legal system, particularly from a constitutional perspective (See fig 4.1 above). For example, individual States through relevant agencies can engage and leverage the imperatives through a legal system that is founded on the following channels, i.e., the Constitution – Policy instruments – Legislation – Regulations – Enforcement. In this regard, the imperatives would be operating as analytical tools to drive legal instruments and interventions with the aim of ensuring energy security, affordability, and access, thus helping to achieve energy justice. This implies that the relevant actors (as identified above) could use the imperatives to find new solutions

to energy access and poverty challenges. This further implies that the imperatives are essential elements relating to different aspects of energy systems that governments, policy makers and decision-makers need to consider in their quest to resolve energy access and poverty challenges. The imperatives will be used in this research to indicate criteria or as a form of threshold to be met by States in order to help achieve energy justice.

Building on the work of Sovacool *et al* in Chapter three, the energy justice 'imperatives' are (1) just consumption of energy; (2) transparency and accountability; (3) sustainable development; (4) energy access and services; (5) just energy institutions; (6) energy efficiency and conservation; (7) anti-corruption and democratic participation; (8) inter-generational and intra-generational equity, (9) human rights-based energy decisions and (10) energy democracy. The rationale for selecting these energy justice imperatives is because of their connection to contemporary energy challenges faced by different national regimes. The imperatives constitute key aspects of energy systems where challenges tend to emerge from, and so they are prioritised here as a step towards the articulation of providing just energy systems.

The analysis on the energy justice imperatives is drawn from their importance towards achieving just energy systems and their capacity and influence to address contemporary energy access and poverty challenges. As the research progresses, the author will demonstrate in a context-specific way relating to the Nigerian situation how the imperatives are useful to addressing energy access and poverty challenges. In this regard, the author will show in Chapter 5 how these imperatives could be leveraged to not only address Nigeria's energy access and poverty challenges but to also help the country deliver just energy systems.

As stated earlier, the global energy system is already seen to be perpetrating different forms of injustice in the energy life cycle, particularly through the dimensions of energy justice

discussed in chapter three – under section 3.4. This observation is gleaned from analyses of policy and technology that show how the energy system at the global level promotes inefficiencies and inequalities connected to energy supply, conversion, and end-use.[45] For many states, including developed and developing ones, these inefficiencies are associated with different forms of injustice that exacerbate energy access and poverty challenges. For example, on the issue of consumption patterns, it is argued that countries in the Global North have an ethical responsibility to reduce energy consumption and use.[46] This argument implies that there is a moral responsibility on the part of countries in the Global North to do more to reduce their energy consumption.[47] Applying the energy justice imperative here would suggest that more action is needed to address disproportionate energy consumption patterns existing between countries in the Global North and South – one that continues to perpetuate injustice in the global energy system.

Before delving further into the energy justice imperatives, perhaps it is appropriate to first consider the three main stages of the global energy system. This approach is informed by the recognition that these three stages have significant impacts on how justice principles could affect energy systems.[48] At the same time, a critical look at the three stages of the global energy system offers opportunities to decision-makers, as well as policy makers to think through how to address energy injustices manifesting within the operation of the three stages. An examination of the three stages of the global energy system is undertaken below.

[45] Sovacool and Dworkin, *Global Energy Justice* (n 16) 90.
[46] Dernbach and Brown 'The Ethical Responsibility to Reduce Energy Consumption' (n 20) 985-1006.
[47] ibid 985.
[48] Benjamin Jones, Benjamin Sovacool and Roman Sidortsov, 'Making the Ethical and Philosophical Case for "Energy Justice' (2015) 37 (2) Environmental Ethics 145-168; Darren McCauley, *Energy Justice: Re-Balancing the Trilemma of Security, Poverty and Climate Change* (Palgrave Macmillan 2018) 1.

4.3.1 Stages of the Global Energy System

This section will analyse the three major stages of the global energy system that are integral to understanding the energy life cycle, namely: production, supply and consumption, and waste (losses). In energy practice, these three stages make up the entirety of the energy life cycle. The purpose of their analysis is to show how they could serve as a useful channel to some of the actors to think about how to implement the energy justice imperatives in energy systems.

4.3.1.1 Energy Production

According to the International Energy Agency (IEA), fossil fuels continue to dominate the world's energy systems.[49] This dominance has resulted in the over-reliance of today's global societies on the historically embedded production systems of fossil fuels to satisfy the growing demands of energy.[50] In practice, this issue remains a key challenge in the energy sector as it has forced states to continuously rely on fossil fuel-based energy sources for the sustainability of their economy. However, the reliance on fossil fuels may be attributed to the fact that they are quite cheap in comparison to developing the technology to create new ways of producing other non-carbon-based energy.

Reports from the IEA show that the world is producing fossil fuel energy at over double the rate of output today than it did in 1973.[51] In 2016 alone, it was reported that oil, coal, and gas amounted to 86% of the world's energy supply, experiencing only a small drop from 90% in 1973.[52] Biofuels and waste lead the primary non-fossil fuel sources with around 0.1% of the

[49] See the International Energy Agency, *World Energy Statistics* 2016, 1-786. Paris: IEA. https://iea.blob.core.windows.net/assets/680c05c8-1d6e-42ae-b953-68e0420d46d5/WEO2016.pdf accessed 15 May 2022.
[50] McCauley, *Energy Justice Re-Balancing the Trilemma* (n 48) 3.
[51] IEA 2016 (n 49)
[52] ibid.

world's energy supply.[53] In terms of Nuclear energy, this has generated the most prominent low-carbon source of energy at around half the output of biofuels and waste.[54] However, nuclear energy waste presents a grave danger as its toxic effects and negative environmental consequences can last for a significant number of years and may leave a larger footprint on landscapes and ecosystems than conventional energy.[55] For hydropower, it is observed that this energy source produces over three times the energy generated from solar, tide, and wind power combined.[56] The point emphasised here is that we are living in the age of a carbon-based global economy, and its dominant nature is beginning to spread to the near future. It is, therefore, safe to conclude that by 2035, fossil fuel energy may continue to hold 80% of the total global energy supply.[57] This has made fossil fuel to remain dominant in the global energy system, thus making the system more susceptible to continuing to deliver energy injustice. Perhaps, in large part, the growing energy injustice relating to production in the system as discussed above is attributed to heavy reliance on fossil fuels.

4.3.1.2 Energy Supply and Consumption

As regards the global supply and consumption of energy, perhaps the starting point is to look at the rate of energy consumption which is largely disproportionate between the developed and the developing world. The disproportionate consumption is viewed in a way where richer countries with a higher GDP tend to use more energy per capita than poorer countries. However, this observation is due to the heavy reliance on fossil fuels for the growth of the world economy without equal attention being given to the development of low-carbon energy. The combined effect of this is that the global energy system is now seen to be skewed

[53] ibid.
[54] ibid.
[55] Sovacool and Dworkin, *Global Energy Justice* (n 15) 136; Robert L Glicksman, 'Solar Energy Development on the Federal Public Lands: Environmental Trade-Offs on the Road to a Lower Carbon Future' (2011-12) 3 San Diego Journal of Energy & Climate Law 107, 114.
[56] IEA 2016 (n 49)
[57] McCauley, *Energy Justice: Re-Balancing the Trilemma* (n 48) 4.

towards the exploitation of carbon-based energy, which sadly to date remains a catalyst for various forms of energy injustice manifesting in the system.[58]

A further effect of the over-reliance on carbon-based energy sources for the continuous growth of the world economy is that it has resulted in inefficient supply (even with renewable sources) to satisfy other human needs.[59] Regrettably, the inefficiency in supply has had a far greater impact on countries in the Global South, consequently stalling economic growth in the developing world. Evidence of the supply inequality to other human needs may be seen in the comparative level of residential-based consumption, which is less than a quarter of the world's total energy consumption.[60] This anomaly is due to energy consumption for transportation that is around double that of residential-based consumption, especially as road transport fuels are said to be dominated by oil, and account for 77% of transport-based energy consumption.[61] McCauley argues that two-thirds of the world's fuel consumption is attributed to be in industry and commerce and this is due to the world's fossil fuel-based systems of production and consumption that are designed to meet the requirements of industries, commerce, and the global economy rather than securing other energy-based human needs.[62]

According to the IEA, projections show that energy production and consumption will continue to grow in the next 20 years.[63] More specifically, the energy consumption rate is expected to increase by 25-34%, whilst the world's population will be likely to reach 8.8

[58] Sovacool and Dworkin, *Global Energy Justice* (n 16) 29.
[59] McCauley, *Energy Justice: Re-Balancing the Trilemma* (n 48) 4.
[60] ibid 4.
[61] ibid 5.
[62] ibid 5.
[63] See International Energy Agency 2015, *World Energy Outlook.pdf*. Paris OECD; BP 2017. *Energy Outlook*, 2017 ed. London: BP; Bloomberg New Energy Finance (BNEF) 2016. *New Energy Outlook*: *Powering a Changing World*. London: BNEF, and Energy Information Administration (EIA) 2017. *Annual Energy Outlook* 2017: *With projections to 2050*. Washington, DC: EIA

billion and GDP doubling.[64] From these projections, fossil fuels will continue to be the world's leading energy source. The focus on fossil fuels could make the global energy systems more complex, with a potential increase of injustices due to the low concentration of other non-conventional energy sources, which have the capacity to change the narrative.

4.3.1.3 Energy Wastage (and Losses)

In terms of energy waste (and losses), firstly, this amounts to the main losses during the generation of energy, and secondly, waste from resource extraction or transformation.[65] In practice, extracting and burning fossil fuels to produce electricity releases carbon dioxide and other heat-trapping greenhouse gases, as well as local air pollutants.[66] Regrettably, it also yields a lot of waste as two-thirds of the energy in fossil fuels is lost – vented as heat – at most power plants in the world.[67] This waste heat is a by-product of generating energy, as part of the thermodynamic process.[68]

Typically, a standard power plant burns three units of fuel to generate just one unit of electricity.[69] Electricity travels from power plants to communities through high-voltage transmission lines. This observation implies that to reach consumer homes, it must cover a certain number of long distances which may result in losing power along the way.

Interestingly, there is a further dimension of energy wastage in the system. This appears to be an attitudinal problem, i.e. a culture of energy wastage which constitutes a form of energy injustice existing between the rural and urban population in a state. Regrettably, this attitude remains a culture in many developing states, particularly in Africa. For example, countries in

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[64] See British Petroleum *Energy Outlook*, 2017 ed. London: https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2017.pdf accessed 25 August 2022.
[65] McCauley, *Energy Justice: Re-Balancing the Trilemma* (n 48) 20.
[66] See Environmental Defense Fund (EDF) *6 Ways to Cut Big Waste in Our Energy System* <https://www.edf.org/card/6-ways-cut-big-waste-our-energy-system> accessed 25 May 2022.
[67] ibid.
[68] ibid.
[69] ibid.

sub-Saharan Africa experience energy wastage due to certain consumer behaviours towards energy consumption. This is manifested through daily interactions with energy use that is devoid of sustainable consumption practices. The unsustainable consumption practice is largely attributed to the low level of knowledge on the efficient use of energy in African countries. To this extent, it is observed that energy inefficiency remains one of the major contributing factors to energy wastage and losses affecting energy systems. The attitude of wastage (and losses) that could have been avoided remains a factor exacerbating the energy crisis in many African countries.[70] Energy wastage (and losses) in energy systems from the process of production to final consumption (that is, across the energy life cycle) plays a vital role in understanding the operations of the global energy system especially in terms of the creation and delivery of injustice.

4.3.2 The Implications of Injustice in the three Stages of the Global Energy System

Clearly, from the analysis above, we see how the three main stages of the global energy system are capable of manifesting different forms of inequalities (energy injustice), that need to be addressed.[71] Regrettably, these issues have led to the generation and reinforcement of distributional inequalities, misrecognition, and largely unfair processes in energy systems.[72] Additionally, despite the negative externalities from fossil fuel-based energy systems, the over-reliance of present global societies on fossil fuel to satisfy the growing energy demands in many countries persists.[73] Consequently, this has led to increasing climate change impacts on the world's environment, with very different severity and frequency of impacts felt around

[70] Julia Kennedy-Darling and others, 'The Energy Crisis of Nigeria: An Overview and Implications for the Future' (2008) University of Chicago <http://franke.uchicago.edu/bigproblems/Energy/BP-Energy-Nigeria.pdf> accessed 20 June 2022. For instance, it is reported that between 30 and 35% of power generated in the Nigerian power station is lost in transmission. For more details on this, see Jekwe Ikeme and Obas John Ebohon, 'Nigeria's Electric Power Reform: What should for the key objectives' (2005) 33 (9) Energy Policy 1213-1221.
[71] Paul Stern, Benjamin Sovacool and Thomas Dietz 'Towards a Science of Climate and Energy Choices (2016) 6 Nature Climate Change 547-555.
[72] McCauley, *Energy Justice: Re-Balancing the Trilemma* (n 48) 19.
[73] ibid 3.

the world.[74] In terms of consumption, we also note the implication of energy injustice perpetrated through consumption, especially in the form of leaving at least two-thirds of the world's final consumption of energy to industry and commerce.[75] The injustice delivered here is in the form of continuous operation of the global energy system to meet the requirements of the industry and commerce, and the growth of the world's economy with less focus on other human energy needs. Particularly, this approach constitutes a challenge for developing countries with fewer industries overall, and fewer still that would consume such huge amounts of energy as companies in developed countries.

Lastly, we note the implication of energy waste and its impact on the world's environment. Evidently, waste from energy production and consumption from fossil fuels, especially through the release of GHGs into the atmosphere is responsible for disasters such as ocean pollution, ozone layer depletion, local atmospheric air pollution, and climate change.[76] It is not in doubt that these disasters constitute climate injustice generated from the energy sector and is mainly created by those in developed countries.[77]

In summary, the energy justice imperatives offer opportunities both at the international and domestic levels to address injustices associated with the three stages of the global energy system. However, to achieve justice, there is a need for national governments as well as policymakers to first identify existing injustices that spread through these stages and second, move to achieve fairness as justice, which is viewed as one of the most general of all choices

[74] Intergovernmental Panel on Climate Change (IPCC): Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. (Cambridge University Press 2022). doi:10.1017/9781009325844.
[75] McCauley, *Energy Justice: Re-Balancing the Trilemma* (n 48) 5.
[76] Special Report of the Intergovernmental Panel on Climate Change (IPCC) *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (Cambridge University Press 2012) https://www.ipcc.ch/site/assets/uploads/2018/03/SREX_Full_Report-1.pdf accessed 20 August 2022.
[77] Benjamin K. Sovacool and others, 'Energy Decisions Reframed as Justice and Ethical Concerns' (2016) 1 Nature Energy 4.

as propounded by Rawls.[78] In the next section, this research sets out the energy justice imperatives that could be used to resolve energy challenges at the international level.

4.4 Energy Justice Imperatives: International Level

A discussion on what should constitute the energy justice imperatives at the international level is perhaps difficult to put into context. This is because the imperatives cut across different aspects of energy systems both at the international and domestic level. Notwithstanding, the present author will draw out key imperatives from the energy justice scholarship that are best placed by reason of their function in achieving just energy systems. It is important to note that the imperatives to be identified and discussed at the international level can still apply at the domestic level. However, they are analysed at the international level because when they are engaged by energy justice actors in the operation of energy systems, they present opportunities to facilitate the realisation of just energy systems at the international level. Additionally, this set of imperatives are analysed at the international level in order to give much depth to all of them listed and to ensure that they are discussed from multiple angles. This would present opportunity to first analyse key concepts in energy scholarship found largely at the international level.

A further justification for why this set of imperatives is discussed at the international level is due to the present set-up of the international energy law and policy framework. The framework at the international level is set up based on a functional approach to different rules and regulations relevant to energy activities throughout the energy lifecycle.[79] Within the energy lifecycle - i.e., from production to consumption the set of imperatives for the

[78] John Rawls, *A Theory of Justice* (Harvard University Press 1971) 12.

[79] Ernst Nordtveit, 'International Energy Law in Perspective: The Relationship between National and International Energy Law' in Tina Soliman Hunter and others (eds), *Routledge Handbook of Energy Law* (Routledge 2020) 42.

international level permeate energy systems and can help to address injustice manifested at the global level.

It is important to note at this juncture that the practicability of realising just energy systems at the international level should start by setting out parameters that would help to achieve the objectives of the imperatives in global energy systems operation. To do this, the author will begin by: (1) defining the imperatives for the international level; (2) examine how they can be achieved in practice by looking at a set of criteria or thresholds that are to be met for energy systems operation where applicable; (3) consider the extent to which the imperatives raise legally binding obligations on states to enforce them. The discussion now turns to the imperatives needed for energy systems at the international level.

Figure 4.2 *Summary of energy justice imperatives at the international level*

Energy Justice Imperatives	**Key aspects**
Just consumption of energy	Practice of just and ethical consumption by end-users (both for countries in the global north and south)
Transparency and accountability	Means that energy systems should be transparent with increased visibility and access to information available to end-users
Energy efficiency and conservation	Practice of having more energy-efficient appliances and technologies which help to conserve energy and for protection of the environment
Sustainable development of energy	Means incorporating sustainable development principles in energy sectors and energy development practices
Inter-generational and intra-generational equity	Means that energy systems benefits should be equitably distributed not only within the present and future generations but also within the existing generation
Anti-corruption and democratic participation	Means that energy systems should be devoid of corruption and discourses that misrepresent communities

Source: *Authors' compilation*

4.4.1 Just Consumption of Energy

The theories underpinning ethical consumption of energy and energy justice have in the past been somewhat disconnected.[80] This is because scholars in this field did not first recognise that justice issues could arise from the way energy is consumed by different people. However, energy scholars have argued that there is now research potential showing that ethical consumption might be useful to further understand the concept of energy justice.[81] This is because there is a wide range of justice implications from energy consumption,[82] including the ethical implications.[83]

Over the years, there has been a growing interest in the implications of unjust energy consumption in the global energy system.[84] While it is believed that the practice of just consumption of energy can enhance the realisation of just energy systems, perhaps the starting point to achieving that is to identify who is using the energy in a way that is seen to be unjust. Arguably, the high consumption of energy in developed countries has all too often been unquestioned even in the face of its negative effects on the climate.[85] This observation blends well into the debate on ethical issues associated with energy consumption, which appear to have received less attention.[86] Against this background, it is useful to identify relevant actors involved in unethical energy consumption - i.e., lifestyles that lead to excessive consumption of energy.

Presently, there is an argument that developed countries need to reduce their energy consumption, albeit this is driven logically by the need to address climate change through the

[80] Hall 'Energy Justice and Ethical Consumption' (n 13) 422.
[81] ibid.
[82] Gordon Walker and Rosie Day, 'Fuel Poverty as Injustice: Integrating Distribution, Recognition and Procedure in the Struggle for Affordable Warmth (2012) 49 Energy Policy 69-75.
[83] Sarah Marie Hall, 'Exploring Everyday Ethical Consumption: An Ethnography of the Ethics of Family Consumption' (2011) 42 (6) Geoforum 627 –637.
[84] Hall 'Energy Justice and Ethical Consumption' (n 13) 422.
[85] Dernbach and Brown 'The Ethical Responsibility to Reduce Energy Consumption' (n 21) 986.
[86] ibid 987.

reduction of GHGs.[87] Nevertheless, their energy-intensive consumption lifestyle (including excessive consumption by individuals) remains an injustice even beyond the issue of climate change, especially when this is looked at from the perspective of disproportionate energy-consumption activities existing between developed and developing countries. For example, the U.S is often singled out in discussions on unethical energy consumption, having to deal with the cultural problem of excessive consumption, which is seen as a long-standing problem in U.S society.[88] This problem has led to the call for developed countries to establish replicable models of lifestyle that are based on considerably lower energy consumption in order to foster sustainable development, and reduce adverse climate change impacts on developing countries.[89]

Energy injustice arising from consumption patterns is an ethical issue not a technical one, and a cultural issue rather than an economical one – that is to say, the ethical concerns of energy consumption are important to the realisation of just energy systems.[90] The issue is the over-consumption of energy, which is dichotomised into developed and developing country contexts and their (current and future) access to resources.[91] From a justice perspective, there is a moral obligation on the part of developed countries to reduce their consumption, particularly through energy efficiency and conservation measures.[92]

There is an ethical responsibility on developed countries, therefore, to discourage unethical behaviour of energy consumption and promote just consumption of energy because they are seen to be using more than their 'fair share' of energy.[93] For instance, when the average

[87] United Nations Framework Convention on Climate Change art. 3, May 9, 1992, 1771 U.N.T.S 107. https://unfccc.int/resource/docs/convkp/conveng.pdf accessed 20 August 2022.
[88] Horace Herring, 'Energy Efficiency: A Critical View' (2006) 31 (1) Energy 10-19, 16.
[89] United Nations Framework Convention on Climate Change art. 3-4, May 9, 1992, 1771 U.N.T.S. 107.
[90] Herring (n 88) 19.
[91] ibid; Hall 'Energy Justice and Ethical Consumption' (n 13) 430.
[92] Dernbach and Brown 'The Ethical Responsibility to Reduce Energy Consumption' (n 21) 994.
[93] ibid.

consumer in the U.S is using energy at 20 times the rate of Africans, we cannot envisage any kind of action that does not rest upon some moral foundation in concepts of fairness, rights, and consequences for the future.[94] The point here is to have some level of morality, consumerism, and responsibility integrated into the production, consumption, and waste practices in the global energy system. According to Butler – commenting on the relationship between energy consumption and morality:

> [t]here is nothing intrinsically immoral about leaving your electrical equipment on standby or your thermostat up high. These (in)actions become moralised only in the respect that they will cause harm to others.[95]

It is important to note that with the current pattern of consumption at the global level, it is evident that the least developed and developing countries are already bearing the brunt of the impacts of climate change, even though they may be contributing the least to the problem.[96] This conception explains why energy scholars continue to advocate for practices of ethical consumption of energy that includes practical conservation measures, increased energy-efficient appliances, and monitoring of carbon emissions to address environmental impacts.[97]

Issues of ethical consumption of energy are also raised when consumption patterns show harm to others at a distance from where the energy is being used.[98] Thus, there is a need to identify who is being harmed by certain individual consumption choices, which at some point

[94] Richard Wilk, 'Consuming Morality' (2001) 1 (2) Journal of Consumer Culture 245-260.
[95] Catherine Butler, 'Morality and Climate Change: Is leaving your TV on Standby a Risky Behaviour?' (2010) 19 (2) Environmental Values 169-192.
[96] Generation Climate Europe: Global North and Global South: How Climate Change Uncovers Global Inequalities https://gceurope.org/global-north-and-global-south-how-climate-change-uncovers-global-inequalities/ accessed 20 September 2022.
[97] Martha Starr, 'The Social Economics of Ethical Consumption: Theoretical Considerations and Empirical Evidence' (2009) 38 (6) The Journal of Socio-Economics 916-925, 917.
[98] Hall 'Energy Justice and Ethical Consumption' (n 13) 430.

will mean that that consumption model becomes unethical.[99] The point here is that individuals have a moral responsibility to rethink their consumption patterns where unethical issues are raised, especially as they relate to the different lifestyles in developed and developing countries.

From the discussion above that there is a need to redefine the global energy system in relation to consumption patterns through the imperative of 'just' and 'ethical' consumption of energy. An optimum way to address the issue of unethical consumption might be to have a framework in place at the international level that would guide States in the pursuit of the objective of just consumption. This approach might include creating an environment where it is possible to reduce consumption, including by encouraging States to enact specific laws to help cut consumption through improved energy efficiency and conservation measures. Indeed, lessons could be drawn from the EU, particularly looking at EU Directives that were specifically issued on energy inefficiency.[100] Thus, creating a more just and ethical consumption approach could potentially address the energy gap between countries in the Global North - economically developed and countries in the Global South - less economically developed. The same approach could be adopted within developing countries with regional institutions like the African Union for example pushing for African States to enact specific laws geared towards realising the objectives of just consumption.

One final point to examine here is the extent to which states already have legally binding obligations mandating a just consumption of energy. Unfortunately, just as we have noted that the energy justice concept itself lacks enforcement mechanisms, the same applies to the imperative of just consumption of energy. The idea of just consumption may be difficult to

[99] John Silk 'Caring at a Distance: Impartiality, Moral Motivation and the Ethics of Representation' (2000) 3 (3) Ethics, Place and Environment 303-322.
[100] Directive 2012/27/EU of the European Parliament and of the Council October 2012 https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF accessed 25 July 2022.

realise due to the lifestyle that people have become accustomed to over a long period of time. Particularly for the Global North, the current approach to energy consumption could make the realisation of just consumption a difficult task. While the challenge of enforcement or lack of a legally binding obligation may pose a clear limitation to this imperative, it could nevertheless be used to draw more attention to justice issues in the global energy system. Perhaps, the idea of ensuring that people are consuming energy in a just and ethical manner could be the starting point towards bringing out greater awareness of our actions toward energy consumption.

From the analysis above, it can be deduced that there is no legal obligation on states to enforce just consumption of energy. At best, we can push for national regimes to design specific domestic legislation to enforce the imperative of just consumption of energy. This means that individual states can unilaterally introduce a legal framework that could help them realise just and ethical consumption through practices such as energy conservation, developing and use of renewable energy, and the use of energy-efficient appliances.

In the next chapter this author will set out how far Nigeria currently applies an energy justice framework, therefore it is necessary for each imperative being discussed to also indicate a threshold or criteria to measure Nigeria's (or any state's) progress towards that goal. Thus, it is pertinent to note at this juncture that for this imperative to be met by an individual state, there arguably need to be actions that include: (i) policy measures requiring people to adopt practices that promote just consumption through the use of energy efficient products and appliances, (ii) higher tariffs for energy use or energy cut off during certain hours which generally encourages people to become more conscious of their consumption pattern; and (iii) energy literacy or education programmes to help people make informed decisions on how they use energy.

4.4.2 Transparency and Accountability in Energy Systems

The imperative of transparency and accountability in energy systems means greater openness about the production and use of energy.[101] They also mean that the requirement for energy proponents to meet a legal standard of conduct, such as due diligence that has been set out in a legal framework. Generally, energy systems governance is likely to produce positive outcomes when it is transparent, participatory, and attentive to equity and justice principles.[102] This observation implies that the lack of transparency and accountability in energy systems may have some implications for end-users. For example, energy systems that are characterised by a "closed" decision-making process, together with limited public involvement may result in higher prices and less reliable energy services. Perhaps, this is partly due to institutional corrupt practices in energy system operations that is also evidenced by failure to disclose oil revenues by both host governments and multinational corporations.[103]

The consequence of the lack of transparency and accountability is evidenced in the persistent agitations from members of host communities in resource-rich developing States in Africa. For example, resource-rich communities in African countries such as the Democratic Republic of Congo, often feel marginalised in the management and administration of mineral resources found in their communities.[104] Consequently, this has left the country with insecurity challenges resulting from violent conflicts from different militant groups, especially in communities where resources exploration and production activities are

[101] Walker and Day (n 82) 69-75.
[102] Hall 'Energy Justice and Ethical Consumption' (n 13)
[103] Adedolapo Akinrele, 'Transparency in the Nigerian Oil and Gas Industry' (2014) 7 (3) Journal of World Energy Law and Business 1.
[104] Jesse S. Ovadia, 'Natural Resources and African Economies: Asset or Liability' in Samuel Oloruntoba, Samuel Ojo and Toyin Falola (eds), *The Palgrave Handbook of African Political Economy* (Palgrave Macmillan 2020) 667-677.

conducted.[105] The conflicts sometimes lead to the destruction of energy infrastructures that consequently, halts energy production, thus exacerbating energy challenges.

In practice, transparency is associated with the increased visibility and openness of energy production and supply chains, as a means of showing consumers that there is nothing to hide.[106] Transparency can be achieved by making production practices viewable and traceable, with techniques including labelling and marketing which takes away the opaqueness in energy systems.[107] An optimum way to enhance the realisation of open and transparent energy systems is to ensure that information about energy systems, including from production to consumption, environmental pollution, and other related issues, is regularly provided to end-users. Better information disclosure can assist members of the public to make informed energy decisions, such as better and efficient use of energy. Indeed, transparency and accountability as an energy justice imperative could potentially help people avoid decisions that are based on misleading information about energy systems operation. More so, this imperative has been known under certain conditions to help in reducing corrupt practices associated with energy systems, and to improve social stability.[108]

It is pertinent to note at this juncture that lack of transparency and accountability in energy systems also contributes to the resource curse phenomenon in resource-rich developing countries.[109] The resource curse posits that there exists a negative relationship between endowment with natural resources and socio-economic development.[110] This suggest that countries with abundance of natural resources suffer from negative micro-economic and

[105] ibid.
[106] Frans Brom, 'Food, Consumer Concerns, and Trust: Food Ethics for a Globalizing Market' (2000) 12 (2) Journal of Agricultural and Environmental Ethics 127-139, 134.
[107] ibid 129.
[108] Benjamin Sovacool, *Energy and Ethics: Justice and the Global Energy Challenge* (Palgrave Macmillan, London 2013) 98.
[109] Ivar Kolstad and Arne Wiig 'Is Transparency the Key to Reducing Corruption in Resource Rich-Countries' (2009) 37 (3) World Development 521-532.
[110] Emeka Duruigbo, 'The World Bank, Multinational Oil Corporations, and the Resource Curse in Africa' (2005) 26 (1) U. Pa. J. Int'l Econ. L 5.

macro-political effects.[111] Thus, broader effects of the resource curse are manifested due to the lack of transparency and accountability of revenues accrued from exploration and production of economic resources. Therefore, the imperative of transparency and accountability could be a viable tool for addressing issues associated with the resource curse phenomenon, particularly in countries with vast energy resources but which are not able to translate the resources into socio-economic development.

The idea of accountability of energy companies, especially as it relates to how their operations impact the environment, could also help people to make good choices in their interactions with energy companies. Thus, where MNCs are accountable to members of the public, especially to host communities, this will help to improve compliance to environmental regulations in the energy sector. Accountability could also help to ensure that oil revenues are fully accounted for and properly utilised for other socio-economic development.[112] This imperative works by way of encouraging MNCs (as a way to show that they are accountable) to let members of the public know what they pay to host governments of countries where they operate, and, on the other hand, by expecting host governments to make public their receipts.[113]

In respect of whether this imperative has any legally binding obligations on states to enforce it, one of the foremost international efforts aimed at ensuring transparency and accountability in energy systems is the establishment of the Extractive Industries Transparency Initiatives (EITI). This institution was championed by the UK in 2002 to promote transparency and

[111] Frynas Jedrzej George, Geoffrey Wood and Timothy, 'The Resource Curse without Natural Resources: Expectations of Resource Booms and Their Impacts' (2017) 116 (463) African Affairs 233-260.
[112] Godswill Agbaitoro, 'Legal Strategy for Resolving the Socio-economic and Environmental Symptoms of the Resource Curse in Nigeria: The Role of Impact and Benefit Agreement (2018) 44 (3) Commonwealth Law Bulletin 381-399, 388.
[113] ibid.

accountability in the extractives sector.[114] The key idea behind the EITI is to ensure that extractive companies and governments report on the development of economic resources, including energy in resource-rich countries.[115] Although the focus of the EITI is to strengthen measures to address the resource curse phenomenon, nevertheless, it also aims to improve transparency and accountability in the extractives sectors.

Regrettably, it appears that the objectives of the EITI have not been entirely met, especially as many resource-rich developing countries continue to grapple with the challenges associated with the resource curse phenomenon. This challenge could be attributed to the lack of any legal obligations arising from the imperative of transparency and accountability in energy systems as individual states are mostly at liberty to ensure its effectiveness. At best, its effectiveness largely depends on the political will of national governments, especially in resource-rich countries. Thus, where this imperative lacks legitimate government support, its enforcement and implementation become difficult to achieve at domestic level.

Legally binding obligations on transparency and accountability are present in the human rights framework, notably the human right to information.[116] However, it requires states to have ratified those instruments as well as strong political will on the part of national governments to ensure that all aspects of energy systems operation are transparent. This implies that to achieve some level of transparency and accountability in energy systems is largely dependent on the effectiveness of the EITI and other factors, including the political will of the national governments. This could be required through legislation that not only seeks to ensure transparency and accountability of revenue disclosure from energy resources development but also on the operation of whole energy systems.

[114] Clare Short 'The Development of the Extractive Industries Transparency Initiative' (2014) 7 (1) Journal of World Energy Law and Business 8-14.
[115] Agbaitoro (n 112) 387.
[116] See Article 19 of the Universal Declaration of Human Rights and Article 19 of the International Covenant on Civil and Political Rights (ICCPR) which are both seen as an element of freedom of expression.

To realise this imperative, arguably the state needs to ensure that an energy system is in place that is transparent and open, which in turn would help companies in the sector gain local peoples' trust in resource-rich communities, and further help reduce the disruption of energy resources development.

4.4.3 Energy Efficiency and Conservation

The terms energy 'efficiency' and 'conservation' have been used interchangeably in policy discussions, however, in practice, they do have different meanings.[117] Energy efficiency involves doing the same amount of work or producing the same amount of goods or services with less energy.[118] Energy conservation, on the other hand, involves using less energy regardless of whether energy efficiency has changed.[119] According to the Department of Energy and Climate Change (DECC) in the UK, energy efficiency and conservation systems boost growth, create jobs, save households and businesses money on fuel bills, create a more sustainable and secure energy system, and deliver cost-effectively against climate change goals.[120] More so, investment in efficiency and conservation practices provides additional economic value by preserving the resource base (especially combined with pollution prevention technologies) and mitigating environmental problems.[121]

Importantly, efficiency and conservation remain two principal ways of reducing unethical patterns of energy consumption.[122] This latter aspect, therefore, constitutes a vital aspect of

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[117] Horace Herring, 'Is Energy Efficiency Good for the Environment: Some Conflicts and Confusions' in G. MacKerron and P. Pearson (eds) *The UK Energy Experience: A Model or a Warning* (London: Imperial College Press 1996) 327-38.
[118] ibid.
[119] ibid.
[120] Department of Energy and Climate Change, The Energy Efficiency Strategy: The Energy Efficiency Opportunity in the United Kingdom <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/65602/6927-energy-efficiency-strategy--the-energy-efficiency.pdf> accessed 12 March 2022.
[121] Sunday Olayinka Oyedepo, 'Energy Efficiency and Conservation Measures: Tools for Sustainable Energy Development in Nigeria' (2012) 2 (3) International Journal of Energy Engineering 86-89, 90.
[122] See NAT'L ENERGY POLICY DEV. GROUP, NATIONAL ENERGY POLICY (2001) 1-3 http://www.wtrg.com/EnergyReport/National-Energy-Policy.pdf. accessed 15 March 2022.

the goal for this imperative – and it suggests ways in which it can be met by an individual state. We note that there are energy injustices arising from the lack of efficiency and conservation that are linked to unethical consumption and wastage in both developed and developing countries. More specifically, unethical consumption is recognised as being largely committed by individuals who live and work in developed countries,[123] but it may also apply to developing countries. This happens in developing countries too as a result of energy illiteracy, leading to wastage of limited energy available for the population. The consequence is that the consumption of energy (for example derived from fossil fuel) without regard to efficiency contributes to climate change, but with greater impacts on developing countries. This, therefore, makes the pursuit of energy efficiency largely attributed to the quest to have a safer environment. As argued by Hobson, "energy consumption along with production is one of the main causes of global environmental change".[124] Based on this environmental dilemma, strategies could be developed to resolve issues arising from individual choices on energy consumption that often lead to high demands and over-consumption with profound environmental impacts from both developed and developing countries. For an effective approach, energy education could be used as a tool to make people understand the broader implications of unethical consumption and the purchase of non-efficient appliances and equipment.

A second aspect to this imperative relates to energy equipment and appliances that are made available for use in the three highest energy demand sectors, namely, (i) household; (ii) transport; and (iii) industry. For instance, there are now more energy-efficient appliances, particularly for household use, allowing for the same level of consumption but with less

[123] Dernbach and Brown 'The Ethical Responsibility to Reduce Consumption' (n 21) 992.
[124] Kersty Hobson, 'Competing Discourses of Sustainable Consumption: Does the "Rationalisation of Lifestyles" Make Sense?' (2002) 11 (2) Environmental Politics 95-120.

energy use.[125] Therefore, this imperative offers an opportunity for consumers to get a payback of the initial energy investment through cost savings by acquiring energy-efficient appliances or technologies.[126] This notion implies that people could have the advantage of making energy go further, and providing the necessary warmth for health and wellbeing in a household budget.[127]

It can be argued that developed countries have a responsibility to set examples for practical energy efficiency and conservation practices. This argument translates into a call for developed countries with capabilities to foster replicable models of the good life that are based on lower energy consumption levels, together with sustainable development, and to reduce adverse impacts of negative externalities from energy systems.[128] For instance, countries such as the U.S. and the UK could set an example based on a level of energy consumption – a much lower level of energy consumption – which the rest of the world could also attain.[129] This moral responsibility has been, in part, translated into legislation in the EU. For example, Directive 2012/27/EU,[130] establishes a set of binding measures to help EU countries reach the 20% energy efficiency target by 2020.[131] However, it is not clear how much of this target has been met, given the wide range of flexibility that EU directives affords to member states.

[125] Deirdre Shaw and Terry Newholm, 'Voluntary Simplicity and the Ethics of Consumption' (2002) 19 (2) Psychology and Marketing 167-185, 178.
[126] John Dernbach and Widener Univ. Law Sch. Seminar on Energy Efficiency, Stabilizing and Then Reducing U.S Energy Consumption: Legal and Policy Tools for Efficiency and Conservation (2007) 27 ENVTL. L. REP. 10,003.
[127] Walker and Day (n 82) 70.
[128] United Nations Framework Convention on Climate Change article 3-4, May 9, 1992, 1771 U.N.T.S. 107 https://unfccc.int/resource/docs/convkp/conveng.pdf accessed 25 September 2022.
[129] Dernbach and Brown 'The Ethical Responsibility to Reduce Consumption' (n 21) 995.
[130] Council Directive 2012/27/EU of 25 October 2012 on Energy Efficiency and Amending Directive 2009/125/EC and 2010/30/EU and repealing Directive 2004/8/EC and 2006/32/EC. https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF accessed 25 September 2022.
[131] ibid.

The present author acknowledges the different lifestyles between developed and developing countries, which may be one of the reasons for the huge energy consumption disparities. Therefore, this means that this imperative would require the redesigning of energy systems at the global level to support more efficiency and conservation measures. It should be noted that the argument on efficiency measures largely favours the obligation to reduce global GHG emissions in order to address climate change, especially as it could lead to more cumulative emissions reductions than other carbon dioxide mitigation options.[132] However, energy efficiency goes beyond GHG emissions reduction to reduce the energy demand and supply imbalance amongst countries, whilst helping to create a behavioural change of end-users.

It is pertinent to note at this juncture that achieving energy efficiency and conservation is much more complicated in practice as individual states have the liberty to come up with different initiatives following certain directives at regional level. This is due to the absence of clear and comprehensive legal framework on energy efficiency and conservation. Therefore, for this imperative to be effective, it might require the enactment of specific laws and policies that seek to pursue more practical energy efficiency and conservation measures at the domestic level. This approach could help to ensure a more just energy system because it would encourage the use of less energy, thus helping also to reduce carbon emissions.

In sum, it could be drawn from the analysis above that for this imperative to be met by an individual state, it would require implementation of actions that include (i) practical measures on efficiency and conservation in relation to appliances and equipment used in both households and even in industries; (ii) behavioural changes of individuals towards consumption and wastage of energy which could be addressed through energy education or literacy programmes. Admittedly, there have been ways through with energy is conserved in developing countries , for instance, through rationing by the government, however, the idea

[132] Dernbach and Brown 'The Ethical Responsibility to Reduce Consumption' (n 21) 990.

behind this is not about efficiency or conservation but rather a way to ensure that the limited energy is able to serve everyone.

4.4.4 Sustainable Development of Energy

Sustainable energy development primarily involves the harnessing of energy resources for human use in a manner that supports lasting economic development.[133] The sustainable development concept is originally credited to the 1987 Report of the World Commission on Environment and Development (WCED, 1987), widely referred to as the Brundtland Commission report – *Our Common Future: From One Earth to One World.*[134] The sustainable development concept was first used by Swiss-based World Conservation Union (IUCN) in their 1980 report on World Conservation for Sustainable Development. It is noteworthy that the interdependence argument advanced by the IUCN was much the same as that expressed by the Brundtland Commission but the report itself failed to receive the extraordinary attention that surrounded the Commission's report.

The Brundtland Commission conceptualised sustainable development as the paths of human progress which meet the needs and aspirations of the present generation, without compromising the ability of future generations to meet their own needs.[135] Additionally, the Rio Declaration 1992 takes the concept of sustainable development a step further by embodying it in a document, albeit non-binding, adopted by consensus.[136] It is important to note that currently, the principle has found its way into the development programmes of

[133] Brynhildur Davidsdottir, 'Sustainable Energy Development: The Role of Geothermal Power' (2012) 7 Comprehensive Renewable Energy 273-297.
[134] Report of the World Commission on Environment and Development: Our Common Future <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf.> accessed 24 June 2022.
[135] Richard J. Estes, 'Toward Sustainable Development: From Theory to Praxis' (1993) 15 (3) Social Development Issues 1-29.
[136] Sumudu Atapattu, 'Sustainable Development, Myth or Reality?: A Survey of Sustainable Development Under International Law and Sri Lakan Law' (2001) 14 Geo Int'l Envtl L Rev 265.

individual States, however, it remains unclear the extent to which practical results have been achieved.

Presently, it is observed that both in the developed and developing world, there is a struggle to develop energy resources sustainably. Unsustainable development of energy resources appears to be the standard despite a common understanding that resources development should be conducted in a manner that prevents attendant risks and adverse challenges to people and the environment.[137] In practice, many States engage in energy resource development to increase economic growth. However, States must understand that economic growth depends heavily on the long-term availability of energy from sources that are affordable, accessible, and most importantly environmentally friendly.[138] Therefore, it is important that energy resource development is pursued with the objective of sustainability as this is potentially a valuable way to achieve energy justice. This conception implies that energy policy makers involved in framing policies and decision-making in the sector should take into account the principle of sustainable development.

Sustainable development of energy as an imperative is anchored on a framework that seeks to foster and improve human quality of life and well-being by integrating economic development, human rights, peace and security, and environmental protection in the development of economic resources.[139] This approach could also be pursued in the operation of energy systems with a view to ensuring equity for all generations. The operations of energy systems can also benefit from the principle of sustainable development as it could potentially help to deliver just energy systems at the international level.

[137] Jane Ezirigwe, 'Human Rights and Property Rights in Natural Resources Development' (2017) 35 (2) Journal of Energy and Natural Resources Law 201-213, 203.
[138] Sunday Oyedepo, 'Energy and Sustainable Development in Nigeria: The Way Forward' (2012) 2 (15 Energy, Sustainability and Society 1-17.
[139] Dernbach and Brown 'The Ethical Responsibility to Reduce Consumption' (n 21) 992.

Just like the other imperatives, it is important to find whether this imperative imposes any legal obligation on states - that is to consider sustainable development of energy resources? Perhaps the starting point in this discourse is to note that the principle of sustainable development remains under the remit of soft law international instruments. This implies that under international law, sustainable development of energy resources is at best left at the discretion of individual States. This in addition to principle 21 of the Stockholm Declaration 1972 which gives individual States the sovereign right to exploit their own resources in pursuant to their own environmental policies.[140] The consequence of this principle is that States are likely to prioritise the development of economic resources under international law sometimes at the expense of environmental protection.

It is important to note that status of the concept of sustainable development in almost all post-WCED documents stipulate some aspects to be binding and others non-binding. For instance, under Article 3 (4) of the UNFCCC stipulates that [t]he Parties have a right to, and should, promote sustainable development.[141] This, in effect, is supposed to be the first binding instrument of universal application, which provides that the parties have a right to sustainable development.[142] However, just like soft laws or principles under international law, with the UNFCCC individual States are at liberty to figure out how to implement the instrument in national regimes. This implies that there is no direct enforcement mechanism or binding legal obligation on the imperative of sustainable development of energy on individual States. Clearly, the position of soft laws or principles on the issue of sustainable development under international law translate into a non-binding commitment on individual States to comply with them.

[140] Principle 21 Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration, 1972)
[141] United Nations Framework Convention on Climate Change https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf accessed 20 June 2022.
[142] Atapattu (n 136) 269.

4.4.5 Inter-generational and Intra-generational Equity

The principle of inter-generational and intra-generational equity presupposes that all people have equal right to energy resources.[143] In simple terms, inter-generational equity means ensuring equity in access to energy resources for future generations - one that is not hindered by the actions of people in the present generation. Inter-generational equity contains an intra-generational component as a broader energy justice approach.[144] This implies that the rights of people in the present generation to equitable access to the benefits of energy systems should also be prioritised. Intra-generational equity, therefore, means ensuring equity in access to energy resources for the population of today – that is between people in the present generation.[145] The focus of this imperative is hinged on the argument that there is a moral responsibility on different generations to utilise the benefits of energy in a way that does not hinder the opportunity of other generations to get some level of benefits.[146] This implies that all people regardless of the generation they fall into have equal right to enjoy the benefits of energy systems. In other words, rights of people regardless of which generation should not be disturbed by damage to current energy systems.[147] This principle is also heavily anchored on the protection of the rights of future generations that has now established new ways to undertake legal actions on behalf of future generations in relation to the operation of energy systems.[148]

Debates on whether people of today owe a responsibility towards future generations have long been an important ethical issue within the environmental justice scholarship.[149] These

[143] Sovacool, *Energy and Ethics* (n 108) 136.
[144] Erin Dobbelsteyn, 'For Future Generations: The Amendments to the Federal Sustainable Development Act and the Implementation of Intergenerational Equity' (2022) 18 (2) McGill Journal of Sustainable Development Law 138.
[145] Sovacool and Dworkin, *Global Energy Justice* (n 16) 370.
[146] John Nolt, 'Greenhouse Gas Emission and the Domination of Posterity' in Denis G. Arnold (ed.), *The Ethics of Global Climate Change* (Cambridge University Press 2011) 60.
[147] Sovacool and others, 'Energy Decisions Reframed as Justice and Ethical Concerns' (n 77) 3.
[148] Emilie Gaillard and David M. Forman (ed) *Legal Actions for Future Generations* (Peter Land 2020)
[149] Shirani and others, 'Disconnected Futures' (n 18) 456.

debates have been extended to energy justice scholarship and now raise questions about equity in energy practices.[150] From the viewpoint of equity, the questions consider the extent to which the current population should bear responsibility for the consequences of their behaviour as it relates to energy needs and that of future generations.[151] This conception can be explained through the prism of the 1987 Report of the World Commission on Environment and Development "Our Common Future" which delineates a definition of sustainable development that focuses on meeting the needs (including energy) of the present generations without compromising the ability of future generations to meet their own needs.[152] This principle was amplified in the 1992 Rio Declaration (UN 1992) and the UNFCC 1992 with many states making efforts to include this mandate in government policies. For example, the UK government included the principle of sustainable development in government policies in line with the Rio Declaration.[153]

As an energy justice imperative, inter-generational and intra-generational equity relates to how energy decisions of current generations may affect future generations on the one hand and existing generations on the other hand. Energy scholars opined in this regard that:

> Decisions or indecisions today can impose heavy costs on our descendants or, at a minimum, limit the choices they will have. That is why there is an unprecedented need to merge the reality of an

[150] ibid.
[151] ibid 455.
[152] Report of the World Commission on Environment and Development: Our Common Future https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf accessed 20 May 2022.
[153] The United Kingdom National Planning and Policy Framework 2021 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf accessed 20 July 2022.

> international community with the established principle of inter-generational responsibility.[154]

It is pertinent to note that the idea of equity in the sharing of natural resources between the present and future generations dates to and beyond John Locke (1632-1704), who argued that people may justly use resources provided that they (a) exploit the resources productively, and do not waste them, and (b) leave "enough and as good for others."[155] The implication from the above conception is that decisions of the current generation in the way they harness and use depletable energy resources violate principles of posterity and common patrimony.[156] This remains an energy injustice in the global energy system, particularly to future generations. However, this could be addressed through measures that include investing in new research and energy efficiency measures, a shift to non-depletable renewable energy resources, and the establishment of a sovereign wealth fund for future generations.[157] The point here is that there is a need to redesign energy systems at the global level to address the injustice of generational inequity. Perhaps, this could begin by looking at the way energy resources are harnessed and consumed by the current generation which poses a threat to future generations. The aim of the imperative is to advance a strategy where the development of energy systems at the global level seeks to turn depletable resources into ongoing and sustainable resources enough to satisfy both the current and future populations.

It is important to note at this juncture that addressing generational inequity in global energy systems does not only apply to fossil fuel-based energy. This is because the injustice of generational inequity spans across other conventional energy resources such as – coal, natural

[154] William Antholis and Strobe Talbott, *Fast Forward: Ethics and Politics in the Age of Global Warming* (Washington DC: Brookings Institution Press 2010) 112.
[155] Joanna Pasek, 'Obligations to Future Generations: A Philosophical Note' (1992) 20 (4) World Development 512-521.
[156] Sovacool and Dworkin, *Global Energy Justice* (n 16) 291.
[157] ibid 291.

gas, and uranium even as their distribution is made to be an unequal degree.[158] The point here is that even though energy resources are distributed differently,[159] their use should be just and reasonable for the benefit of both present and future generations. The present author argues here that to address generational inequity, energy systems need to be developed in a way that is seen to set down obligations for the people now as well as for the future population to use energy resources in a just and reasonable way. Among other things, this would mean encouraging people or creating an environment for renewable energy development to thrive or be introduced into our energy systems mix.

As with other energy justice imperatives, it is important to examine the extent to which any legal binding obligation could arise from this imperative. Put differently, are there any binding legal obligations on states to ensure that the development and use of energy resources is conducted in an equitable manner for the benefit of both the present and future generations? This is important because attaining greater levels of equity firstly, among groups within the present generations, and, secondly, between current and future generations remains a vital condition in achieving sustainability. However, any legal obligation on States arising from this imperative would lean towards moral responsibility to ensure that all generations get equal benefits from energy systems. This could potentially mean that there is no legal obligation on individual States to implement this imperative at domestic level.

Practically, the idea of legal obligation on States is strengthened by provisions in international instruments such as the Rio Declaration and UNFCC where the right to future generations is protected. It could also be argued that the move to push for the protection of such right using international instruments could mean that there is no clear legal obligation on individual States at the domestic level to enforce this imperative, unless where such a State

[158] ibid 294.
[159] ibid.

has either domesticated relevant provisions in national laws or having to apply the instrument directly. In sum, to achieve equity, energy systems operations should be managed through cooperation amongst various governments at the local, national, and international levels in order to ensure fair access to energy systems for all.

4.4.6 Anti-corruption and Democratic Participation

Energy systems are generally a product of the political and economic power structure within a society.[160] As with other areas of policymaking in states with a centralised approach to energy systems, these structures often serve to reinforce power structures – indeed in authoritarian states, these organisational and regulatory structures will have been designed specifically to do this.[161] Even moving beyond authoritarian states, power structures often give special privileges or added influence to certain elements of the energy sector, for example, note the powerful lobbying by the energy sector in the U.S for favourable legislative and fiscal policy.[162] Thus, by its ability for huge wealth creation for energy companies and the power that comes from being a major supplier of energy in a limited market, as well as being a necessity in modern economics, such energy firms often also have improper and uncontrolled capacity to undermine democratic forms of governance.[163] For instance, the U.S energy industry demonstrates how difficult it is to balance the many benefits of harnessing fossil fuels with the dangers to the social order that result from the amassing of power and wealth through the control of energy.[164] This observation gives us an idea of how energy, in particular, fossil fuel can influence democratic institutions and structures in modern society.

[160] Benjamin Sovacool, Roman Sidortsov and Benjamin Jones, *Energy Security, Equality and Justice* (Routledge 2014) 116.
[161] ibid.
[162] ibid.
[163] ibid 116.
[164] ibid.

It is, however, important to note that energy systems are not neutral to issues of social and political justice.[165] In reality, conventional energy systems are vulnerable to abuse of power by those who finance, construct, manage, and administer them to the point where their actions are now seen to be a product of the resource curse phenomenon.[166] Due to the huge profits made from conventional energy systems, there is an almost irresistible incentive to consolidate and maintain the dominance of these systems over alternatives, regardless of social costs.[167] Additionally, the nature of integrated and centralised energy systems requires a great degree of cooperation between energy companies and government authorities, and this affinity lends itself easily to self-interested manipulation by the parties involved, especially as the highly technical nature of energy systems makes democratic accountability difficult.[168]

The energy justice imperative here, therefore, needs to focus on the need to reduce elements of corruption and authoritarianism in energy systems. Admittedly, this type of injustice will be difficult to address as it remains a key challenge in the global energy system. The reason for this difficulty is attributed to the importance attached to energy resources as financiers, government planners, and energy analysts often perceive the production of energy resources as a means to lift countries out of poverty and provide the foreign exchange earnings needed for economic development.[169] However, the reality seems to be different as evidence from energy resource-rich developing countries in Africa suggests otherwise.[170]

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[165] ibid 117.
[166] Macartan Humphreys, Jeffery Sachs and Joseph Stiglitz, 'Introduction: What is the Problem with Natural Resource Wealth?' in Macartan Humphreys, Jeffery Sachs and Joseph Stiglitz (eds), *Escaping the Resource Curse* (New York: Columbia University Press 2007) 1-20.
[167] Sovacool, Sidortsov and Jones (n 160) 117.
[168] ibid.
[169] ibid 119.
[170] See Joe Brock and Tim Cocks, 'Nigeria Oil Corruption Highlighted by Audits' Reuters News Service (8 March 2012) https://www.reuters.com/article/us-nigeria-corruption-oil-idUKBRE8270GF20120308 accessed 23 May 2022; Shari Bryan and Barnie Hofmann, Transparency and Accountability in Africa's Extractive Industries: The Role of the Legislature (Washington, DC: National Democratic Institute for International Affairs, 2007), 36-37 https://www.ndi.org/sites/default/files/2191_extractive_080807.pdf accessed 22 September 2022.

The injustice here is seen in terms of how energy systems impinge on social and political stability through violation of human rights and promoting military conflict in many resource-rich nations.[171] Arguably, the effect of some of these challenges becomes factors that exacerbate energy crises. For example, the history of the development of fossil fuel shows among the developed and developing parts of the world that authoritarian tendencies are unavoidable in energy systems, especially those that are large-scale, highly centralised and integrated, and capital-intensive.[172] The reality is that in some ways, the dominance of conventional energy has largely contributed to authoritarianism and non-democratic participation in the operation of energy systems.

From the discussion above, it can be argued that developing a legal framework to eliminate corruption and authoritarianism in energy systems operation will augment efforts to deliver social justice in global energy systems. To establish such framework would require efforts to address areas in energy systems at the global level that breed corruption and injustice. In terms of whether this imperative has any binding legal obligation on individual states, it could be argued that legal obligations relating to this imperative arise under international instrument, such as the United Nations Convention Against Corruption,[173] and African Union Convention on Prevention and Combating Corruption.[174] Although, the implementation of this imperative may require individual States to take initiatives to ensure that measures are put in place for energy systems to deliver just and reasonable outcomes, it still largely depends on the political will of the state. Perhaps, States could rely on these conventions dealing with corruption, leveraging them for the purpose of setting out clear legal obligations

[171] Sovacool, Sidortsov and Jones (n 160) 117.
[172] ibid 124.
[173] United Nations Convention Against Corruption https://www.unodc.org/documents/brussels/UN_Convention_Against_Corruption.pdf accessed 22 October 2022.
[174] African Union Convention on Prevention and Combating Corruption https://anticorruption.au.int/sites/default/files/files/2021-06/combattingcorruptionconventiona5v2enreduced.pdf accessed 22 October 2022.

to implement this imperative. The challenge, however, is that energy systems operations are typically a prerogative of national regimes, and the conventions only recommend, rather than require, that State Parties to implement them.

4.5 The Implications of the Energy Justice Imperatives at the International Level

As earlier stated, the energy justice imperatives drawn from the scholarship constitute vital aspects of the global energy system where challenges tend to come from. Therefore, they are relevant if we are to achieve just energy systems at the global level. From the analysis, there is currently neglect of the global energy systems-wide justice implications, which systems appear to be unsustainable. This is partly because the present global energy system is heavily skewed towards fossil fuels. The reality is that fossil fuel-based energy systems are fraught with energy injustices ranging from production to consumption patterns, waste, and the impact of negative externalities. Therefore, the energy justice imperatives are strategically placed not only to drive the realisation of just energy systems but to help address injustices mostly arising from our fossil fuel-based energy systems at the international level.

The implication of the imperatives on energy systems at the international level is manifested when they are engaged, particularly through the instrument of law and policy and they can redesign the operations of global energy systems. The imperatives serve as analytical tools needed by both developed and developing countries for the delivery of just energy systems to all people. This is based on some of the criteria set out, particularly on what the imperatives mean and how they could be achieved. More specifically, the imperative of efficiency and conservation, for example, could significantly address the largest and fastest-growing source of GHG emissions in our environment.[175] In principle, achieving justice in this sense is the ethical responsibility to reduce consumption amongst individuals, States, and everyone whose actions may affect not only the environment but the interests of others.

[175] Dernbach and Brown 'The Ethical Responsibility to Reduce Consumption' (n 21) 990.

4.6 Energy Justice Imperatives: Domestic Level

The crux of the argument on energy justice imperatives at the domestic level is to advance justice principles to be utilised by national regimes for the realization of just energy systems. Perhaps, the starting point for understanding the imperatives at the domestic level are the considerations of inherent institutional, legal, and policy challenges that apply to individual States. For example, there are institutional challenges in the energy sector faced by some developing countries. These challenges include natural resource conflicts, unrestrained continuous gas flaring as a source of carbon emissions resulting in global warming,[176] financial strain due to mismanagement by national oil companies and conflicts of interest,[177] lack of synergy between the regulatory agencies, and energy infrastructural gaps.[178] These issues are connected to institutional and governance failure, particularly in the energy sector of SSA countries. More so, they are evidenced by induced gross distortions and inefficiency in production, investment choices, and low return on investments, and expensive delays and cost overruns in the state's energy enterprises.[179] The myriad of institutional problems at the domestic level continues to aggravate energy injustices experienced at the domestic level. Thus, the energy justice imperatives for the domestic level are: (1) human rights-centred energy decisions; (2) energy access and services; (3) just energy institutions; and (4) energy democracy – power to people. In this section, this author first considered how energy decisions for access purposes made at the domestic level potentially affect other human rights, and what is required to prohibit this energy injustice. This is followed by the need to address issues linked to the challenge of access and services and unjust energy institutions.

[176] The continuous flaring of gas associated with hydrocarbon is an energy injustice and it is partly due to the reluctance of both the central government and multinational oil companies operating in the NDR to invest in the gas gathering facilities for domestic use. This is in addition to their willingness to pay the low penalties for gas flaring in Nigeria.

[177] In June 2015, Angola's national oil company Sonangol was faced with bankruptcy due to financial mismanagement by managers and other conflict of interest with the Ministry of Petroleum

[178] Akin Iwayemi, 'Nigeria's Dual Energy Problems: Policy Issues and Challenges' (2008) <https://www.iaee.org/en/publications/newsletterdl.aspx?id=53> accessed 20 June 2022.

[179] ibid 18.

Lastly, the section investigates the role of energy democracy as an imperative for resolving energy challenges.

Figure 4.3: *Summary of energy justice imperatives for energy systems at the domestic level*

Energy Justice Imperatives	**Key aspects**
Human rights-centred energy decisions	Means to consider the protection of human rights in decisions relating to the energy development
Energy access and services	Means to pursue practical energy access and services through the instrument of law and policy
Just energy institutions	Means that states have a responsibility to ensure institutions in charge of energy provides just and reasonable services to people
Energy democracy – power to the people	Means to allow for democratic principles in the design and operations of energy systems at the domestic level

Source: *Authors' compilation*

4.6.1 Human Rights-Centred Energy Decisions

Over the years, the demand for fossil fuels has continued to rise despite efforts in the global energy sector to change the narrative by way of transitioning to cleaner energy to address climate change. Consequently, developing States that are key producers of oil, particularly in Africa, continue to engage in more exploration and production of hydrocarbons in order to address their energy needs. Admittedly, this approach has led to the conflict between economic resources development and the protection of human and environmental rights with underlying energy injustice concerns.

Interestingly, oil-rich developing countries in Africa believe that more exploration and production of oil and gas is an opportunity to address their energy challenges, even though its development is known to have impacts on human and environmental rights. For example, oil-rich developing countries in Africa, such as Nigeria (with the recent enactment of the Petroleum Industry Act (PIA) 2021) and Angola, continue to rely on oil and gas resources as their major energy source despite the availability of renewable energy sources. This is

evidenced from a report (in the case of Nigeria) by the defunct regulator in the oil and gas sector - the Department of Petroleum Resources (DPR) that 78% of the total energy consumption in the country is from petroleum.[180] The same narrative above could be attributed to Angola, another African country with vast oil resources which it relies on for economic growth but with weak regulatory framework for environmental protection in dealing with the aftermath of the oil industry.[181] According to the World Bank, since 2015, the oil sector in Angola accounts for one third of their GDP and roughly 95 per cent of exports.[182]

Beyond the use of fossil fuel for energy access development, there is a growing need for renewable energy sources to be used for increased energy access and services. The provision of energy access through the development of renewable energy projects offers an opportunity for African countries to achieve the UN Sustainable Development Goals (SDGs),[183] but there are potential risks and/or challenge to other human rights. These risks are seen to be manifesting in the Karuma hydropower project currently being constructed on the river Nile in the Kiryandongo District of Uganda: the largest dam in the East African country which is affecting property rights as well as other human rights.[184] Such project, upon execution comes with attendant risks to human rights including the right to subsistence, water, health, life, environment, participation, information, culture and property, all of which fall under a broad range of human rights that are threatened in the development of energy resources for access.

[180] Oyedepo 'Energy and Sustainable Development in Nigeria' (n 138) 2.
[181] The World Bank in Angola https://www.worldbank.org/en/country/angola/overview accessed 28 June 2022
[182] ibid
[183] UN General Assembly, Transforming our World: the 2030 Agenda for Sustainable Development, UN Resolution No. A/RES/70/1, 70/1. <www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&> accessed 2 April 2022.
[184] Remington Fritz, 'Development-Induced Displacement in Kiryandongo District: A Case Study of the Karuma Hydroelectric Power Plant' (2021) Independent Study Project Collection 3404. https://digitalcollections.sitedu/isp_collection/3404 accessed 30 April 2022.

Presently, emerging debates from energy justice scholarship recognise the growing impacts that energy resource development has on human and environmental rights and examines how international law could provide legal frameworks to address the impacts.[185] The energy injustice here occurs at the point where the development of energy projects or the impact of such projects breach directly or indirectly the rights of people in communities where such projects are executed.

Just like the imperative of transparency and accountability, the consequence of not making energy decisions (as they relate to energy development) that are human right-centred may pose a disruption to energy development in resource-rich communities. This is where the imperative is useful as it will present opportunities to policymakers to ensure that energy decisions are human rights-centred and can advance the energy justice concept.

Against the background above, there needs to be an energy justice approach that would ensure human rights-centred decisions are made in the development of energy resources. Thus, the imperative of having human rights-centred energy decisions is simply a call to mainstream human rights into energy decision-making processes as they relate to energy development.[186] This will go a long way to resolve the conflict between the development of energy resources and human rights risks and violations that occur in energy resources-rich communities in different countries.

To address the conflict, the United Nations human rights-based approach framework (HRBA) emerged in the early 2000s under the United Nations Guiding Principles on Business and

[185] Damilola S. Olawuyi, 'Energy (and human rights) for all: Addressing Human Rights Risks in Energy Access Projects' in Raya Slater, Carmen G. Gonzalez and Elizabeth Ann Kronk Warner (eds), *Energy Justice: U.S and International Perspectives* (Edward Elgar 2018) 74.

[186] Thoko Kaime and Godswill Agbaitoro, 'An Energy Justice Approach to Resolving the Conflict between the Development of Energy Access Projects and Human Rights Risks and Violations in Africa: Can a Balance be Struck? (2022) 3 (1) Global Energy Law and Sustainability 39-71.

Human Rights.[187] This framework has continued to gain recognition as a normative framework for mainstreaming human rights obligations into energy law and policy systems.[188] This was followed by the African Union's 2012 Resolution on a Human Rights-Based Approach to Natural Resources Governance that urges States to ensure that business enterprises, including energy operators, have a responsibility to respect, protect, and fulfil human rights in their operations and investments.[189]

The HRBA framework seeks to address potential adverse human and environmental impacts that may arise from the development of energy resources by placing human and environmental rights at the centre of energy decisions. It requires companies including energy proponents to undertake compulsory human and environmental rights impact assessment for measuring, identifying, and mitigating the potential adverse impacts of energy development.[190] This implies that individual States are to ensure that steps are taken to incorporate human rights safeguards into the energy law and policy regime relating to energy resource development.[191] Furthermore, they are to mainstream human rights into the domestic energy law and policy regime to create equal opportunities, justice, and protection of human rights in the development of energy access projects.[192] The purpose is to ensure that decisions relating to energy development, and which are likely to affect some aspects of human rights therefore, respect, protect and fulfil human rights. This approach could help to address energy

[187] ibid 82.
[188] ibid; See also Oyeniyi Abe, Implementing Business and Human Rights Norms in Africa: Law and Policy Interventions (Routledge 2022) 66.
[189] Damilola Olawuyi, 'Corporate Accountability for the Natural Environment and Climate Change', in Ilias Bantekas and Michael Ashley Stein, (Eds) *The Cambridge Companion to Business and Human Rights* (Cambridge University Press: Cambridge, UK, 2021)
[190] Olawuyi 'Energy (and human rights) for all' (n 185) 85; This was also the position in the Ogoni case petition filed by the Social and Economic Rights Action Center (SERAC), a non-governmental, non-partisan and voluntary initiative concerned with the promotion of economic and social rights in Nigeria, and the Center for Economic and Social Rights (CESR), a New Yok-based, non-governmental organisation devoted to the promotion of economic and social rights on a global scale.
[191] Salter, Gonzalez and Warner (n 1) 6.
[192] Tahnya Donaghy, Mainstreaming: Northern Ireland's Participative-Democratic Approach 1-2 (Hawkes Institute 2002)

injustices linked to human rights violations and well-entrenched power imbalances that exclude some members of the public from playing active roles in energy decisions.[193]

Despite international recognition of the framework from the UN and the African Union, the quest for a legally binding obligation of this imperative on states remains contentious. Arguments from energy scholars on energy and human rights have simply focused on the recognition of energy poverty as a human right issue.[194] This means that there remains a gap when it comes to the use of any legal instrument to resolve the conflict between energy development and protection of human rights. Perhaps this is due to the absence of any legal framework to ensure that human rights are mainstreamed into energy law and policy regimes. At best, the argument has always been the introduction of a new substantive human right to energy access, and the re-interpretation of existing human rights to provide for energy justice.[195] Notwithstanding, national regimes have a role to play in implementing this energy justice imperative by setting out clear and comprehensive domestic legislation to complement the HBRA framework in resolving the conflict. More so, their effort at promoting this imperative could help to ensure that courts are independent and have the tools to prosecute human rights violations arising from energy resources development.

4.6.2 Energy Access and Services

Of great importance to this research is the delivery of universal energy access and services to all people. This is pivotal in relation to economic growth and development as it can enable people lead flourishing lives through energy-facilitated capabilities, such as education, health

[193] Olawuyi 'Energy (and human rights) for all' (n 185) 89.
[194] Damilola S. Olawuyi, *The Human Rights-Based Approach to Carbon Finance* (Cambridge University Press 2016) 1-15.
[195] Oyeniyi Abe, 'The Feasibility of Implementing the United Nations Guiding Principles on Business and Human Rights in the Extractive Industry in Nigeria' (2016) 7 (1) Journal of Sustainable Development Law and Policy 151-54.

and safety, communication among others.[196] Energy access and services are used to describe access to the benefits to be derived by people from energy systems, which is itself comprised of an energy supply sector and the end-use technologies that convert energy derived from the energy carrier (crude oil, natural gas, the sun, wind, and water).[197] Thus, the threshold for this imperative to be met is the delivery of universal access to energy and services for all persons. This will also mean creating different types of access for different users, such as off-grid electricity system to ensure that many people, especially those in rural areas, have access to modern energy and its services.

Energy access is undoubtedly recognised as a basis for the energy justice concept.[198] Access to modern energy and services remains a key imperative for domestic energy law and policy. According to Omorogbe, access to energy and its services is defined as:

> [t]he ability to obtain energy that is adequate, available when needed, reliable, of good quality, affordable, legal, convenient, healthy, and safe for all required energy applications across households, productive enterprises, and community institutions.[199]

The definition above implies that the failure to provide an enabling environment for access to energy induces the problems characterised by the energy crisis in any state. Presently, Africa's development is weighed down by the fact that energy access and consumption levels

[196] Chitzi C. Ogbumgbada, Rasaki Stephen Dauda, and Eduardo G. Pereira, 'Sustainable Development and Off-grid Renewable Electricity: Current Status and Challenges' in Ngozi Chinwa Ole and others (eds), *Regulatory Support for Off-Grid Renewable Electricity* (Routledge, Taylor & Francis 2023) 36-51.
[197] Vijay Modi and others, Energy Services for the Millennium Development Goals (2005), http://www.unmillennuimproject.org/documents/MP_Energy_Low_Res.pdf. accessed 20 June 2022.
[198] Catherine Sandoval, 'Energy Access is Energy Justice: the Yurok Tribe's Tribalizing Work to Close the Native American Reservation Electricity Gap' in Raya Slater, Carmen G. Gonzalez and Elizabeth Ann Kronk Warner (eds), *Energy Justice: U.S and International Perspectives* (Edward Elgar 2018) 166.
[199] Yinka Omorogbe, 'Universal Access to Modern Energy Services: The Centrality of the Law' in Yinka Omorogbe and Ada Ordor, (eds) *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 11.

remain the lowest in the world.[200] Despite the availability of a good stock of energy resources, there remain over 500 million people in Africa that do not have access to power or live without power supplies.[201] According to the International Energy Agency (IEA) 2006, only about 27 per cent of the population in sub-Saharan Africa (SSA) has access to electricity.[202] It is important to acknowledge at this juncture that in the current energy landscape in Africa, there have been arguments that energy policies in the developing world have been set out to address the problem of energy access.[203] However, the challenge is that impact targets are still largely unmet due to inconsistent political will and other socio-political issues.[204] Therefore, efforts made should include formulating energy laws and policies at the domestic level with clear, practical, and realistic measures to achieve more access to energy and services.

A further way to look at the problem of poor impact targets of energy access policies in many developing countries is the lack of practical action from national regimes to provide energy access and services to people who need it the most. There are often energy access policies that are incorporated into law within many states, but the challenge is that they need practical actions and resources to be realised. This often includes statements from national energy policy such as "the nation shall encourage the state and local governments to provide access to electricity to the rural areas through off-grid and other electrification programmes".[205]

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[200] Fui Tsika, Abeeku Brew-Hammond and Y.B. Osafo, 'Increasing Access to Clean Energy in Africa: Challenges and Initiatives' in Donald N Zillman and Others, (eds) *Beyond the Carbon Economy: Energy Law in Transition* (Oxford University Press 2008) 163.

[201] ibid 165.

[202] ibid.

[203] For example, a critical look at the Nigerian National Energy Policy revised in 2018 by the Energy Commission of Nigeria shows that at least theoretically, access to energy is one of objectives that is to be pursued. However, there appears to be no political will to achieve this objective due to the state's highly centralised energy system.

[204] Musbaudeen Bamgbopa and others, 'A Review of Nigerian Energy Policy Implementation and Impact' (2019) <https://www.researchgate.net/publication/332118886_A_Review_of_Nigerian_energy_Policy_Implementation_and_Impact> accessed 20 June 2022.

[205] See the National Energy Policy available at http://rea.gov.ng/wp-content/uploads/2017/09/National_Energy_Policy_Nigeria.pdf accessed 28 June 2022; See also section 88 of

Of great significance to this research is the discourse on whether any binding legal obligation on States to enforce the imperative of energy access and services exists. A starting point might be to look to the international instruments that provide a basis for this argument. For example, the UN SDG 7,[206] could be leveraged to draw inspiration for pursing access to energy under national regimes. However, the proponents here, as argued by Bradbrook, would have to come up with clear strategies to establish the modalities for implementing the imperative of access and services.[207]

A critical look at the SDGs shows that they are set out to persuade rather than compel national regimes to take action to achieve access to energy and services.[208] Even though they can be argued to be premised on the right to development, the non-binding nature makes the instrument not to have strong persuasive weight.[209] In practice, the non-enforcement mechanism of the SDGs is a challenge due to the non-binding nature of the instrument, and more specifically, the lack of legal obligations on individual States. This approach makes implementation now more of a political will of individual States to act. However, there are States where the courts have been used to uphold the obligation to provide energy access and services. For example, South Africa's Constitutional Court decided that 'electricity is one of the most common and important basic municipal services and virtually indispensable,

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the Electric Power Sector Reform Act 2005 available at http://rea.gov.ng/wp-content/uploads/2017/09/Electric-Power-Sector-Reform-Act-2005.pdf accessed 20 June 2022.

[206] United Nations General Assembly Resolution 70/1 (2015) 70th Session Agenda items 15 and 16, UN Doc A/RES/70/1.https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf accessed 22 September 2022.

[207] Adrian J. Bradbrook 'Achieving Access to Modern Energy Services: A Study of Legal Strategies' in Yinka Omorogbe and Ada Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 38.

[208] ibid 39.

[209] Yinka Omorogbe and Ada Ordor, 'Achieving Effective Law and Policy Frameworks for Access to Sustainable Energy in Africa: A Multidimensional Effort in Yinka Omorogbe and Ada Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 379.

particularly in urban society'.[210] The court further stated that its provision is 'a cardinal function, if not the most important function of every municipal government'.[211]

As earlier mentioned, the right to energy access has also achieved a measure of recognition through international instruments such as the African Charter on Human and Peoples' Rights (African Charter). For instance, article 22 of the African Charter has been widely interpreted to mean protecting the right to an environment in which people can develop their full potential and lead productive, creative lives in accordance with their needs and interests.[212] This interpretation implies that people should have a right to energy access and services which is supposed to help them live comfortably. Unfortunately, there is clearly no such right to energy stipulated in an international treaty. Thus, there has not been any recognition of this right from a legal perspective (i.e., whether it raises legally binding obligations) at either the international or domestic levels. At best, scholars argue that human rights instruments could be used to draw attention to the multiple dimensions in which energy systems affect the life, health and living standards of human beings, as well as the means of subsistence of peoples.[213] Human rights instruments such as the African Charter could, therefore, be used to push in favour of legal actions toward the implementation of this imperative at the regional level – and possibly in the near future the recognition of a human right to modern energy access.

Notwithstanding the enforcement challenges above, some states have legal instruments that provide legal backing to principles derived from the SDGs, and by extension the energy

[210] Marlies Hesselman, 'Energy Poverty and Household Access to Energy Services in International, Regional and National Law in Martha Roggenkamp and others (eds), *Edward Elgar Encyclopaedia of Energy and Environmental Law* (Edward Elgar 2021) 695-706, 703.
[211] ibid.
[212] See *Kevin Mgwanga Gumne, et al. v Cameroon* 266/03 file:///C:/Users/Willie/Downloads/achpr45_266_03_eng.pdf accessed 25 August 2022; See also Adrian Bradbrook and Judith Gardam, 'Placing Access to Energy Services with a human Rights Framework' (2006) 28 (2) Human Rights Quarterly 389-415.
[213] Wewerinke-Singh (n 26) 16-26.

justice concept. Already, this is being practiced in the U.S, for example, where policymakers are given the mandate to ensure that key energy statutes, such as the Federal Power Act 1920, set out the goal of "just and reasonable" outcomes for energy systems and processes such as setting energy prices.[214] While there are arguments on indirect enforcement of the imperative of energy access through international instruments, such as a possible, implied right of access to energy,[215] it is unclear whether such arguments could translate into direct enforcement of this imperative.

4.6.3 Just Energy Institutions

A critical look at the global energy system will show that there is an increased interest in ensuring the responsibility of institutions and processes to rectify energy injustices across energy systems,[216] and balance different economic, environmental, and political goals.[217] Globally, the energy sector is seen to be regulated either as a state or privately-owned company and is therefore subject to the abuse of market power.[218] The establishment of just energy institutions, therefore, with (i) regulatory independence; and (ii) clarity of responsibilities and objectives geared toward justice delivery in energy systems, are important aspects of this energy justice imperative. This is because regulatory independence remains a viable tool that could be used in achieving energy justice. The same need applies for energy institutions to have clear and specific responsibilities that advance the energy justice concept. According to Fesler, regulatory independence is often used to mean

[214] Sovacool and Dworkin, *Global Energy Justice* (n 16) 8-9.
[215] See article 16 of African Charter on Human and Peoples' Right (adopted 27 June 1981, entered into force 21 October 1986) OAU Doc CAB/LEG/67/3 rev 5. See also article 1 and 2 of the National Electricity Act in France which guarantee safe, affordable, adequate, and reliable electricity supply to all citizens. For Africa, the 1897 Electricity Act in South Africa, section 10 (1) requires that electricity service providers make electricity available to every applicant who is in a position to make satisfactory arrangement for payment.
[216] Kirsten Jenkins and others, 'Energy Justice: A Conceptual Review' (2016) 11 Energy Research & Social Science 174-182.
[217] Raphael Heffron, Darren McCauley, and Benjamin Sovacool, 'Resolving Society's Energy Trilemma through the Energy Justice Metric' (2015) 87 Energy Policy 168-176.
[218] Paul L. Joskow, 'Lessons Learned from Electricity Market Liberalisation' (2008) 29 The Energy Journal 9-42.

independence of control by the government and legislature – that is an arms-length relationship from the government, including features of organisational autonomy such as earmarked funding and the exception from restrictive civil service salary rules;[219] independence of control by utility companies - that is an arms-length relationship with stakeholders;[220] and independence in the sense of integrity and impartiality - that is independent decision-making competencies.[221] What is important is that energy institutions need to operate independently, without government interference and more importantly have the capacity to be able to advance the objectives of energy justice.

It is pertinent to note that a major characteristic of establishing just energy institutions is the opportunity it offers to regulatory authorities to observe due process in decision-making that affects energy systems. In energy practice, due process is violated in a variety of ways in the course of executing energy projects.[222] The violation could take the form of complete lack of consent, or consent being given only after the construction of the energy project has started, with people who are affected by such a decision not knowing about the project until after the fact, and with the state or other players involved coercing people to participate.[223] Conversely, the establishment of just energy institutions that are truly independent with the ability to observe due process offers decision-makers and people alike a way to address this energy injustice at the domestic level.

Lastly, it is important to consider whether this energy justice imperative imposes binding legal obligations on states, that is to ensure the establishment of just energy institutions. Just like some of the other imperatives discussed above, there are no clear-cut legal obligations on

[219] Barry Mitnick, *The Political Economy of Regulation* (Columbia University Press, New York 1980); See also Anders Larsen and others 'Independent Regulatory Authorities in European Electricity Markets' (2006) 34 (17) Energy Policy 2858-2870.
[220] ibid.
[221] ibid.
[222] Sovacool and Dworkin, *Global Energy Justice* (n 16) 193.
[223] ibid.

states to ensure the establishment of just energy institutions. However, it is the submission of the present author that states are morally bound to deliver just energy systems which can partly be achieved using legislation with clear and comprehensive measures to strengthen the capacity of energy institutions to produce just and reasonable outcomes. It is pertinent to add that the two criteria of regulatory independence and clarity of responsibilities geared towards the delivery of energy justice are thus going to be used here to indicate successful implementation of this energy justice imperative – and in chapter 5 the current approach in Nigeria will be examined against these criteria.

4.6.4 Energy Democracy – Power to the People

Over the years, it has been established that energy is not only central to a modern economy but also part of the basic structure of society.[224] The concept of 'energy democracy' advocates for the integration of "policies linking social justice - energy ownership, and economic equity with renewable energy transitions".[225] Furthermore, it describes a situation where everyone in a community deserves access to sufficient energy – with demands that energy resources and the means of production need to be socialised and democratised.[226] The threshold for this imperative to be met is primarily based on states being able to develop an energy system that allows active participation from citizens and local communities through collective action with the aim of expanding universal energy access and services at the local level.

The energy democracy concept was first developed in Europe and gained popularity as a movement in the U.S among communities seeking to exert control and self-determination

[224] John Rawls, *A Theory of Justice* (Oxford University Press 1973)
[225] Matthew J. Burke and Jennie C. Stephens, 'Energy Democracy: Goals and Policy Instruments for Sociotechnical Transitions' (2017) 33 ENERGY RES. & SOC. SCI 35, 35.
[226] James Angel, 'Strategies of Energy Democracy' (2016) Brussels: Rosa Luxemburg Stiftung https://www.rosalux.de/fileadmin/rls_uploads/pdfs/sonst_publikationen/strategies_of_energy_democracy_Angel_engl.pdf accessed 12 April 2022.

over their collective production and use of energy.[227] The underlining principle behind the concept is similar to the idea of energy sovereignty which envisions a right of peoples and communities to make their own decisions on energy systems that are in line with their circumstances.[228] According to scholars in Europe, the energy democracy concept has origins that can be traced to environmental justice, climate justice, and the recent energy justice constructs in EU countries and the U.S.[229] Thus, it could advance the struggle against extractivism and the idea of corporate ownership of vital and environmental resources to be in favour of democratically controlled and socially owned energy resources.[230] This conception emphasises the idea that energy is a terrain of struggle with practices of energy usage, distribution, and production being shaped by social and political contestation.[231] The analysis so far shows that energy democracy is mainly concerned with shifting power over all aspects of the energy sector – from production to distribution and supply, from finance to technology and knowledge to energy users and local actors.[232] This is to advance a system of control that is beyond the traditional centralised monopoly of utility control of the means of generation and distribution of electricity. Energy scholars describe this system to mean establishing the popular vision of energy democracy that is heavily based on decentralised, local renewable energy sources separable from the national grid.[233]

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[227] Eleanor Stein, 'Energy Democracy: Power to the People? An Introduction' in Raya Salter, Carmen G. Gonzalez, and Elizabeth Ann Kronk Warner (eds), *Energy Justice: US and International Perspectives* (Edward Elgar 2018) 258.

[228] Pere Ariza-Montobbio, 'Energy Sovereignty: Politicizing an Energy Transition' (2015) ENVTL. JUS. ORGS., LIABS. & TRADE 79, 79 <www.ejolt.org/wordpress/wp-content/uploads/2015/09/EJOLT-6.79-84.pdf.> accessed 12 April 2022.

[229] Corad Kunze and Soren Becker, Energy Democracy in Europe: A Survey and Outlook 8 (Rosa Luxemburg-Stiftung, 2014) <www.rosalux.de/fileadmin/rls_uploads/pdfs/sonst_publikationen/Energy-democracy-in-Europe.pdf.> accessed 22 April 2022.

[230] Sean Sweeney and John Treat, Energy Transition: Are We Winning? Working Paper No.9, Trade Unions for Energy Democracy (January 2017) www.rosalux-nyc.org/wp-content/files_mf/tuedworkingpaper9_web.pdf. accessed 24 March 2022.

[231] James Angel, 'Towards Energy Democracy: Discussions and Outcomes from an International Workshop' https://www.tni.org/en/publication/towards-energy-democracy accessed 25 May 2022.

[232] ibid 3.

[233] Stein 'Energy Democracy' (n 227) 260.

According to *Global Justice Now*, people have become more distrustful of the States, because people see the way governments have colluded with big businesses to take power out of the hands of citizens and run societies as commodities for profit.[234] There is a need for people to use collective political power through the State to provide access to energy on the scale that is needed.[235] The approach requires democratic principles to be incorporated into energy systems at the domestic level and to be pursued through the process of policymaking to ensure that people are actively involved in producing the energy they use. Clearly, this would allow for democratic legitimacy and societal acceptance of energy laws and regulations.[236]

As with other energy justice imperatives discussed so far, it is important to also consider whether this imperative has any binding legal obligation on States. For this discourse, the starting point is to understand the principle behind energy democracy and how it could lead to the delivery of just energy systems at the domestic level. This principle is primarily based on people seeing energy production as a right to control or make one's own energy.[237] At the very least, the idea of energy democracy challenges our conventional notions of employing distributed energy resources in an essentially traditional, fossil-fuel dominated energy system.[238] Additionally, its proponents argue and reject the value of a central grid that is regulated by the State and instead seek a more decentralised system that includes localised ownership of energy assets. Against this backdrop, this author submits that the idea of energy democracy could be leveraged to further the energy justice concept, particularly as it is centred on people being given the opportunity to provide energy that is safe, affordable, and sustainable. This is because the concept is a people-centred approach and not one driven by

[234] Angel 'Towards Energy Democracy' (n 231) 8.
[235] ibid.
[236] Kristen van de Biezenbos, 'Negotiating Energy Democracy' (2018) 33 (2) Journal of Land Use and Environmental Law 331-342, 333; Mirko Pečarič, 'A Hierarchical Model of Good Governance: A Unifying Hub for Adaptability, Differences, Similarities, Democracy and Accountability' (2015) 15 Croatian and Comparative Public Administration 909.
[237] Stein 'Energy Democracy' (n 227) 269.
[238] ibid 274.

national governments who already enjoy the traditional centrally dominated structure of energy systems operation.

4.7 The Implication of the Energy Justice Imperatives at the Domestic Level

The implication of the energy justice imperatives for energy systems at the domestic level cannot be overemphasised. A good example of the implication of the imperative of energy access shows that when it is practically engaged by national regimes, it provides not only an increase in the number of people who will have electricity access but an increase in the provision of modern energy to the least advantageous populations in rural and inaccessible places. Omorogbe posits convincingly that disadvantaged rural persons have to be the ultimate beneficiaries of energy access and services.[239] More so, the imperative of energy access and services lead to 'sufficient and healthful' lives as energy access is required to meet basic needs, such as warmth and for the preparation of food.[240]

A further way to look at the implication of the imperatives at the domestic level is through the lens of human and environmental rights protection in energy access projects. As mentioned earlier, the failure of energy proponents to recognize human and environmental rights when executing energy access projects remains an energy injustice. Therefore, the imperative for national regimes of making human rights-based energy decisions could potentially help to achieve energy justice. This could be pursued through rights-based legal and governance infrastructure for energy access projects in individual States. Overall, the energy justice imperatives for international and domestic energy systems as discussed in this chapter provide a framework for developing better energy systems experience that is 'just' and 'reasonable' for all people.

[239] Yinka Omorogbe, 'Legal Dimensions of Access to Modern Energy Services in Africa: Lessons from Nigeria, Ghana, and Rwanda' in Iñigo del Guayo and others (eds), *Energy Justice and Energy Law* (Oxford University Press 2020) 345.
[240] Walker and Day (n 82) 69.

Lastly, there is the challenge of implementation of the imperatives which varies among individual States. The point here is that some imperatives may be easy to achieve in some States while others may be difficult to achieve in other states. The non-binding obligations of the imperatives, which is attributed to international law instruments, where some of the principles are founded, make it more difficult to enforce them at the State level. Additionally, the lack of legal obligations on individual States to implement the imperatives is another impediment that may be affecting the potential impact of some of the imperatives. All of these make implementation of the energy justice imperatives at domestic level more of a political will of individual States to act.

4.8 Conclusion

This chapter set out to examine proposed key energy justice imperatives that could be utilised to address injustices in energy systems and processes. In this regard, the imperatives were explored in the context of how individual States could provide affordable, reliable, efficient, environmentally friendly, proactively governed, and socially acceptable just energy systems to all people. As has been argued by energy scholars, the full extent and diversity of justice implications are neglected in the energy life cycle.[241] Thus, the proposed energy justice imperatives discussed in this chapter provide an analytical framework that could help us to understand the various justice implications of whole energy systems.

One key argument canvassed in this chapter is the call for the energy justice imperatives, both at the international and domestic levels, to be engaged to deliver just energy systems to all people. The purpose, amongst others, is to ensure the delivery of energy systems that realise

[241] Jenkins Kirsten, 'Discourses of Energy Justice: The Case of Nuclear Energy' (PhD Thesis, University of St Andrews 2016) https://research-repository.st-andrews.ac.uk/bitstream/handle/10023/10255/KirstenJenkinsPhDThesis.pdf?sequence=3 accessed 20 August 2022.

the goal of efficiently and justly producing and delivering energy to all.[242] It is clear from the discourse that the energy justice imperatives are based on the need to utilise justice principles for the realisation of just energy systems at all levels. Admittedly, achieving this objective is an uphill task that may require strong political will on the part of not only policy makers but also national governments.

To ensure some level of enforcement of the imperatives, States may have to look towards some form of policy guidance or specific laws. However, there is generally a preference by national governments to rely on policy measures rather than legislation as a channel to regulate energy systems.[243] As argued earlier in this chapter, the challenge is that just as soft law development is approached by national governments with hardly any obligation to enforce them, the same applies at the policy level and, by extension, the energy justice imperatives. Bradbrook argued convincingly in this regard that policy approaches in certain circumstances could be a failure on the part of governments to recognise the role legislation could play in energy systems.[244]

Overall, the argument canvassed in this chapter is that energy systems both at the international and domestic levels are increasingly requiring a nuanced understanding of social justice concerns that are explicit. These social justice concerns, translating into injustices in the global energy systems require a systematic utilisation of the energy justice concept and its imperatives to address them. However, a major problem that remains to be seen is that there are yet no international instruments binding States to the imperatives and a global just energy system target.

[242] Sovacool and Dworkin, *Global Energy Justice* (n 16) 14.
[243] Bradbrook 'Achieving Access to Modern Energy Services' (n 207) 41.
[244] ibid.

In the next chapter, this research will critically consider the extent to which the energy justice imperatives could be implemented in Nigeria. To do this, it will examine certain thresholds or criteria required to be met to successfully implement the imperatives in domestic energy systems.

CHAPTER FIVE

Implementing the Energy Justice Imperatives in Nigeria's Energy Systems

5.0 Introduction

> Concerns about energy justice are focused on identifying when and where injustices occur in energy systems and how 'law' and 'policy' can best respond to them.[1]

Chapter four examined energy justice imperatives drawn from the concept to not only address energy challenges, but to help deliver just energy systems both at the international and domestic levels. More specifically, it analysed how effective the imperatives could be when engaged by policy makers and decision-makers to address contemporary energy challenges.

This chapter offers critical analyses of the implementation of the energy justice imperatives with a view to finding whether they offer new solutions to the intractable energy challenges faced by Nigeria. The chapter will, therefore, analyse how the imperatives could be used by policy makers and energy decision-makers to resolve the energy challenges in Nigeria and help realise just energy systems. Further, it discusses how, and the extent to which, the imperatives could be implemented through legal, policy, regulatory and institutional tools in Nigeria and highlights the implications of their implementation in the country's energy systems. We note that the policy-making process is a broad course of action that is comprised of strategies and objectives that guide the energy life cycle. Further, the process comprises the formation of law and policy systems to achieve both short and long-term goals related to the energy sector. In practice, both law and policy frameworks present an invaluable channel to implement the imperatives, whilst at the same time conducting structural transformation

[1] Raphael Heffron, Darren McCauley and Benjamin Sovacool, 'Resolving Society's Energy Trilemma through the Energy Justice Metric (2015) 87 Energy Policy 168-177.

for the delivery of just energy systems. This author advocates for the use of law, policy, institutional and regulatory tools to implement the imperatives because they have the capacity to deliver the specificity of binding obligations to relevant actors and also create avenue for their enforcement. However, this is achievable only if it is approached in a right and pragmatic way and thoroughly carried out by national authorities.

For Nigeria, it is not in doubt that delivering just energy systems is important to resolve some aspects of its energy challenges as discussed in Chapter 2 of this research. This is because there remains a link between challenges created by the country's energy sector and unjust energy systems arising from the institutional, legal, policy and regulatory frameworks. This is where the implementation of the energy justice imperatives could play a significant role by measuring them against the current system in Nigeria with a view to finding how far the country is meeting the threshold or criteria for each of the imperatives as discussed in Chapter 4. Overall, the goal of implementing the imperatives in Nigeria is to be able to produce universal access to energy systems that is affordable, reliable and sustainable. The starting point towards successful implementation of the imperatives is to analyse how best to implement them, for example through institutional, legal, policy and regulatory tools, some of which may already exist in Nigeria's energy sector. Whilst these tools will be explored further in this chapter, the overall aim is to ensure the delivery of energy justice in Nigeria.

The main research question this chapter seeks to answer, therefore, is 'to what extent can the energy justice imperatives be implemented in Nigeria?' The purpose of implementing the imperatives in Nigeria has two dimensions. First, implementing the imperatives in Nigeria could help to identify where injustices occur in the country's energy systems, particularly across the energy life cycle, i.e., from extraction to production, supply, consumption, and waste. As previously noted, the energy justice concept permeates different aspects of energy

systems, ranging from conversion to distribution, and use.[2] Second, the implementation of the imperatives will enhance our understanding of how the concept of energy justice and the principles embedded in it should be applied to different aspects of energy systems. Thus, the process of implementing the imperatives will potentially highlight new opportunities and approaches for policy makers and energy decision-makers to address different aspects of energy challenges in Nigeria.

After this introduction, the rest of this chapter is divided into four sections. Section 1 provides the context of what it means to implement the energy justice imperatives. Section 2 analyses the situation in Nigeria in two-folds. First, it will assess how far Nigeria already fulfils the requirements of each of the energy justice imperatives. Secondly, the section will analyse how the energy justice imperatives could be implemented in Nigeria to achieve them in full, with a focus on institutional, legal, policy and regulatory tools. As discussed above, the use of these tools would help to better realise the objectives of the energy justice framework by way of setting out specific actions for relevant actors. Section 3 highlights the implications of their implementation in the country's energy systems. Section 4 discusses how the lack of accessible, transparent, and verifiable data poses an impediment to the implementation of the energy justice framework. Section 5 summarises all the analyses - focusing on how the implementation of the imperatives could offer new solutions framed from an energy justice approach to resolving the energy challenges in Nigeria.

5.1 Background to the Implementation of the Energy Justice Imperatives

This section discusses what it means to implement the energy justice imperatives through identified legal, policy, regulatory and institutional tools. Further, it offers an analysis of the context in which the imperatives could be implemented in Nigeria. This latter aspect is

[2] Benjamin K. Sovacool and Michael H. Dworkin, 'Energy Justice: Conceptual Insights and Practical Applications' (2015) 142 Applied Energy 435-444 at 436.

necessary as we must first understand the specific energy challenges faced by an individual state (in this case the Nigerian State) before analysing whether the imperatives drawn from the energy justice concept could be used to resolve them.

Over the years, policies set out at the global energy system level have often been viewed as largely detached from principles of justice, even though they tacitly represent sets of values around how energy systems ought to operate and for whom.[3] Perhaps the reason for this is connected to the over-reliance on conventional energy, which has largely shaped the global energy system, consequently leading to different energy injustices. This observation suggests that the failure of energy systems to take justice principles into account is linked to factors that exacerbate the energy challenges in many countries.[4] For example, it is widely observed that energy systems in sub-Sahara African (SSA) countries tend to produce a variety of injustices to those they are designed to serve.[5] A deeper look into the different energy injustices in the SSA region will show that they are linked to challenges associated with the legal, policy, regulatory and institutional frameworks applicable in the energy sectors of various countries in the region.[6] This explains why this research will identify specific tools in the system that could be used to advance the objectives of the energy justice imperatives in Nigeria. Thus, the present author draws out legal, policy, regulatory and institutional tools that could be leveraged in Nigeria, particularly from an energy justice approach, to help resolve the challenges faced in its energy sector.

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[3] Kirsten Jenkins, Benjamin Sovacool and Darren McCauley, 'Humanizing Sociotechnical Systems through Energy Justice: New Conceptual Frameworks for Global Transformative Change' (2018) 117 Energy Policy 66-77.

[4] Benjamin Jones, Benjamin Sovacool and Roman Sidortsov, 'Making the Ethical and Philosophical Case for "Energy Justice"' (2015) 37 (2) Environmental Ethics 145-168; Paul Wilkinson and others, 'A Global Perspective on Energy: Health Effects and Injustices' (2007) 370 Lancet 965-977.

[5] Hanri Mostert and Helen Van Niekerk, 'Disadvantage, Fairness, and Power Crises in Africa: A Focused Look at Energy Justice' in Yinka Omorogbe and Ada Odor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018)

[6] Zivayi Chiguvare and Helvi Ileka 'Challenges and Opportunities for Increased Energy Access in Sub-Saharan Africa, With Special Reference to Namibia' in Oliver Ruppel and Bernd Althusmann (Eds*) Perspectives on Energy Security and Renewable Energies in Sub-Saharan Africa: Practical Opportunities and Regulatory Challenges* (Macmillan Education Namibia 2016) 21.

Nigeria remains an interesting example of how the legal, policy, regulatory and institutional frameworks in the energy sector deliver injustices, and therefore, contribute to the country's energy challenges. For instance, the exploration of oil and gas resources in the Niger Delta Region (NDR) results in serious environmental and social injustices, which also cause a significant challenge of environmental impact and crisis.[7] At the same time, the dependence on fossil fuels in Nigeria is unsustainable and, therefore, poses its challenges to the delivery of just energy systems, especially to the people of the NDR. For this reason, the imperatives drawn from the energy justice concept could offer new solutions to different aspects of energy challenges in Nigeria's energy systems.

Against the background above, it is important to note that to address aspects of energy injustices that are exacerbating the energy challenges in Nigeria, there need to be concerted efforts at the national level to implement the energy justice imperatives within the country's energy systems. The approach should be to ensure that the institutional, legal, and policy frameworks in the Nigerian energy sector are set up not only to address traditional energy challenges, but also the ones underpinned by justice concerns. Perhaps, an optimum way to achieve this could be by implementing the energy justice imperatives within Nigeria's energy law and policy frameworks through two approaches. Firstly, through policy tools, that is developing clear and realistic measures through the National Energy Policy (NEP) 2018 (i.e., having to undertake a review of the various policy documents) which presently serves as the country's road map to a better energy future,[8] and the National Renewable Energy and Efficiency Policy (NREEEP) 2015. The analysis will be done with a view to finding overall whether the current energy policy regime meets the different thresholds of the energy justice imperatives. Secondly, implementation could be championed through specific legal tools. For

[7] Olubayo Oluduro, Oil Exploitation and Human Rights Violations in Nigeria's Oil Producing Communities (Intersentia 2014) 231.
[8] Oluseyi Ajayi and Oluwatoyin Ajayi, 'Nigeria's Energy Policy: Inferences, Analysis and Legal Ethics Toward RE Development' (2013) 60 Energy Policy 61-67.

instance, one possibility is to use the present Electricity Bill 2021 which is before the Nigerian parliament and other legal tools to ensure that Nigeria's energy systems can deliver energy justice. The Electricity Bill seeks to, among other things, repeal the Electric Power Sector Reform Act 2005 and consolidate all laws in the industry to achieve a robust energy mix through the development of renewable energy sources.[9] This new Bill provides an encouraging start for new ways to approach the energy challenges in Nigeria, and thus demonstrates that this research is timely.

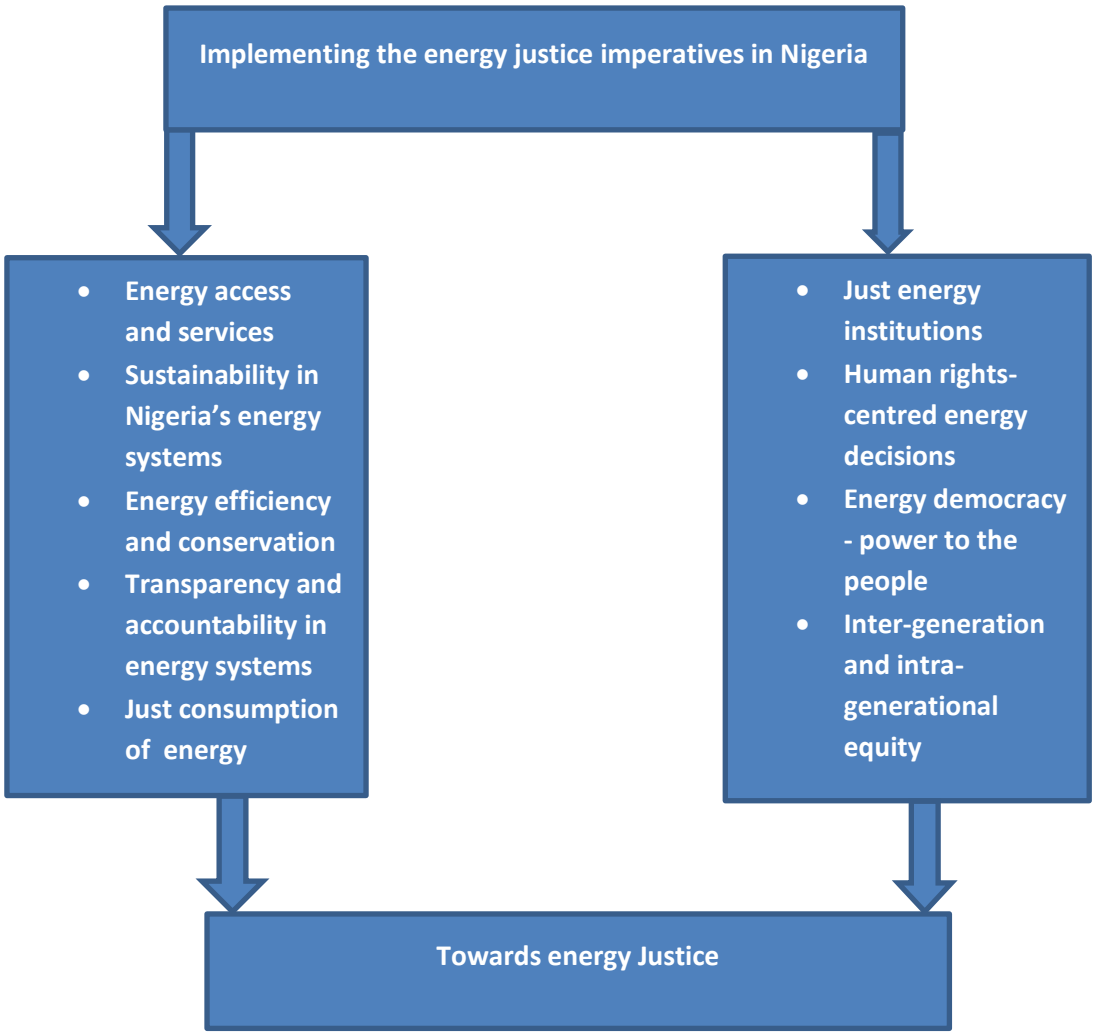
Importantly, it is likely that the energy justice imperatives will require different approaches in terms of their implementation, and that the same imperatives will require different approaches in different countries. This observation is attributed to the fact that energy challenges arise in nations and regional economies with well-established energy generation profiles and liberal, market-based distribution systems, as well as in nations and regions where access to energy is less comprehensive and forms of energy generation and distribution are more limited.[10] As was discussed in chapter two, energy challenges are often associated with the nature of the institutional, legal, and policy frameworks applicable to the energy sector. Hence, it is reasonable to expect that many energy challenges are linked to national energy law and policy frameworks, and how they interact with supply and demand. All these points imply that an understanding of energy injustice issues existing in Nigeria's energy systems and manifesting as challenges is relevant to how the imperatives are to be implemented in the country. As was stated in chapter 4, the imperatives are drawn from the energy justice concept, and from their analysis, they remain viable channels through which energy justice could be achieved in the Nigerian State.

[9] DENTONS ACAS-LAW Renewable Energy: Key Highlights of the Electricity Bill 2021 available at <Renewable Energy Newsletter May 2022.pdf> accessed 110 July 2022.

[10] *Iñigo del Guayo and others, 'Introduction' in Iñigo del Guayo and others (eds), Energy Justice and Energy Law (Oxford University Press 2020) 5.*

As the analyses above indicate, implementing the energy justice imperatives may require first an understanding of the type of energy challenges experienced by individual States, where the imperatives could feature in the system, and then identifying relevant tools that could be used to implement them in order to resolve energy challenges. Perhaps the reason for the above idea is to find whether a specific imperative that is well-suited for a developed State would be relevant for a developing State as energy challenges differ. Therefore, to maximise the benefits of the imperatives, there is a need for individual States to first understand their energy challenges, especially aspects linked to the institutional, legal, policy and regulatory frameworks. It is in this light that this chapter demonstrates how the energy justice imperatives are to be implemented in Nigeria through legal, policy and institutional tools. This is done to ensure the delivery of energy justice in Nigeria.

Figure 5. *Sets out the energy justice imperatives to be implemented in Nigeria.*



Source: *Authors' compilation*

5.2 Energy Justice Imperatives: How to Implement them in Nigeria's Energy Systems

This section sets out to analyse the imperatives drawn from the energy justice concept in order to find whether they could resolve Nigeria's long-running energy challenges. It also identifies the legal, policy, regulatory and institutional tools through which the implementation of the energy justice imperatives could be undertaken in Nigeria. This is done with a view to finding whether the imperatives provide useful tools to help tackle Nigeria's energy challenges.

As set out in table 5.1, the energy justice imperatives to be analysed are as follows: (1) Access and services; (2) Sustainability in energy systems; (3) Energy efficiency and conservation; (4) Just energy institutions (5) Transparency and accountability; (6) Human rights-centred energy decisions; (7) energy democracy – power to the people; (8) just energy consumption; and (9) Inter-generational and intra-generational equity. In Chapter 4, the analysis of each imperative established a threshold or criteria, or suggested mechanism for achieving them in order to deliver energy justice. Those criteria will now be used as the starting point to assess how far Nigeria already achieves the imperatives. Where the imperatives are not met already, the analysis will move to discuss possible ways in which Nigeria could implement them, focusing on institutional, legal, policy, institutional and regulatory tools that would make it possible.

It would be seen from the analysis of the imperatives for Nigeria's energy systems in this chapter, the discussion seems to have moved beyond the international and domestic dimension set out in Chapter 4. This is because at this stage, the research prioritised the ones that could potentially help to address specific challenges that are exacerbating the energy crisis in Nigeria. Thus, in this section, this author analysed specific energy justice imperatives that are important for resolving the long-running challenges in Nigeria's energy systems. In this regard, the research identifies specific areas where injustices are manifested regardless of whether they exist at the international or domestic energy systems and discussed them in the context of suggested tools for their implementation in Nigeria.

5.2.1 Access and Services

Before discussing the proposed tools to implement this imperative, it is appropriate to first look at how far Nigeria is currently meeting the legal threshold of universal energy access and services. The suggested threshold for this imperative to be met is when the Nigerian state is able to provide (i) universal energy access and services for households in Nigeria; (ii)

universal access to modern energy, i.e., electricity and gas. We note that when these thresholds are met, especially when they are measured in terms of availability, reliability and the extent and quality of connection across the country, they could help the Nigerian State achieve great strides in human development and better the economy.

Nigeria has one of the largest natural gas reserves in Africa, and is one of the largest exporters of liquefied natural gas (LNG) in the world, but the electrification rate remains below 50%.[11] The country is also ranked by the World Bank as having the largest electricity access deficit in the world, as almost half of the Nigerian population still relies on non-commercial fuels such as biomass for cooking, lighting, heating, and commercial activities, while an estimated 27.9 million households and 10.6 million small and medium-sized enterprises (SMEs) suffer from prolonged power outages and undersupply.[12] The challenge of energy access and services is quite prevalent in Nigeria, even though there is a national energy policy document (the 2018 NEP) that aims to address the issue. However, there remains no clear practical strategy on how it could be implemented. Regrettably, the approach to addressing the access issue has always been a periodic review of the policy with a view to theoretically state the targets but no clear implementation strategy. The most recent review of the NEP led to the establishment of the Rural Electrification Agency (REA) under the Electric Power Sector Reform Act (EPSRA) 2005 with a mandate to achieve 75% electricity access.[13] The goal of the REA was to connect all local government areas in Nigeria to the national grid. Regrettably, it has been reported that political support for an ambitious

[11] United States Energy Information Administration (EIA) 2020 https://www.eia.gov/international/analysis/country/NGA accessed 20 June 2022.

[12] The World Bank, Universal Access to Sustainable Energy Will Remain Elusive Without Addressing Inequalities (2021) https://www.worldbank.org/en/news/press-release/2021/06/07/report-universal-access-to-sustainable-energy-will-remain-elusive-without-addressing-inequalities accessed 20 June 2022.

[13] Energy Commission of Nigeria, National Energy Policy 2018 https://www.energy.gov.ng/Energy_Policies_Plan/National%20Energy%20Policy.pdf accessed 20 June 2022

programme of the REA does not exist and must be built if power must reach many rural people.[14]

For the household access rate, there is a clear-cut disparity between urban and rural areas in Nigeria.[15] According to the World Bank statistics, the rural population make up about 51% of the total population of the country, of which only 41% have access to electricity as compared to 86% of the urban population.[16] The population in rural areas is quite dispersed and this creates accessibility challenges, together with an environment that is underdeveloped in terms of basic infrastructures and social amenities. For example, the northern region of the country has less access to both electricity and modern cooking fuels.[17] The disparity between urban and rural areas is attributed to successive Nigerian governments prioritising urban energy access over rural energy access. This idea of the government prioritising urban areas stems from the erroneous belief that development is much more beneficial to urban population and that it would help garner more support for the government.

The same argument could be made when looking at the current rate of access to modern energy in Nigeria. It is observed that Nigeria's electricity service has never been extended to its citizens in any form approaching universal access.[18] Currently, Nigeria's daily generation of electricity at its peak is less than 4,000 MW for a population of over 180 million people as opposed to a country like South Africa, which generates an estimate of over 50,000 MW for a

[14] Otu Eleri Ewah, Okechukwu Ugwu, and Precious Onuvae, *Expanding Access to Pro-Poor Energy Services in Nigeria*. Nigeria (2012) https://www.osti.gov/etdeweb/servlets/purl/1057727 accessed 20 June 2022.
[15] Raji Abdullateef and others, 'Rural Areas: The Real Home of the Nigerian Economy' (2017) 4 (2) International Journal of Social Sciences and Educational Studies 1–9. https://doi.org/10.23918/ijsses.v4i2sip1 accessed 30 July 2022.
[16] See the World Bank. Indicators Data on Nigeria's Access to Electricity for both Urban and Rural population. https://data.worldbank.org/indicator accessed 30 July 2022.
[17] Blessing Ugwoke and others, 'A Review of Nigeria Energy Access Studies: The Story so far' (2020) 120 Renewable and Sustainable Energy Reviews 109646.
[18] Sam Amadi, 'Improving Electricity Access through Policy Reform: A Theoretical Statement on Legal Reform in Nigeria's Power Sector' in Yinka Omorogbe and Ada Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 363.

population that is about a third of that of Nigeria (approximately 58 million).[19] This speaks volumes of the rate of electricity connection in Nigeria which is significantly poor and has continued to affect the economic growth of the country. Estimates show that based on current demands in Nigeria, the country must generate at least 40,000 MW to meet energy demands and address the deficiency.[20] It is observed that while the rate of electricity connection to the national grid remains very low, the quality of energy service is also relatively poor.[21] This is attributed to the entire power system being poorly maintained as the infrastructures have become antiquated such that there is a dire need to overhaul the entire energy system.[22] As is evident from the figures, Nigeria's current energy approaches have not allowed it to meet this imperative – now we will analyse more specifically where the problems might be lying within the current approaches.

In Nigeria, multiple government entities have the authority to make decisions or seek actions relevant to the country's energy sector, ranging from the legislature to government ministries and agencies and other regulatory bodies. The entities are the Ministry of Power, the Ministry of Petroleum Resources through its regulatory bodies, i.e., the upstream, midstream and downstream petroleum operation, the Energy Commission of Nigeria (ECN), the Nigerian Electricity Regulatory Commission (NERC), and the Rural Electrification Agency. All of these show that Nigeria has ministries in place, policies and laws that are supposed to help the country meet the threshold of this imperative. For instance, the Petroleum Industry Act (PIA) 2021 and the EPSRA 2005 are laws that are relevant to Nigeria's energy sector and are within the remit of the Ministry of Petroleum Resources and the NERC respectively. These two laws remain a valuable channel through which the imperative of energy access and

[19] Moses Emetere, O Aubo and L Chikwedu, 'Erratic Electric Power Challenges in Africa and the Way Forward via the Adoption of Human Biogas Resources' (2021) 39 (4) Energy Exploration & Exploitation 1349–1377.
[20] The World Bank, Universal Access to Sustainable Energy (n 12)
[21] Amadi (n 18) 347.
[22] Ugwoke and others (n 17) 3.

services could be implemented in Nigeria. The idea is to leverage the available legal framework to meet the threshold of universal access.

The poor access to modern energy supply in Nigeria, particularly in the rural areas attests to the window-dressing nature of many rural electrification projects and the lack of strong political will to offer viable solutions to the energy challenges. As above, the efforts exerted towards rehabilitating and maintaining existing systems have not yielded benefits for the nation's power supply because of poor regulatory and institutional frameworks that are seen as impediments to attracting investments. More so, the polity and the government tenure system continue to render an unconducive business climate for investors to help the country to achieve universal energy access.[23] It is instructive to note that the gross underperformance of Nigeria's energy sector has brought on severe electricity unavailability and financially bled the Nigerian economy across all sectors.[24] The unreliable energy supply has compelled many households, firms, and industries in Nigeria to resort to auto-generators for their electricity needs. All of this is to help with their energy demand, production activities and capabilities so as to keep their businesses running.

According to Omorogbe, one of the factors militating against the provision of universal energy access is the failure to place less advantaged persons, particularly those in rural areas at the centre of energy policy and development.[25] It is against this background that we find a huge disparity existing between energy access provision in urban and rural areas with the latter facing major access challenges. Thus, it can be argued that this approach by the Nigerian government has failed to deliver energy justice to the people who live in rural areas and lack modern energy access and services that are supposed to help them live a better life.

[23] ibid 3
[24] ibid 4.
[25] Yinka Omorogbe, 'Legal Dimensions of Access to Modern Energy Services in Africa' in *Iñigo del Guayo and others (eds), Energy Justice and Energy Law (Oxford University Press 2020) 344.*

The reason for the poor rural electrification rate is also attributed to the lack of grid expansion to rural areas. Admittedly, there have been some attempts to address this situation with the establishment of the REA under the EPSRA 2005 with the vision to mobilise capital for sustainable private sector-driven investment in rural electrification. However, poor funding from the government's budgetary allocation to the REA has significantly affected the ability of the agency to carry out its task. Against the background above the following section analyses possible tools Nigeria could use to meet the threshold of universal energy access and services.

5.2.1.1 Legal Tools

The threshold of universal energy access and services in Nigeria could arguably be achieved by using the PIA 2021 and the current Electricity Bill before the Nigerian parliament to enhance off-grid energy access to rural areas where energy production is conducted. This approach would involve expanding the opportunities to increase energy access which can feed into an off-grid system for areas with poor connection to the national grid. For example, the FGN could introduce provisions in the PIA (through a review process) that would allow for direct generation of energy in oil producing communities through the use of gas flared by Multinational Corporations (MNCs). This could be done by establishing off-grid systems that will be powered directly with gas that is flared in oil producing communities.[26] Strategies to achieve this could include the building of a fully-functioning off-grid system that would focus on powering rural areas through a priority needs assessment and a roll out of an action plan designed to provide universal access to rural areas that are currently underserved. To successfully achieve this, there is a need to have in place clear parameters that could be established to see how PIA through the regulatory bodies could be utilised to drive the

[26] Bukola Faturoti, Godswill Agbaitoro and Obinna Onya, 'Environmental Protection in the Nigerian Oil and Gas Industry and *Jonah Gbemre v. Shell PDC Nigeria Limited*: Let the Plunder Continue' (2019) 27 African Journal of International and Comparative Law 230.

increase of energy access through power generated using gas. Particularly, Nigeria could utilise gas for the production of more energy that could be transferred directly to an off-grid system in the NDR where the exploration and production of oil and gas are conducted. Additionally, the FGN could potentially look to establishing wind turbines in the NDR as it is known to be a riverine area. This could also be introduced in the Electricity Bill as it will help to diversify the country's energy sources by providing clean energy to areas that are underserved by the national grid.

Secondly, Nigeria needs to constitutionalise the right to universal energy access and services as a tool to implement this imperative. The constitutionalising of energy access rights will go a long way to place a legally binding responsibility on the government to provide universal energy access and services to the Nigerian people. At the moment, the right to energy access in Nigeria is not explicitly provided in the Nigerian constitution. It is indirectly provided under Chapter II of the 1999 Constitution (as amended) i.e., under the Fundamental Objectives and Directives Principles of State Policy which stipulates the duty and responsibility of the government to work towards harnessing the resources of the nation to provide national economic prosperity for all Nigerians.[27] An extended interpretation to this chapter could be made in the form of the government's responsibility to guarantee peoples' right to development – one which is potentially achieved through the provision of energy access. Regrettably, the responsibility under Chapter II of the 1999 Constitution is not enforceable by the courts in Nigeria.[28] This tends to hinder any legally binding actions that could be brought against the government to enforce the right to energy access and services in the country.

[27] See Chapter II of the 1999 Constitution of Nigeria (as amended) https://www.constituteproject.org/constitution/Nigeria_2011.pdf?lang=en accessed 30 July 2022.

[28] See section 6 (6) (c) of the 1999 Constitution (as amended) provides that shall not except as otherwise provided by this Constitution, extend to any issue or question as to whether any act of omission by any authority or person or as to whether any law or any judicial decision is in conformity with the Fundamental Objectives and Directive Principles of State Policy set out in Chapter II of this Constitution.

This author, therefore, argues here that there is a need to have a system in place that explicitly constitutionalises energy access rights in Nigeria. The constitutionalisation of access rights could be used as a strategy to provide universal energy access and services that have the pivotal, added advantage of enforceability. The approach of constitutionalising energy access rights in order to address energy challenges is beginning to gain traction in some other countries. For example, Mesoamerican countries have constitutionalised the provision of energy access and services, and have made great strides to increase population access to electricity.[29] A brief survey of the Mesoamerican legal regimes in the energy sector reveals that during the last three decades, all the countries in the region modified their electricity industry legal frameworks by passing new legislations.[30] What is striking about the modification of the legal regime in Mesoamerican countries is the fact that the new laws in their electricity industry are now set out as key instruments that seek to promote energy justice through the provision of access and services. This implies that they are beginning to put energy justice at the centre of their thinking in terms of the operation of energy systems.

Presently, Mesoamerican countries have also enacted legislation that seeks to promote competition and participation of the private sector as strategies to increase energy access and services to the people.[31] This approach allows the private sector a degree of latitude to help generate electricity - that is increasing energy access for more people and has proved to be an effective way to achieve energy justice. Thus, implementation of the imperative of access and services in Nigeria could begin with the enactment of specific legislation to support the right to universal access to energy and services as the threshold. This could lead to an increase in energy access measures and is a viable option that could be adopted by the FGN to address

[29] José Juan González, 'Energy Justice, Law, and Poverty in the Context of Mesoamerican Countries' in *Iñigo del Guayo and others (eds), Energy Justice and Energy Law (Oxford University Press 2020) 293.*
[30] ibid 299.
[31] ibid 300. See also Article 6 of Law Number 6 in Panama by which regulatory and institutional framework for the provision of the public electricity service is dictated.

the challenges associated with poor energy access in Nigeria. This form of implementation could also be driven by the need to identify regions in the country where poor energy access has remained as an impediment to economic growth and then taken into account when enacting such legislation.

Implementation of the imperative through the above approaches would help ensure that government actions and interventions, as actors of energy justice, safeguard citizens' right to universal energy access.[32] As argued in chapter 4, the access imperative imposes an obligation on States to secure universal access to energy, including developing regulations that would help ensure energy distribution, and use.[33] Thus, it can be drawn from the analysis that the implementation of this imperative through specific legal tools including taking the form of a rights-based approach to universal energy access and services is a strategic way to address energy access and poverty challenges in Nigeria.

5.2.1.2 Regulatory Tools

In terms of the regulatory tools for the implementation of this imperative, it is important to first understand that the scale of regulatory challenges in the Nigerian energy sector should not be underestimated. Some of the challenges include hostile regulatory culture, regulatory capture by players in the sector, implementation capacities amongst a range of different agencies and actors, etc.[34] This author argues here that regulators could be used as a tool to create more energy access and services in Nigeria. To achieve this, there is a need to set them on a new path which means that urgent and concerted regulatory actions toward the creation

[32] Chian-Woei Shyu. 'A Framework for 'Right to Energy' to Meet the UN SDG7: Policy Implications to Meet Basic Human Energy Needs, Eradicate Energy Poverty, Enhance Energy Justice, and Uphold Energy Democracy' (2021) 79 Energy Research and Social Science 102199.

[33] Marlies Hesselman, 'Energy Poverty and Household Access to Energy Services in International, Regional and National Law in Martha Roggenkamp and others (eds), *Edward Elgar Encyclopaedia of Energy and Environmental Law* (Edward Elgar 2021) 695-706.

[34] Eddy Wifa, Chidinma Kelvin Amaeze and Eze Emem Chioma, 'Potential Conflicts of Interest in the Nigerian Department of Petroleum Resources as both Economic and Environmental Regulator (2016) 34 (7) International Energy Law Review 306-312; See also Eghosa Osa Ekhator, 'Public Regulation of the Oil and Gas Industry in Nigeria: An Evaluation' (2016) 21 (1) Annual Survey of International and Comparative Law 43-91.

of energy access in Nigeria are needed. This requires the regulators to create an enabling environment that will allow for significant investment in new generating capacity to expand energy access, and more network assets and introduce demand-side measures in rural and urban areas that are underserved. In reality, this approach would require a high degree of financial and regulatory certainty in Nigeria's energy sector.

The approach to implementing the imperative in Nigeria through the various regulatory bodies could be pursued through an amendment of regulatory bodies' statutory duties to ensure that they reflect a new 'principal objective' of promoting energy access and services. The amendment would include provisions for other regulatory duties that would include obligations to secure a diverse and reliable supply of electricity, promote energy efficiency, and have regard for environmental impacts. For example, the NERC empowered by the ESPRA to oversee energy generation, transmission and distribution in the entire country,[35] could collaborate with other regulatory bodies under the Ministry of Petroleum Resources to identify communities that host oil and gas operations but with poor energy access and services. Here, the regulatory bodies could set out clear strategies on where the new energy generation facility will be situated and how it will operate, but most importantly linking it up to energy production facilities in host communities. It is important that the strategies deployed are specific, not just about their policy goals, but about the particular means by which the goals will be secured, thus providing additional clarity and certainty.

5.2.1.3 Policy Tools

Another optimum way to implement the imperative of energy access and services is through the use of policy tools, particularly to pursue practical diversification of energy options in Nigeria. The aim is to have an energy system in place that allows for a robust energy mix in

[35] See section 32 (2)-(d) of the Nigerian Electric Power Sector Reform Act 2005 http://lawsofnigeria.placng.org/laws/E7.pdf accessed 22 July 2022.

the quest to address energy challenges. To achieve this, relevant actors could use the 2018 National Energy Policy document which sets the road map for Nigeria's energy future to set clear targets for practical diversification of energy options to meet the threshold of universal energy access and service. We note that Nigeria possesses abundant renewable energy resources, such as solar, which could serve most parts of the northern region of the country, and biomass and hydropower, which could serve other parts of the country with large bodies of water.[36] Regrettably, from 1896 to date, no single megawatt of electricity in the national grid has been drawn from renewable sources in order to create more energy access.[37] While some renewable energy-based Independent Power Producers (IPPs) have been granted a licence by the Federal Government to generate power for the national electricity grid, there has not been a significant success from the operations of the IPPs. At best, renewable energy options, except for hydropower sources which are capable of boosting energy access in Nigeria, are only being generated off-grid minimally for captive use for private residences and businesses.[38]

Currently, therefore, the existing policies that seek to promote the development of renewable energy sources have been insufficient in helping to address Nigeria's energy deficit to date. This is partly because policies set out to develop renewable energy in the country have always been aspirational without including specific strategies and targets for their realisation. Thus, the implementation of the energy justice imperative of access would require the FGN through its relevant agencies to set out clear policy targets that are legally-binding and are geared towards the acceleration of universal energy access in Nigeria. The approach here should be setting out specific policies that seek to achieve practical diversification of energy

[36] Sunday Olayinka Oyedepo, 'Energy and Sustainable Development in Nigeria: The Way Forward' (2012) 2 (15) Energy, Sustainability and Society 1-17.
[37] Amadi (n 18) 347.
[38] ibid.

sources. In practice, policy targets impose duties on ministers rather than the regulator, and provide harder-edged commitments to achieve specific outcomes by a specified date.[39]

It is important to note at this juncture that universal access and services can be enhanced by way of setting targets through policy tools. The idea of setting specific targets has a high symbolic value, raises the issue in question (in this case ensuring universal energy access and services in Nigeria), and provides clarity about the future direction of policy. According to energy scholars, a clear policy target and timetable for action creates a greater sense of urgency to take practical action, and acts as an important reference point for all of those involved in the delivery of its goal.[40] In a practical sense, setting out energy policy targets could have a galvanising effect on policy makers, thus, prompting a vital reappraisal of key policies and leading to substantial new initiatives in Nigeria.

5.2.2 Sustainability in Nigeria's Energy Systems

Over the years, sustainable energy development, in particular through renewable energy has emerged as one of the most promising means of addressing the challenges of energy demand.[41] For the sustainability imperative threshold to be met, there arguably needs to be the provision of sustainable energy that requires the development and implementation of renewable energy technologies that can help the country achieve the desired level of sustainability in its energy systems. This implies the need for use of renewable energy to create a robust energy mix, energy-efficient technologies, and sustainable use of conventional energy resources to resolve energy challenges.

Nigeria's current energy systems are unsustainable for two reasons, namely (i) there is a lack of renewable energy production on a large scale; and (ii) the continued reliance on oil and gas

[39] Aileen McHarg, 'Regulating for Sustainable Electricity Market Outcomes in Britain: Asking the Law Question' (2013) 30 (4) Environmental and Planning Law Journal 289-302.
[40] ibid 290.
[41] Frede Hvelplund, 'Renewable Energy and the Need for Local Energy Markets' (2006) 31 (13) 2293-2302.

resources for economic development that is unsustainable and produces too many negative environmental and social effects due largely to the practices of Multinational Corporations (MNCs). We note that the unsustainability of Nigeria's energy systems continues to contribute to the energy challenges in the country. Indeed, sustainability measures are mentioned in the 2018 NEP with objectives that include generating an adequate, reliable, and sustainable supply of energy at appropriate costs, and in an environmentally friendly manner.[42] However, at the time of writing, there remain no practical steps taken on how they are to be realised in order to achieve the level of sustainability needed in the country's energy systems. At best, what is provided in the 2018 NEP is that the policy document will serve as a blueprint for sustainable development in addition to energy supply and utilisation of energy resources within the Nigerian economy and the use of such resources in international trade and co-operation.[43]

Despite the vast potential of renewable energy resources in various parts of the country, the country relies heavily on fossil fuels. The development of renewable energy has so far been slow, and the energy situation in the country can be improved if adequate policies are implemented to attract investors in the renewable energy sector in Nigeria.[44] However, the approach by the FGN has been the continued reliance on fossil fuels, notwithstanding the negative impact on the environment. This is evidenced by an examination of the 2018 NEP which shows that energy generation in Nigeria is mainly concentrated on a specific energy source - i.e. oil and gas, despite available renewable energy resources such as hydro, biomass, solar PV, and even the possibility to generate energy from wind, makes it difficult to achieve sustainability.

[42] ECN, National Energy Policy 2018 (n 13)
[43] ibid.
[44] Nnaemeka Vincent Emodi, *Energy Policies for Sustainable Development Strategies: The Case of Nigeria* (Springer 2016) 26.

The 2018 NEP states the need to develop Nigeria's unconventional energy sources (i.e., renewable energy) to meet the rapidly growing demand for energy, and the challenges posed by climate change and the thrust towards industrialisation.[45] However, the approach taken seems to focus on the development of conventional energy sources with the attendant environmental problems. This approach has been the practice for nearly five decades in Nigeria's energy sector, notwithstanding the apparent indices that point to its unsustainable practices. We note that throughout the period before and after Nigeria's independence in 1960, the focus of electricity generation has always been from thermal plants (powered by gas) and hydro plants as the country is endowed with gas and hydro energy resources.[46] Consequently, the focus on oil and gas resources has limited the chance of developing other energy resources and further resulted in cases of conflicting policies in the energy sector.

In Nigeria, the development of unsustainable energy is an immense challenge, as is the proper use of the country's conventional energy resources.[47] This is due to the lack of effective support policies and poor participation by the government in clean energy development. Current efforts aimed at ensuring the sustainable development of clean energy in Nigeria have been overshadowed by the FGN's quest to harness fully conventional resources (i.e., fossil fuel) for reasons of economic development. For example, the focus on the oil and gas sector as the mainstay of the country's economy has led to various weaknesses in the development of other energy resources. This is also attributed to a weak approach to policy formulation and implementation, lack of full private sector participation in the sector, and the current dilemma over oil subsidies.[48]

[45] ECN, National Energy Policy 2018 (n 13)
[46] Amadi (n 18) 347.
[47] Nnaemeka Vincent Emodi and Kyung-Jin Boo, 'Sustainable Energy Development in Nigeria: Current Status and Policy Options (2015) 51 Renewable and Sustainable Energy Reviews 356-381.
[48] Amadi (n 18) 347.

The lack of energy justice resulting from unsustainable energy development in Nigeria is mainly experienced through the exploitation and production of oil and gas resources in a manner that is considered not to be environmentally friendly. The unsustainable practices in the energy sector also ignore the development rights of the host communities. For example, the widespread environmental degradation and environmental rights abuse (as seen from some cases) resulting from oil and gas extractive operations by MNCs in the NDR of Nigeria remains a good example of unsustainable practices in the country's energy sector.[49] Whilst there is the argument that the operations are conducted in order to address the energy needs of the population, there is the challenge of long-term effects from the operations on host communities. This is attributed to serious human and environmental impact challenges resulting from the operations of MNCs ranging from environmental rights abuse to infringement of subsistence rights, the right to health and in some cases the right to life in vulnerable communities.[50] The reality is that some of these problems have often left the host communities to resort to self-help, thus leading to the formation of militant groups and civil unrest which ends up disrupting energy production in Nigeria. The consequence of the agitation of environmental injustice is the constant disruption in the production of the amount of gas needed for electricity generation in the country, thus exacerbating the energy challenges. It can be drawn from the discussion above that with little to no use of renewable energy in Nigeria it surely fails this imperative. Against the background above, the next section looks at some legal and regulatory tools needed in the Nigerian energy sector to address unsustainable energy development.

[49] *Onyoh v Shell Shell-BP* (1982) 12 C.A. 144; See also Rhuks Temitope Ako, 'Environmental Justice in Nigeria's Oil Industry: Recognizing and Embracing Contemporary Legal Developments in Robert V. Percival and others (eds), *Global Environmental Law at a Crossroads* (Edward Elgar 2014) 160-176.

[50] *Allar Iron v Shell-BP* Suit No W/81/71, Warri High Court 20; See also *Social and Economic Rights Action Center (SERAC) and Center for Economic and Social Rights (CESR) v Nigeria* [2001] 155/96 (The Ogoni case); See the United Nations Environmental Programme (UNEP) Report on Ogoni 2011 https://postconflict.unep.ch/publications/OEA/UNEP_OEA.pdf accessed 30 August 2022.

5.2.2.1 Legal Tools

An improvement of sustainable development in Nigeria's energy sector could be advanced through its legal framework. Whilst the principle of sustainable development has been widely recognised around the world, starting with the Brundtland Commission report,[51] there has been a limited effort by national governments, particularly in developing countries to enact specific laws or design any legal framework to incorporate sustainable development principles into domestic legislation. Therefore, an implementation of this energy justice imperative could begin with reconceptualising sustainability principles in energy policy design, enacting stringent and coherent sustainability legislation, promoting transparent reporting, and disclosure of data on sustainability within Nigeria's energy systems. Other legal measures could involve actions leading to the reforming of regulatory institutions to ensure coherent implementation of sustainable development laws and policies. Undertaking these approaches could constitute significant steps towards overcoming energy injustices associated with unsustainable practices perpetrated by MNCs in the NDR where oil and gas operations are conducted, but to do this they must be robust and not just 'paper' mechanisms only.

For successful implementation of the sustainability imperative, therefore, the Nigerian state needs to enact clear laws, or incorporate specific provisions on sustainability into existing legal framework such as the PIA 2021 in order to address the issue of unsustainable energy development. This could be pursued through sustainable development principles that allow for the development of clean energy sources but are incorporated into relevant national laws. For instance, Ghana has successfully increased its use of renewable energy as part of measures to ensure sustainable energy development by utilising its legal and policy frameworks, such as the Renewable Energy Act (832) 2011 and the Ghana Energy

[51] Report of the World Commission on Environment and Development: Our Common Future https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf accessed 28 May 2022.

Development and Access Project Policy, to address electrification challenges in rural areas, particularly the Island Communities of the Ghanaian Volta Region.[52] This initiative, which focused on the use of renewable energy, yielded positive results towards the targeted infusion of up to 10% renewable energy into Ghana's energy mix by 2020, through the deployment of solar photovoltaic mini-grid systems.[53]

The use of the existing legal framework to augment the sustainable development of energy with a focus on renewable energy is increasingly becoming a measure to address energy challenges. For example, countries in Mesoamerica, such as El Salvador and Guatemala, have successfully pursued sustainable development practices in their energy sectors through the enactment of sustainability laws to promote renewable energies in electricity generation.[54] We note also that countries in the region enact laws on incentives for the development of renewable energy projects.[55] This approach is championed through the granting of tax incentives by the government directly to individuals and corporations that invest in new projects of electricity generation from renewable energy sources.[56] These are viable approaches to ensure the sustainable development of energy through the use of economic instruments, such as tax incentives and subsidies, to promote clean energies for power generation.

Perhaps, Nigeria could draw lessons from the approach taken by Mesoamerican countries in order to achieve sustainability in its energy systems. Particularly, through the enactment of

[52] Ernest Boateng, 'The Political Socio-Economic and Environmental Impacts of Solar PV Mini-Grid Deployment of Local Communities: A Case Study of Rural Island Communities on the Volta Lake, Ghana' (MSc thesis, University of Jyväskylä 2016) 106.
[53] Eti Best Herbert, 'America or India: Identifying a Suitable Off-Grid Rural Electrification Model for Nigeria' (2022) 13 (1) Journal of Sustainable Development Law and Policy 36-63.
[54] The El Salvador Law of Tax Incentives for the Promotion of Renewable Energies in Electricity Generation (2007) https://investelsalvador.com/wp-content/uploads/2020/02/Renewable-energy-tax-incentives-law.pdf accessed 25 September 2022.
[55] The Guatemala Law on Incentives for the Development of Renewable Energy Projects (2003) https://www.climate-laws.org/geographies/guatemala/laws/law-on-incentives-for-development-of-renewable-energy-projects-decree-of-the-congress-52-2003 accessed 25 September 2022.
[56] José Juan González (n 29) 300.

specific legislation on sustainability, this would mean a guarantee by the State to prioritize sustainable development of energy access through the use of clean energies. Thus, Nigeria could develop a draft law on sustainable development of energy access to establish a specific legal framework to promote sustainability in the energy sector. This sustainability approach could take the form of consolidating laws and policies relating to sustainable development; establishing new energy entities with clearly defined roles and responsibilities toward sustainability; setting out incentives for sustainable energy development practices; create linkages to energy performance standards on sustainability. This approach could be driven through the recent Electricity Bill 2021 which has been passed by the upper chamber of the Nigerian parliament and seeks to consolidate all laws in the industry to develop a robust energy mix in Nigeria.

It is important to note at this juncture that the approaches above are predicated on the FGN having a keen national interest to pursue sustainability in Nigeria's energy systems. For this reason, deliberate actions through a legislative approach need to be taken to enact new and comprehensive sustainability laws or leverage existing laws such as the PIA to advance sustainability in the energy sector. Perhaps, the process could also involve strengthening laws on environmental impact assessment, and enacting new laws that promote tax incentives for the development of clean energies as they have become important in the quest to achieving sustainability in the global energy sector.

5.2.2.2 Regulatory Tools

Lastly, the implementation of this energy justice imperative could also be carried out through the use of regulatory tools in the energy sector. This approach should take the form of amending the statutory duties of regulators to strengthen them so that they can provide adequate enforcement mechanisms and regulatory personnel to implement sustainability laws in the sector. It has been argued that companies respond to new statutory duties because they

coincide with their pre-existing institutional culture and more importantly, because they risk enforcement action if they do not comply.[57] Therefore, to implement the sustainability imperative through regulatory tools, Nigeria could leverage the current Electricity Bill 2021 that is before the Nigerian parliament and look to introduce clear and specific provisions that will empower regulators such as the ECN and NERC to set sustainability standards for the electricity industry. The same approach could be introduced through the PIA: where the new regulators - the Nigerian Upstream Petroleum Regulatory Commission and the Nigerian Midstream and Downstream Petroleum Regulatory Authority will be empowered to ensure sustainability in the sector.

It is the submission of this author that the sustainable development provisions in the PIA,[58] should go beyond the vagueness of sustainable development duties that have been enacted to date, which makes them particularly difficult to enforce. More so, regulators could be empowered to make sure that companies have regard to environmental impacts, as well as to take account of social and environmental guidance with a specific reference to sustainable development. This approach would be a clear opportunity for this imperative to do more to see that Nigeria's current practice of environmental degradation resulting from oil and gas operations is reduced.

It is important to note at this juncture that the quest to achieve sustainability in Nigeria's energy sector remains a collective responsibility for all stakeholders such as national governments, regulators and policy makers to enact laws and policies geared toward achieving sustainability, individuals to make efforts to implement changes in their energy consumption patterns, companies with the responsibility to ensure sustainable practices in energy development, and NGOs to continue advocacy to ensure that energy systems are

[57] McHarg (n 39) 297.
[58] Section 4 (6) (d)-(e) of the Nigerian Petroleum Industry Act 2021 http://www.petroleumindustrybill.com/wp-content/uploads/2021/09/Official-Gazette-of-the-Petroleum-Industry-Act-2021.pdf accessed 21 July 2022.

sustainable. Perhaps these actors could work together to utilise legislative instruments as strategic tools to address Nigeria's unsustainable patterns of energy development.

5.2.3 Energy Efficiency and Conservation in Nigeria

Energy efficiency and conservation is important in order to address the issue of energy insecurity and to meet present and future energy demand in a way that is both economically and environmentally friendly.[59] Thus, energy efficiency as an energy justice imperative presents a valuable opportunity for Nigeria to learn to use energy efficiently in order to close its access gap. For states to be able to meet the threshold of this imperative, there need to be significant improvements in practices (for example acquiring energy-efficient appliances and equipment in the major demand sectors) that reduce the energy necessary to provide services such as heating, cooking, cooling, entertainment, transport, and manufacturing. This would also require addressing the unethical consumption pattern through energy education or literacy programmes particularly to the rural population.

Regrettably, energy efficiency and conservation practice appear not to be very popular in Nigeria due maybe to the lack of technological means in its energy system. The lack of energy efficiency remains a key challenge in Nigeria's energy sector. This is attributed to a poor system of energy efficiency and conservation which stems from the policy framework that appears to be undermining the importance and gains of this imperative to the country's economic growth. It is pertinent to note that in a developing state such as Nigeria, energy efficiency and conservation measures could provide significant possible steps to alleviating

[59] UNFCCC Climate Technology Centre and Network, Developing Institutional Framework for the Efficiency Act and Regulations Targeting Energy Intensive Sector (Household and Industries) in Nigeria (2021) https://www.ctc-n.org/system/files/response_plans/Response_plan_Nigeria_Energy%20Efficiency%20Act%20_%20Final%20_%20Countersigned.pdf accessed 21 July 2022.

energy poverty. This is because the simple effect of efficiency in energy systems is to lower the implicit price of energy service and make its use more affordable.[60]

The persistent inefficient utilisation of energy in Nigeria is due largely to lack of awareness of the economic and social benefits of energy efficiency.[61] Consequently, this leads to energy practices that increase environmental problems due to more investment in conventional energy infrastructures.[62] It is instructive to note that energy savings have great potential for the three major sectors in Nigeria that consume the most energy. These sectors are (i) households; (ii) transport; and (iii) industry. Further, analysis of the three sectors will reveal where there needs to be improvement in energy efficiency and conservation practices in Nigeria.

Firstly, for the households sector, it is observed that the rate of energy efficiency in Nigeria is very poor, and this is attributed to the high degree of energy loss through energy wastage.[63] The household sector has the highest energy losses because of the use of traditional three-stone stoves with low efficiency and is harmful to health of rural population.[64] There is also the practice of indiscriminate use of electricity by some urban dwellers whereby they do not switch off electric bulbs and other appliances when not in use. This contributes to higher electricity bills and increases for the government and electrical utilities in the costs of running power plants.[65] Additionally, many electrical appliances used in Nigerian households do not meet the minimum efficiency standards for energy consumption.[66] The current standards that cover major household appliances such as home entertainment appliances, refrigerators, freezers, washing and drying machines, electric cookers, and air conditioners, lighting

[60] Horace Herring, 'Energy Efficiency – A Critical View' (2006) 31 Energy 10-20.
[61] ECN, National Energy Policy (n 13)
[62] ibid.
[63] Emodi and Boo (n 47) 376.
[64] ibid 378.
[65] ibid.
[66] ibid 378

products lamps and fluorescent lighting, and other appliances do not promote energy efficiency and conservation.[67]

Secondly, the transport sector is the main consumer of petroleum products in Nigeria and so the inadequate mass transport systems, poor mechanical conditions of vehicles and poorly maintained roads are some of the major factors affecting efficiency in the sector.[68] Energy inefficiency is manifested in this sector also through the importation of used vehicles that are not fuel-efficient. The transportation sector remains one of the main sources of energy consumption, and, therefore, atmospheric pollution, in Nigeria due largely to lack of proper coordination of urban and transport planning to reduce light vehicle and fuel use. The purchase of used vehicles through importation that are not fuel efficient has been a long-standing practice in Nigeria and has continued to be a contributory factor to the country's long-running energy challenges because the system does not present opportunities to people to use energy more efficiently.

Thirdly, in the industrial sector, there is also the practice of not frequently turning off electrical machinery on a no-load condition, not plugging steam leaks, and the inability to avoid material wastages.[69] This is in addition to the continued purchase and use of non-fuel saving equipment, which would increase the total energy use and also increase carbon emissions into the atmosphere. All of these examples show that energy-efficient practices are not prioritised in this sector, hence the country maintains its reliance on a heavy consumption of energy in a manner that is not efficient. There is, consequently, also the lack of understanding in this sector of how improved energy efficiency could be beneficial overall to

[67] Noor Hanita Abdul Majid and Ibrahim Udale Hussani, 'The Challenges of Energy Efficiency Practice in the Nigerian Households' Third International Conference on Applied Energy, Italy (2011) file:///C:/Users/ga18480/Downloads/The_Challenges_of_Energy_Efficiency_Prac.pdf accessed 21 September 2022.
[68] ECN, National Energy Policy 2018 (n 13)
[69] Emodi and Boo (n 47) 378.

the economic efficiency of energy systems. This is realisable where there is the practice and use of physical efficiency of the technical equipment and facilities in the sector.

It is important to note at this juncture that Nigeria's transition to energy efficiency and conservation is mainly hindered by the complexity of introducing energy sector reforms across the key sectors such as industry, commerce and transport in which current activities are highly fragmented.[70] There is currently no harmonized energy efficiency and conservation law that could help drive the adoption of energy efficient technologies and practices in the household, transportation and industrial sectors. This is mainly attributed to the lack of a viable policy and legal framework on energy efficiency and conservation measures in the country. There is a need to develop an appropriate policy and legal framework that would promote national energy efficiency and conservation practices in all sectors of the Nigerian economy. This means that this imperative would require the redesigning of energy systems to support more efficiency and conservation measures. Clearly, the responsibility of enacting a legal and policy framework on efficiency and enforcing it rests on the government. This is necessary to regulate energy use in the direction of efficiency, and also control the pattern of energy use in general.[71] Against the background above, implementation of this imperative in Nigeria's energy systems could prove to be an effective way to address some aspects of the country's energy challenges. The implementation strategy will now be discussed through the prism of policy and legal approaches.

5.2.3.1 Policy Tools

Firstly, this imperative could be implemented in Nigeria through a policy-led approach. To achieve this, Nigeria could look at specific sectors with key potential for energy efficiency

[70] UNFCCC Climate Technology Centre and Network (n 59)

[71] Ibrahim Udale Hussaini and Noor Hanita Abdul Majid, 'Energy Development in Nigeria and the Need for Strategic Energy Efficiency Practice Scheme for Residential Building Sector' (2014) 26 (1) Management of Environmental Quality 21-36.

and conservation, such as the three main energy demand sectors, namely household, industry, and transportation. As mentioned earlier, there is considerable energy loss in the household sector due to inefficient traditional stoves used for cooking in rural areas.[72] For instance, the fuelwood is burnt using inefficient traditional stoves in rural communities because they lack modern, improved stoves and substitution fuels, such as Liquified Petroleum Gas and kerosene, due to their cost, and because of a lack of awareness – all of which are exacerbated by other socio-economic barriers.[73] As a first step, the government could, through policy-led actions, mandate the use of efficient fuel wood stoves in rural households that cannot afford other higher fuels. This approach might be more successful where it is carried out through programmes that provide the improved stoves to rural communities at a low cost, or even at no cost.

As mentioned earlier, there remains a high level of energy inefficiency in urban households manifested in the form of wastage and the use of inefficient appliances. Thus, to ensure efficiency and conservation in urban households there is a need for a policy framework with salient penalties for urban dwellers in order to minimise energy wastage.[74] Additionally, trade restrictions could be imposed on importation of vehicles, for example allowing only for the importation of energy-efficient cars, and other equipment, to ensure energy efficiency in home appliances, and machinery to reduce the choices available to urban dwellers. This policy-led approach could help families prevent wastage as the conserved energy can then be channelled to other sectors for use, and energy efficient products would be cheaper for the householder to run in the long-term. The objective here is to find ways to attain a considerable human behavioural change towards efficiency in household energy use.

[72] Segun R. Bello, T A Adegbulugbe and Musiliu Ade Onilude, 'Characterization of Three Conventional Cookstoves in South Eastern Nigeria' (2015) 17 (2) Agric Eng Int: CIGR Journal 122-129.
[73] ECN, National Energy Policy 2018 (n 13)
[74] Hussaini and Abdul Majid (n 71) 30.

The Nigerian transport sector shows that there are substantial opportunities for energy savings, particularly in the road transport sub-sector.[75] As practised in other countries in the Global North such as the UK and some EU countries, regulations have been used to pursue and achieve the objective of energy efficiency and conservation in the transport sector. For example, the 2012 EU Energy Efficiency Directive, which was implemented in 2014 by Member States, was a significant step forward designed by the EU to help meets its target to reduce primary energy consumption by 20% by 2020.[76] For the transportation sector, this author submits that policy could also be used to improve the efficiency of the transport system in Nigeria. Here, the government could work towards the stimulation of increased public transportation use through the introduction of an effective public transportation system that will better integrate and improve the lives of Nigerians. Through such policy-led approaches targeted at energy efficiency and conservation, together with proper coordination and planning to reduce fuel use, especially in urban areas, this might lead to a more sustainable transport system – as well as provide clear health benefits for the population.

Similarly, there is potential scope for energy efficiency and conservation in the Nigerian industrial sector but sadly not much has been done in this respect. The utilisation of energy in the industrial sector is characterised by huge energy wastage due to the use of obsolete and inefficient machines and equipment e.g., old boilers, motors, pumps, hence lowering the overall efficiency of the system.[77] We note that efficiency could be encouraged in this sector through policy guidelines backed up with regulations that would require that businesses in the sector acquire and use machines that are energy efficient in their operations. Energy audit studies have revealed that as much as twenty-five percent of industrial energy can be saved

[75] ECN, National Energy Policy 2018 (n 13)
[76] Directive 2012/27/EU of the European Parliament and of the Council October 2012 https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:en:PDF accessed 25 July 2022.
[77] ECN, National Energy Policy 2018 (n 13)

through simple housekeeping measures, such as acquiring energy efficient machines to conduct their daily operations.[78]

In terms of the effectiveness of the policy approach above, it could be argued that the National Renewable Energy and Efficiency Policy (NREEEP) 2015 contains statements including the implementation of energy efficiency measures such as demand-side management, promotion of energy saving technologies, and tariff provisions for electricity distribution companies that achieve high efficiencies within their customer base.[79] However, these statements currently remain operative only at the policy level, without any form of legislative authority to back their implementation across various sectors of the Nigerian economy. The enactment of policy with specific laws to address inefficiency and lack of conservation of energy in developed nations has proven to be an important factor in achieving efficiency in their energy systems. Therefore, the FGN needs to strengthen the implementation process through a clear and specific legal framework and timetable in order to realise the set objectives in NREEEP.

Additionally, there is generally a low level of awareness on ways of conserving and using energy efficiently in Nigeria, in addition to the rationale for doing so. This is prevalent in the rural areas where many consider the concept of energy efficiency and conservation to be a new issue, and where consequently people still leave appliances and lights switched on without knowing the consequences of their actions. This issue has a way of exacerbating energy challenges because where citizens are not properly educated in energy saving techniques or have no knowledge of how they consume energy, then a certain section of the

[78] ibid.

[79] National Renewable Energy and Energy Efficiency Policy (NREEEP) 2015 http://admin.theiguides.org/Media/Documents/NREEE%20POLICY%202015-%20FEC%20APPROVED%20COPY.pdf accessed 25 May 2022.

society will be left with significantly low levels of electricity as a result of 'shedding'.[80] According to the U.S Department of Energy, energy literacy or education provides a broader view on energy use and involves not only the understanding of the nature and role of energy in our everyday life, but also enables people to apply that understanding to answer questions and solve problems.[81] Perhaps, with a policy-led approach, Nigeria could pass down knowledge through energy education programmes to the population, especially to those with no understanding of energy efficiency and conservation. Here, there could be policy approaches that require relevant agencies such as the ECN and REA among others to educate the public on the benefits of energy efficiency and conservation practices, especially those who live in rural areas. The objective is to help citizens understand the role they need to play in achieving energy efficiency and conservation in Nigeria. We note that educating the Nigerian people, especially through schools for example, on the advantages of proper energy efficiency and conservation practices is one viable way to implement this energy justice imperative.

5.2.3.2 Legal Tools

Secondly, there are legal avenues that could be used to implement this imperative in Nigeria. The analyses on the three demand sectors above raises the question of how implementation of this imperative could be achieved through the utilization of legal tools. To achieve this, Nigeria might need to take deliberate steps to reframe the legal regime on energy efficiency and conservation in these sectors. This approach could bring about savings that can be anticipated in thermal and electrical energy utilization from incorporating energy efficiency in the sectors. For effective implementation, lessons could again be drawn from Mesoamerican countries, such as Costa Rica, that has enacted the Energy Efficiency Law,

[80] Hussaini and Abdul Majid (n 71) 28.
[81] United States Department of Energy, Energy Literacy: Essential Principles and Fundamental Concepts for Energy Education 2017. https://www.energy.gov/eere/education/energy-literacy-essential-principles-energy-education accessed 20 May 2022.

Ley 7447 1994, that seeks to promote state-wide energy efficiency measures. The same applies to Ghana with energy efficiency regulations[82] in line with the Economic Community of West African States (ECOWAS) framework for energy efficiency policy.[83] The ECOWAS framework for energy efficiency urges members to adopt international practice in this area, recommending that good energy efficiency governance has been identified as essential for the effective implementation of energy efficiency measures.[84] This approach goes beyond the introduction of polices in the various sectors and provides for a comprehensive legal framework as an effective way to help drive energy efficiency and conservation at the domestic level. Thus, a national strategy on energy efficiency that will clearly identify and outline a legal framework to enhance the efficient use of energy in the three demand sectors is needed in Nigeria.

Perhaps the starting point for implementing this imperative in Nigeria then could be the development of a new Energy Efficiency and Conservation Act that creates a legal framework to promote energy efficiency and conservation in all sectors of the economy. Although the 2018 NEP stipulates the establishment of guidelines and regulations on energy efficiency and conservation,[85] there has been no action to that effect. The proposed legal framework should seek to consolidate measures and policies relating to energy efficiency and conservation; create new energy efficiency regulators with clearly defined roles and responsibilities; regulate energy/electricity consuming sectors in industry, transport and

[82] Ghana pursues energy efficiency through the Energy Efficiency Standards and Labelling (Household Refrigerating Appliances) Regulations, 2009, LI 1958 and amendment 2010, LI 1970; The Energy Efficiency Standards and Labelling (Non-ducted Air-conditioners and Self Ballasted Fluorescent Lamps) Regulations 2005, LI1815; The Energy Efficiency (Prohibition of Manufacture, Sale or Importation of Incandescent Filament Lamp, Used Freezer and Used Air-conditioner) Regulations, 2008. LI 1932.

[83] The Economic Community of West African States (ECOWAS) Energy Efficiency Policy http://www.ecreee.org/sites/default/files/documents/ecowas_energy_efficiency_policy.pdf accessed 10 August 2022.

[84] ibid.

[85] ECN, National Energy Policy 2018 (n 13)

households; find where efficiency can be strengthened within the system; and set incentives for energy efficiency and conservation in all sectors of the country's economy.

Additionally, the proposed legal framework should introduce specific laws that would require companies to invest in energy-efficient industrial equipment and processes, perhaps through comprehensive financial incentives, such as tax incentives for energy-efficient investments in industry, or through regulation of energy inefficient machinery (e.g. through factory inspections etc). There could also be the introduction of higher charges for energy use by companies using inefficient machines in order to enforce change. Actions in this respect will be seen to be legally binding and could help to reduce energy demands due to the adoption of energy-efficient technologies stipulated in the legal framework. More so, it would require the setting up of a regulatory body to help monitor and report on activities towards compliance of the energy efficiency and conservation law.

It is important to note at this juncture that part of the challenge of energy inefficiency in Nigeria is manifested through the use of energy-inefficient products by households, individual behavioural attitudes towards energy consumption, and dependence on a particular energy source that is considered harmful to the environment.[86] This implies that energy inefficiency in Nigeria stems not only from legal and policy deficiencies, but also from an individual pattern of consumption. For instance, unjust energy consumption patterns and behaviour is said to be attributed to a lack of energy efficiency knowledge on the part of consumers.[87] As mentioned in Chapter 4, individuals as actors have a role to play in the realisation of energy justice through the imperative of efficiency. Thus, this could be achieved through people's total commitment to change in their behaviour, values, and their way of life towards energy consumption and use. The implementation of the imperative is to

[86] Oluwole Adegbenro, 'Challenges and Prospects of Energy Efficiency and Conservation' (2011) 1 (1) Journal of Energy Policy Research and Development 104-110.
[87] ibid 105.

see Nigeria systematically aligning itself to the trend of acquiring energy-efficient technology and which must be able to adopt these technologies as they become available. This approach presents a viable strategy for how the energy justice imperative of efficiency and conservation could be practically implemented across the different demand sectors of the country's economy.

Another notable way to implement this imperative is through the provision of a transparent system with legal backing that would help end-users to understand their total energy consumption. Within the legal framework suggested – as per energy efficiency laws, relevant agencies such as NERC could be empowered to ensure that people are provided with systems, such as smart meters, that allow them to monitor their energy use and consumption. This approach could help alter the way energy is being utilised so that sustainable development can be attained environmentally, socially and economically. We note that some consumers in Nigeria are provided with estimated energy bills that do not reflect the true amount of energy consumed by them.[88] The consequence of estimated billing that is often not clear is that many consumers fail to see the need to adopt more efficient technologies and rational behaviours because they are used to receiving an estimated energy bill regardless of the amount of energy consumed over a particular period of time. These actions impact the capacity of the system to deliver efficient energy and services to the Nigerian people – and provide no incentive for consumer behavioural change. Therefore, articulating a strategic and viable plan to educate the public through the legal framework to help individuals understand their total energy consumption is paramount. This approach would help people to be economically rational in energy choices and use, while at the same time making sure that the benefits of energy efficiency and conservation are not lost to irrational behaviours.

[88] ibid 106.

5.2.4 Just Energy Institutions

What is necessary to achieve just energy institutions? In the context of this research, the suggested criteria to be met for this imperative to be achieved are (1) showing regulatory independence in energy decisions; and (2) clarity of responsibilities and objectives that are geared toward delivery of energy justice. Energy institutions would be seen to be just when they produce energy systems where actual and perceived regulatory uncertainties such as the lack of due process in the energy sector are eliminated, where regulatory independence is manifested, and where the objectives of the institution ultimately advance the energy justice cause. The argument above is built on the criteria identified in Chapter 4 for this imperative that just energy institutions should be independent and should be able to make energy decisions geared towards justice delivery.

Nigeria remains an interesting example of how unjust institutions contribute to energy access and poverty challenges. For example, the regulatory approaches from various energy institutions in the country have been somewhat complicated and fraught with duplication of responsibilities with no coordination amongst them.[89] Evidence of this is seen in the lack of synergy between relevant energy institutions in the energy sector that is contributing to the sectoral challenges.[90] For instance, there remains an overlap of functions and a conflict of responsibilities with no synergy among the regulatory institutions in Nigeria's energy sector.[91] We note that each of the regulatory bodies have been exercising their respective powers in the area of providing policy direction for energy development in Nigeria. This is evidenced through the work of the ECN, which is charged with the responsibility of

[89] Omorogbe 'Legal Dimensions of Access to Modern Energy Services in Africa' (n 25) 335.
[90] ibid, See also Afe Babalola and Damilola Olawuyi. 'Overcoming Regulatory Failure in the Design and Implementation of Gas Flaring Policies: The Potential and Promise of an Energy Justice Approach' (2022) 14 Sustainability 6800.
[91] Amadi (n 18) 346; See Yemi Oke, 'Beyond Power Sector Reforms: The Need for Decentralised Energy Options (DEOPs) for Electricity Governance in Nigeria' 2012) 18:1 Nigerian Journal of Contemporary Law, University of Lagos, 68-71.

preparing the 2018 NEP, and the work of NERC, which is also having to prepare the Rural Electrification Strategy and Implementation Plan among other regulatory documents. The challenge is that each of the regulatory bodies seek to establish a policy framework for the regulation and development of energy in Nigeria without clear and specific reference to the powers of other bodies to avoid conflict. In the sector, we see a clear duplication of regulatory responsibilities in the development and management of energy resources in the country.

A deeper look at Nigeria's energy institutions created before and after the reforms of the sector will show that they worsened the energy challenges and left the sector riddled with a lack of maintenance of infrastructure, outdated power plants, low revenues, high losses, power theft, and non-cost reflective tariffs.[92] Considering the reforms that have been carried out since the year 2000, one would expect that the country would have succeeded in developing a viable electricity system and sector that is attractive to investors. Unfortunately, this appears not to be the case as the reforms have not resulted in any meaningful improvement in the country's energy situation.

Historically, the emergence of unjust energy institutions is traced to the chequered history of energy institutional development beginning with the Electricity Commission of Nigeria (ECN) in 1950.[93] This institution was set up in a bid to distribute centrally generated electricity to all parts of the country. Subsequently, the Niger Dam Authority (NDA) was established in 1962 to optimise the use of huge hydro energy resources in the country and generate more electricity for a growing population and economy.[94] By the year 1972, both the ECN and the NDA were merged to create the National Electric Power Authority (NEPA) which operated mainly as a vertically integrated public utility (i.e. centrally owned and

[92] Omorogbe 'Legal Dimensions of Access to Modern Energy Services in Africa' (n 25) 335.
[93] ibid 333.
[94] Omorogbe 'Legal Dimensions of Access to Modern Energy Services in Africa' (n 25) 333.

managed by government) with the sole power to generate, supply, and transmit electricity throughout Nigeria.[95] The rationale for the merger of the ECN and the NDA was to create an institution that would ensure more effective utilisation of the human and, financial and other resources available in Nigeria.[96]

Unfortunately, the merger resulted in a more unstable and unreliable power supply situation in the country, partly because of the lack of institutional capacity to operate independently of government control.[97] NEPA was fraught with inefficiencies and that led to the privatization of some aspects of the sector with the government further creating the Nigerian Electricity Regulatory Commission (NERC), which was established by the Electric Power Sector Reform Act of 2005 to undertake technical and economic regulation of the Nigerian Electricity Supply Industry. The NERC was named the main regulatory body, assuming all of the powers formerly exercised by NEPA.[98] A notable challenge with NERC as an energy institution, however, is its mode of operations, which retained the top-down paradigm of NEPA, including the power of the Minister to issue peremptory directives and administrative guidelines that are meant to be complied with by NERC.[99] We note that the powers of the Minister over NERC take the form of general policy directions concerning electricity, including directions on overall system planning and co-ordination, which NERC shall take into consideration in discharging its functions.[100] Indeed, the directives from the Minister to NERC tend to defeat the objective of what is supposed to be a truly autonomous and independent energy institution that ideally should be seen as just.[101] Clearly, this is attributed

[95] Amadi (n 18) 345.
[96] Ignatius I. Ukpong, 'A Case Study of the Power Corporation of Nigeria' in Jide M. Balogun (ed.), *Managerial Efficiency in the Public Sector: Patterns and Problems in Nigeria* (University of Ife Press 1980)
[97] Amadi (n 18) 367.
[98] See s.31 and 32 of the Electric Power Sector Reform Act 2005.
[99] Yemi Oke, 'Beyond Power Sector Reforms: The Need for Decentralised Energy Options (DEOPs) for Electricity Governance in Nigeria' 2012) 18:1 Nigerian Journal of Contemporary Law, University of Lagos, 68-71.
[100] See Electric Power Sector Reform Act 2005, s.33 (1)
[101] Oke (n 99) 69.

to the dominant government control and over-centralisation of administrative structures that oftentimes leaves little or no room for regulatory independence and private sector investments. Additionally, there is the challenge of regulatory capture which is mainly attributed to corrupt practices in the sector. According to Amadi, most complaints, especially after the so called reforms, relate to the perception of cronyism, incapacity, and incompetence where processes in the sector are rigged to favour cronies of people in government who lack the necessary technical competence.[102]

It is instructive to note that the origin of the centralisation of electricity functions that robbed the institutions of any chance of being independent is linked to the political structure that was introduced following the first Nigerian military coup in 1966.[103] The military government exercised control over every sector of the Nigerian economy after the coup and changed the existing political structure with the introduction of a single-structure economy, including the control and governance of energy resources.[104] With the introduction of this structure during the military regime, the central government had the power to regulate and make energy decisions in the country. This structural arrangement has since been maintained even after the country returned to a democratically elected system of governance. Consequently, this structure laid the foundation for energy institutions (i.e. regulatory functions) not to be independent, thus contributing to the energy challenges in the country, especially in terms of decision-making.

As stated earlier, the lack of clarity on the responsibilities and objectives of energy institutions in Nigeria also contributed to the energy challenges. For example, the ECN, which is a statutory body charged with the responsibility of coordinating and supervising

[102] Amadi (n 18) 367.
[103] Nobert Edomah, Chris Foulds and Aled Jones, 'The Role of Policy Makers and Institutions in the Energy Sector: The Case of Energy Infrastructure Governance in Nigeria' (2016) 8 Sustainability 1, 9.
[104] ibid.

energy functions within Nigeria[105], often encounters conflict or overlaps with other regulatory institutions. Originally, the ECN was mandated to ensure an adequate, reliable, cost-effective and sustainable energy supply for the nation's economic and socio-political development.[106] A notable challenge with the ECN, however, is that it is placed under the Ministry of Science and Technology with no established synergy or coordination with the Ministry of Power which is in charge of the electricity industry.[107] The lack of synergy between the two bodies has consequently contributed to sectoral problems in the energy sector, especially as the ECN is seen not to be playing a pivotal role in energy planning in Nigeria.[108] According to energy scholars, the failure of the government to establish effective coordination among energy institutions is partly responsible for the problems being experienced in the electricity sector.[109] This is especially true in relation to the development of renewable energy sources. Furthermore, the uncertainty of regulatory functions of the various energy institutions makes accountability for the development of energy in Nigeria difficult. More so, it makes the implementation of energy policies difficult and prevents proposed incentives that would have attracted investment in the development of energy from being realised. This approach has continuously hindered the efforts of the ECN to coordinate or effectively plan for Nigeria's energy demand.[110] Against the background above, it is clear that the imperative is not yet achieved in Nigeria, and thus the next section turns to advance tools needed for implementing the energy justice imperative of just energy institutions in Nigeria.

[105] See Energy Commission of Nigeria https://www.energy.gov.ng/ accessed 20 July 2022.
[106] ibid.
[107] Omorogbe 'Legal Dimensions of Access to Modern Energy Services in Africa' (n 25) 335.
[108] ibid.
[109] Kenneth Okedu, Roland Uhunmwangho and Promise Wopara, 'Renewable Energy in Nigeria: The Challenges and Opportunities in Mountainous and Riverine Regions' (2015) 5 (1) International Journal of Renewable Energy Research 224.
[110] Omorogbe 'Legal Dimensions of Access to Modern Energy Services in Africa' (n 25) 335.

5.2.4.1 Legal Tools

As has been stated, the imperative of just energy institutions means to apply principles that seek to advance the energy justice concept. This implies manifesting regulatory independence and clarity of responsibilities and objectives as the standard for a just institutional framework. Therefore, this notion would imply the need to reform existing energy institutions in Nigeria so as to have clear objectives set out to produce 'just' and 'reasonable' outcomes as part of measures to address energy challenges. The imperative would seek to ensure that energy institutions in Nigeria are mandated through legal instruments to carry out their duties in a way that addresses specific energy challenges.

Implementation could, therefore, be advanced through regulatory strengthening of energy institutions in Nigeria. Perhaps, this might pave the way for a new legal and policy understanding of energy challenges to the Nigerian economy. Furthermore, to create just energy institutions, Nigeria could begin by amending statutory duties of existing regulatory institutions to ensure that they have clear objectives that are geared towards the delivery of energy justice. The aim here is to increase the priority given to energy justice issues in Nigeria's energy sector. For instance, issues surrounding the lack of an enabling environment for more private sector participation and investments in the energy sector, regulatory uncertainties and opportunistic behaviour on the part of government are all factors as to why energy institutions in Nigeria are unable to produce just and reasonable outcomes that align with principles derived from the energy justice concept. These issues stem from the energy institutions which have been captured by the government with their over-centralisation policy approach.

It is instructive to note that the lack of coherent governance and coordination among energy institutions continues to stifle the development of an energy justice approach that is based on the delivery of universal energy access in Nigeria. This author will submit that the Electricity

Bill 2021 presents a valuable opportunity for the FGN to address these issues by creating just energy institutions at the domestic level. This could be achieved through the mapping of clear plans within the existing legal framework that will empower and allow institutions to be totally independent in the course of making energy decisions. This approach could be driven through reforming already established energy institutions to ensure that they meet certain energy justice standards, such as ensuring clear, credible, and stable commitments that will not only meet the expectation of prospective investors but also that of all stakeholders in the energy sector.

Additionally, the importance of using a constitutional approach to ensure that institutions in the energy sector produce just and reasonable outcomes cannot be overemphasised. To promote just energy institutions in Nigeria, it is essential that structures at the state level which have already been empowered by the constitution to regulate the development of energy are strengthened. This approach is to allow institutions at the state level to carry out a broad energy expansion programme, such as allowing private sector participation and investments to meet energy infrastructure needs. There are arguments that the centralisation of the regulatory function of energy institutions by the FGN does not take into consideration the constitutional powers of state governments to generate electricity that is not transmitted through the national grid.[111] The FGN appears to be acting contrary to the provisions of the 1999 Constitution (as amended), which set out the powers of the Federal and State parliaments in relation to electricity regulation and in relation to grid and off-grid electricity generation.[112] In the same vein, both the Federal and state parliaments could leverage their constitutional powers provided under the concurrent legislative list in the 1999 Constitution

[111] Yemi Oke, 'The Conversation: Conflicting Laws Keep Nigeria's Electricity Supply Unreliable' https://theconversation.com/conflicting-laws-keep-nigerias-electricity-supply-unreliable-81393 accessed 10 August 2022.

[112] The Concurrent Legislative Lists, Second Schedule to the 1999 Constitution, paras 13, 14 <https://www.constituteproject.org/constitution/Nigeria_2011.pdf?lang=en> accessed 15 August 2022.

to establish energy institutions with clear, comprehensive and transparent means that outline the energy justice objectives embedded in this imperative. The law which should have a constitutional underpinning and be administered by the energy institutions should, among other things, remove barriers to private sector participation and provide an enabling environment for investments in the energy sector, both at the federal and state levels.

5.2.4.2 Regulatory Tools

Another valuable way to engage with this imperative towards resolving some aspects of Nigeria's energy challenges is by ensuring regulatory independence of energy institutions. The setting up of energy institutions with independent regulators that are transparent and accountable, together with an appeal process in place to challenge their decisions, are actions that advance the energy justice concept. As was stated under section 4.1.1 in Chapter 4, regulators are key actors of energy justice with demands on them to ensure that their actions align with principles embedded in the energy justice concept. Addressing the multi-faceted challenges in Nigeria's energy sector, there is, therefore, a need for the FGN to set up strong regulatory institutions through a clear legal framework that can provide the legal basis and obligations for them to be completely independent. A well-designed legal framework on just energy institutions in Nigeria can provide the much needed platform for coordinated, systemic, and effective policy and decision-making processes in energy development.

To effectively realise this imperative, there also needs to be strong enforcement measures for legislation creating energy institutions in Nigeria. In practice, the process of enforcement has to be championed by the national government as well as other actors of energy justice. For example, the current Electricity Bill 2021 before the federal parliament could be used as a legislative tool to strengthen energy institutions in Nigeria in the way outlined here. This approach could take the form of incorporating key provisions in the bill that would guarantee regulatory independence and autonomy in the administrative structure of the energy sector. It

could also be used to further ensure transparency in private sector participation, which would be championed by regulatory institutions.

The same argument could be made for the PIA 2021 to be used to ensure that energy institutions in Nigeria are able to produce just and reasonable outcomes that align with the energy justice concept. For example, there could be the introduction of salient provisions in the PIA that would seek to empower relevant regulatory institutions in the energy sector, such as the Nigerian Upstream Regulatory Commission. This regulatory approach could be pursued by way of ensuring that the legal framework has a clearly defined plan to enhance regulatory independence in energy decision-making. Also, such an approach could include targeted measures that would strengthen energy institutions so that they are put in a better position to help address energy challenges, particularly in the area of achieving universal energy access in Nigeria. It is pivotal to note, however, that the proposed implementation process here may not be straightforward because its success requires political will. Therefore, where there is a lack of political will, as is the case in Nigeria, the outcome will be continued engagement in seemingly endless institutional reforms and/or restructuring with little improvement to counter the energy challenges as - indeed, we have seen since the year 2000.

5.2.5 Transparency and Accountability in Nigeria's Energy Systems

Nigeria remains a good example of how the lack of transparency and accountability is manifested in energy systems, particularly as its oil and gas exploration and production has hitherto been characterised by serious transparency and accountability concerns.[113] This challenge is manifested in the form of incomplete or inaccurate reporting of activities in the energy sector, perpetrated by the FGN in collaboration with MNCs.[114] Regrettably, their

[113] Adedolapo Akinrele, 'Transparency in the Nigerian Oil and Gas Industry' (2014) 7 (3) Journal of World Energy Law and Business 220.
[114] ibid.

actions have been linked to institutional challenges affecting Nigeria's ability to utilise resources from the energy sector for other socio-economic development.[115]

To address transparency and accountability issues, Nigeria has for the most part enacted and subscribed to a myriad of policy guidelines both at the international, regional and domestic levels aimed at promoting higher standards of governance, transparency and accountability in the extractives sector. For instance, the FGN joined the Extractive Industries Transparency Initiative (EITI) in November 2003 and launched the Nigeria Extractive Industries Transparency Initiative (NEITI) in February 2004. This institution is seen as one of the most comprehensive and advanced efforts to apply the EITI's principles by a signatory country.[116] Unfortunately, these measures have not yielded the desired results, particularly in the petroleum sector which is the mainstay of the country's economy. This is evidenced by the publishing of inconsistent and inaccurate revenue reports, together with royalties paid to the FGN remaining undisclosed for unjustifiable reasons.[117] It has been observed that specific transactions are disguised, thereby making it impossible for interested stakeholders, such as members of oil producing communities, to monitor the royalties, taxes, charges paid to the FGN.[118]

The attitude of concealing actual revenues from energy resources development leads to shortages of resources that could be used to develop more energy access projects. Ideally, upon the development of energy resources, it is the responsibility of the FGN to use funds generated for other socio-economic programmes, including developing energy access projects in different parts of the country. Unfortunately, this is not the case for Nigeria, especially as

[115] ibid 221.
[116] ibid.
[117] Olabode Oyewunmi and Olusola Olujobi, 'Transparency in Nigeria's Oil and Gas Industry: Is Policy Re-engineering the Way Out?' (2016) 6 (3) International Journal of Energy Economics and Policy 630-636.
[118] ibid.

we see the country's continued struggle to provide universal access to energy and services to boost socio-economic development.

A notable impediment to efforts aimed at addressing the challenge of transparency and accountability is the non-implementation of available laws and policy guidelines in the Nigerian extractive sector. This is attributed to the 'agency problem' in the extractive sector which has its roots in the asymmetry of information that tends to weaken transparency and accountability measures and results in manipulations.[119] Consequently, the institutions that are responsible for making energy resources serve the citizens are victims of path dependency, entrenched in individual and collective interests clinging to preserve the status quo.[120] This is due to institutional capture by major players in the energy sector.[121] The following section therefore, considers the institutional, legal and regulatory tools that could be used to implement this energy justice imperative in Nigeria's energy systems.

5.2.5.1 Institutional Tools

From the literature, there appear to be some attempts at ensuring transparency and accountability in different ways including using legislative instruments and approaches from NGOs. However, there are still shortfalls in the system despite the enactment of laws, such as the Nigeria Extractive Industry Transparency Initiative Act (2007) that establishes the Nigeria Extractive Industry Transparency Initiative (NEITI).[122] This is an institution set up by the Nigerian government to perform oversight and supervisory functions over companies involved in the extraction of natural resources in Nigeria.[123] The main challenge with this measure remains the lack of political will from the national government to bolster these

[119] Amadi (n 18) 368.
[120] Jones, Sovacool and Sidortsov (n 4) 150.
[121] Godswill Agbaitoro, Mark Amakoromo and Eddy Wifa, 'Enforcement Challenges in the Protection of the Environment from Upstream Petroleum Operations in Nigeria: The Need for Judicial Independence' (2017) 3 International Energy Law Review 85-93.
[122] See s.1 Nigeria Extractive Industry Transparency Act 2007 https://eiti.org/sites/default/files/attachments/neiti_act_2007.pdf accessed 20 June 2022.
[123] s. 2 of the Nigeria Extractive Industry Transparency Initiative Act 2007.

oversight institution set up to ensure transparency and accountability in the country's energy systems operation. Additionally, the workings of the NEITI and the law establishing it show that it lacks the mechanism to create an avenue to access reliable information regarding the financial activities between the FGN and MNCs operating in the energy sector.[124] Another fundamental problem with the NEITI is its inability to enforce sanctions against erring MNCs operating in Nigeria's extractive industry.[125] This is largely due to the weakness of the institution, which is also subdued by the overriding powers and control of MNCs in the country.[126] From the above, it is clear that there is a robust institutional platform for the actors to be able deliver the objectives of this imperative to stakeholders. However, the law will not by itself deliver the intended objectives without the due application of the same by the actors.

Given the institutional challenges highlighted above, there is a need to change the institutional and regulatory culture of the NEITI as part of measures to implement the energy justice imperative of transparency and accountability in Nigeria. This approach should begin with the integration of policies that would ensure a reorientation of the institution's procedures, and wide-ranging responsibility stipulated in the law establishing it. The reorientation of the institution's regulatory culture through the integration of policies could help to ensure that there is no compromise in the discharge of its responsibility. More, so, the reorientation approach should ensure that there is greater priority given to transparency objectives in the energy sector, and by ministerial guidance it should seek to achieve greater alignment with broader energy policy goals.

To effectively meet the threshold of this imperative, Nigeria could look to increase technical and financial assistance, targeted towards improving NEITI's capacity to tackle transparency

[124] Godswill Agbaitoro, 'Legal Strategy for Resolving the Socio-economic and Environmental Symptoms of the Resource Curse in Nigeria: The Role of Impact and Benefit Agreements (IBAs) (2019) 44 (3) Commonwealth Law Bulletin 381-399, 390.
[125] ibid.
[126] ibid 385.

and accountability issues in the extractive sector. This could be achieved by way of reframing its statutory responsibility. For instance, looking at section 2 (c), the Act empowers NEITI to 'eliminate all forms of corrupt practices in the determination, payments, receipts and postings of revenue accruing to the federal government from extractive industry companies'. It can be argued that this provision is too ambitious and open ended. Particularly, as the clause gives a very broad range of responsibilities to NEITI with no clear specific strategy on how it is to be realised. This approach could be complemented by capacity building programmes for the institution's structural enhancements, together with additional assistance provided to the institution members on complicated issues surrounding its role in the extractive industry revenue oversight.

5.2.5.2 Legal Tools

Another optimum way to achieve transparency and accountability in Nigeria's energy systems is through the PIA 2021. As has been mentioned, the PIA provides the legal, governance, regulatory and fiscal framework for the Nigerian petroleum industry.[127] Therefore, it could be used as a legal tool to strengthen transparency and accountability in the country's energy sector. This could be done through the incorporation of direct provisions that would seek to compare both the FGN and MNCs to be more transparent and accountable in the release of actual revenues from the development of energy resources. Although, it is provided in the PIA that part of its objectives is to promote transparency and, good governance and accountability in the administration of the petroleum resources in Nigeria.[128] However, it remains unclear how this is to be achieved as it appears to be a general statement that may require more details in terms of implementation. To effectively achieve this, there could be the incorporation of clear and comprehensive provisions on this imperative in the

[127] See the Nigerian Petroleum Industry Act 2021 http://www.petroleumindustrybill.com/wp-content/uploads/2021/09/Official-Gazette-of-the-Petroleum-Industry-Act-2021.pdf accessed 20 July 2022.
[128] See s.2 (c) of the Petroleum Industry Act 2021.

PIA, thus establishing full legislative backing that would ensure that at a specific period and time both the FGN and other players in the energy sector are required to release revenue reports from energy resource development to the public.

This author would argue that the incorporation of specific provisions on this imperative in the PIA as opposed to a broad provision without specific measures could better help ensure the protection of energy facilities in the NDR from a backlash and agitations from members of oil producing communities in Nigeria. This approach will result in a strong recognition by the Nigeria state of the need to protect vested interests in the energy sector with protections that are built into legal instruments. For instance, there could be clear and specific provisions that would seek to make new contracts take into account transparency and accountability measures in the form of disclosing revenues generated and paid to the FGN by MNCs operating in the sector. This will go beyond purely administrative arrangements in order to provide greater investor certainty and stakeholder satisfaction in Nigeria's energy sector.

5.2.5.3 Regulatory Tools

A further way to implement this imperative in Nigeria is to ensure that there is due process in energy system operations. This means that the concept of due process is not only mentioned in policy documents but seen to be applied to system operations in the energy sector. This could help to realise a robust just outcome across the entire value chain in Nigeria's energy systems. More so, due process could reinvigorate the requisite regulatory capacity that is integral to the realisation of energy justice. In practice, due process constitutes the centrepiece of performance of regulatory functions. Thus, regulators in Nigeria's energy sector in relation to the demands of energy justice placed on them as actors have a duty to consistently strive to ensure there is increased transparency and accountability in the sector. As opined by Oyewunmi and Olujobi, transparency and accountability in energy systems have to be realised by relevant actors, notwithstanding any apparent corporate, operational,

social, environmental, and political challenges militating against it.[129] This is to avoid situations where local communities deliberately embark on the destruction of energy infrastructure due to lack of transparency and accountability in energy systems operation.

For Nigeria, achieving transparency and accountability in energy systems could help to address issues relating to corruption and other dysfunctions associated with the energy sector. Perhaps, there needs to be deliberate actions, particularly from the FGN through the regulatory institutions, to also be involved in addressing inconsistent and inaccurate revenue reports of resources from the energy sector. This approach might help the country to realise the full potential of the sector and to further resolve some aspects of the country's energy challenges attributed to the disruption of energy production.

5.2.6 Human Rights-Centred Energy Decisions

As with other African countries, Nigeria's quest to increase energy access through exploration and production of oil and gas resources is often carried out at the expense of human and environmental rights of people in host communities.[130] As earlier mentioned in Chapter 4, the energy operations severely affect a wide range of other rights including the right to health, right to life, rights to adequate food and housing, minority rights to culture and access to clean water.[131] Direct violations also result where the extractive industry implements measures that affect the communities living in the areas without providing them the information and opportunity for their participation.

The potential human rights risks and violations arising from the activities constitute an energy injustice and create tension between energy proponents and members of oil producing communities. Regrettably, this tension caused as a result of human and environmental

[129] Oyewunmi and Olujobi (n 117) 631.
[130] Olubayo Oluduro, Oil Exploration and Human Rights Violations in Nigeria's Oil Producing Communities (Intersentia 2014) 213.
[131] African Commission on Human and Peoples' Rights: Extractive Studies and Human Rights Background Study Report https://www.achpr.org/sessions/info?id=374 accessed 20 October 2022.

impacts could lead to the disruption of energy production by way of damage to energy infrastructure by members of oil producing communities that feel aggrieved due to human rights violations arising from energy projects.[132] Thus, there is a need to protect human rights by way of preventing or addressing potential human rights risks and violations in energy resource development.[133] As has been argued in Chapter 4, this will require an adoption of the United Nations Human rights-based approach (HRBA) framework to resolve the challenge. The process would require policymakers in the Nigerian energy sector to mainstream human rights in energy decisions, particularly as they relate to the development of energy sources.

Importantly, when we talk about the lack of human rights-centred energy decisions as an energy injustice, there are two competing interests at play. Firstly, it constitutes an energy decision situation where the FGN makes an effort to increase energy access to scale up economic development as part of the duty owed to citizens – as per to provide universal energy access. Secondly, whilst the need to increase energy access is essential, actions needed to accomplish this are sometimes carried out at the expense of human rights. For example, Nigeria approved the construction of 3,050MW Mambilla Electricity Project at a cost of US$5.7 billion in 2017 with the aim to expand energy access.[134] Such large scale energy projects may lead to human rights violations, such as compulsory acquisition of lands as project sites; forced displacement and marginalisation, exclusion and none recognition of participatory rights; governmental repression, breach of right to health, etc.[135] In practice, these human rights violations may lead to protests and agitations from members of host communities with intention to halt energy development projects. This is because the plan to

[132] ibid.
[133] Raphael Heffron, 'Energy Justice and Human Rights' Human Rights and Climate Change Symposium 2021, Presentation at the Essex Human Rights Centre
[134] Damilola Olawuyi, 'Energy (and Human Rights) for All: Addressing Human Rights Risks in Energy Access Projects' in Raya Salter, Carmen G. Gonzalez and Elizabeth A Kronk Warner (eds), *Energy Justice US and International Perspectives* (Edward Elgar 2018) 74.
[135] ibid 75.

undertake such projects often lack human rights-centred energy decisions, which in turn could lead to conflicts between the proponents of the projects and members of host communities.

In Nigeria, actions from members of host communities of energy projects often have huge impacts on the country's ability to make certain forms of energy available to power its economy. For instance, there have been several protests, militancy activities, and incidences of civil unrest in the NDR of Nigeria that turns out to affect the supply of gas that is meant to power electricity plants i.e., the gas turbine systems in the country.[136] The reason for the protest is sometimes attributed to injustices of human and environmental rights impact on communities where energy operations are conducted.[137] The energy injustice here takes the form of infringement of human rights resulting from the operations of MNCs in the NDR of Nigeria. This leads to prolonged electricity blackouts as a result of gas shortages from damage done to gas pipelines that are meant to supply gas for the powering of electricity plants across the country.

For Nigeria with huge deposits of oil and gas resources, it is important to ensure that human rights-centred energy decisions are made while developing these resources to boost energy access. Sadly, the FGN's quest to increase economic development through the use of proven hydrocarbon deposits has continued to place less importance on the need for human rights-centred energy decisions in Nigeria's energy sector. This is evidenced by the lack of policy instruments that ought to create an obligation to integrate human rights in energy development projects. Consequently, there is currently no legislative or policy framework that specifically mandates energy proponents to integrate or consider potential human rights

[136] Angela Ajodo-Adebanjoko, 'Towards Ending Conflict and Insecurity in the Niger Delta Region: A Collective Non-violent Approach' (2017) 1 AJCR https://www.accord.org.za/ajcr-issues/towards-ending-conflict-insecurity-niger-delta-region/ accessed 25 September 2022.
[137] ibid.

violations through human rights impact assessments in energy projects. As mentioned earlier, the challenges arising from this injustice are often manifested in the form of destruction of energy infrastructure, oil pipeline vandalization and oil theft, all of which cause disruption of energy production and supply across the country. To advance an energy justice approach towards resolving this issue, some action points to be considered through this imperative is outlined in policy and legal tools.

5.2.6.1 Policy Tools

To effectively address the energy injustice, there needs to be an implementation of the imperative of human rights-centred energy decisions in Nigeria through the HRBA framework. This means that energy decisions leading to energy development should take broader human rights such as the right to health, life, subsistence, environment amongst others into account, especially in relation to how the project might affect members of host communities. This brings the HRBA framework to the fore as a strategic tool to resolve the challenge by integrating human rights into the entire process of energy development. Nigeria could achieve this through a policy-led action that would seek to change the culture of approving energy projects, exploiting natural resources, and promoting foreign investments in the energy sector, irrespective of the environmental and human rights impact on host communities to one that would consider the human rights implications of such projects.

This author would submit that a review of the 2018 NEP by the Nigerian government presents a valuable opportunity for Nigeria to advance the energy justice framework towards resolving energy challenges arising from the conflict between energy development and human rights violations. Here, the approach would take the form of integrating broader human rights through policy-led action into the development of energy projects in the NEP. Perhaps, through this imperative, human rights impacts would be considered in the energy

development project approvals, planning and design process.[138] For example, the 2018 NEP could be used to provide a methodological framework where policymakers would be able to identify and address root causes of energy injustice in the form of human rights violations and well-entrenched power imbalances that tend to exclude members of the public in decision-making processes for energy development.[139] To advance an energy justice approach, policymakers need to ensure that energy development projects designed to expand either energy access or supply are conceived, planned, and implemented with the object of protecting, respecting, and fulfilling human rights.[140]

A clear and comprehensive policy framework on human rights-centred energy decisions incorporated into Nigeria's 2018 NEP can provide the basis and obligation for energy project proponents and stakeholders to integrate human rights into the design and operation of energy systems in Nigeria. Under this approach, the protection of human rights in the course of energy production for access would no longer be considered through reactive measures where there is a violation but rather through pro-active measures to reduce future actions that are capable of exacerbating energy challenges in the country. More so, with a policy framework on human rights-centred energy decisions in the energy sector, it is likely to bring about a win-win situation for energy project proponents as well members of host communities who oppose energy development. The implementation of this imperative through a policy-led action could help to address misperceptions in the country's energy sector and standardise best practice measures for addressing common issues, conflicts and tensions arising from energy development to expand access and human rights violations in the NDR of Nigeria.

[138] Olawuyi 'Energy (and Human Rights) for all' (n 133) 88.
[139] ibid 89.
[140] Dinah Shelton, 'Equitable Utilization of the Atmosphere: A Rights-Based Approach to Climate Change' in Stephen Humphreys ed., *Human Rights and Climate Change* (Cambridge University Press 2010) 91-126.

5.2.6.2 Legal Tools

The importance of using domestic legislation to addressing local manifestations of energy injustices from energy development operations cannot be overemphasised. There is an absence or inadequate legal framework in developing countries to ensure human rights-centred energy decisions in the course of energy development.[141] For instance, Nigeria currently does not have legislation or policy instruments that specifically require energy proponents to mainstream human rights in their energy projects at the Federal, State, or municipal levels.[142] Therefore, this presents an opportunity to implement this imperative by enacting specific domestic laws that are tailored to address human rights concerns in the course of developing energy resources and projects to expand access in Nigeria.

An effective way to implement this imperative is the enactment of specific legislation that would require energy proponents to integrate broader human rights in energy decisions in Nigeria's energy sector. Thus, a clear legal framework in furtherance of the HRBA framework would ensure the delivery of justice in energy system operations in Nigeria. Achieving energy justice in this context would mean designing laws and policy instruments for the energy sector that would take into account some of the known human rights concerns in the development of energy projects. The approach here would ensure that the energy law and policy framework in Nigeria is seen to be mainstreaming human rights such as the right to health, water, life, culture, information, participation amongst others into the planning, development and implementation of energy projects for access. Such move would help to ensure that issues leading to civil unrest as a result of forced displacement, to destruction of energy infrastructures, disruption of production and supply, etc, in host communities are addressed. However, the implementation of this imperative through a legislative instrument

[141] Olawuyi 'Energy (and Human Rights) for all' (n 133) 90.
[142] ibid 91.

would be based on commitments from mainly national governments in making human rights-centred energy decisions, especially the ones relating to energy development.

5.2.7 Energy Democracy - Power to the People

Undoubtedly, members of society have a role to play in energy systems operation and contribute to resolving energy challenges. As stated in Chapter four, the threshold for this imperative to be met is for an individual State to develop an energy system that allows active participation of citizens, through collective action aimed at expanding energy access and services. For individual states, this might require a bottom-up approach involving local actors and individuals to help in delivering a more democratic and inclusive solution to energy challenges. This means developing an energy system that would encourage localised ownership of electricity assets by the people.

For far too long, energy systems in Nigeria have always been dominated by government control and therefore perpetrates energy injustice in different ways. For instance, the centralisation of political power and governance was a fundamental aspect of military governments in Nigeria with significant repercussions for the energy sector.[143] Unfortunately, the military system of governance largely shaped the style of governance of every sector of the Nigerian economy including energy. Studies on how to address inadequate access to modern energy tend to focus primarily on the role of governments and large energy companies in spearheading projects that provide fair and equitable distribution of energy benefits, burdens and resources to all.[144] Clearly, this pattern of energy systems operation in

[143] Morakinyo A. Ayoade, 'Democratising the Governance of Energy in Nigeria – Flawed or Pragmatic' in Romola Adeola and Ademola Oluborode Jegede (eds), *Governance in Nigeria post–1999: Revisiting the democratic 'new dawn' of the Fourth Republic* (Pretoria University Law Press 2019) 98.

[144] Raya Salter, Carmen G Gonzalez and Elizabeth Ann Kronk Warner, 'Energy Justice: Frameworks for Energy Law and Policy' in Raya Salter, Carmen G. Gonzalez and Elizabeth A Kronk Warner (eds), *Energy Justice US and International Perspectives* (Edward Elgar 2018) 10.

Nigeria that excluded members of the public was passed down by military governments and still appears to be the practice to date.

There have been efforts from the Nigerian government, together with major players in the energy sector to pursue public participation and inclusion with a focus on informative participation from members of the public.[145] This approach allows citizens to be informed about energy decisions on matters that affect them and not necessarily seen to be given opportunities to be involved in the decision-making processes. In practice, public participation goes beyond informative participation about energy decisions that would impact peoples' lives. We note that recent literature has reconceptualised the concept of public participation to mean energy democracy with roots in localism and grassroot democracy.[146] This implies that it goes beyond informative participation to include significant roles of individual and communities coming together to develop home-grown, local, and small-scale solutions to energy challenges.[147] This approach is in many ways an attempt to address injustices that exist in energy systems that are over-centralised.

Nigeria's energy policies are overwhelmingly centralised leaving little or no room for flexibility to decentralise the country's energy options through the idea of energy democracy. This limits the opportunity to decentralise and democratise energy systems that could potentially advance the energy justice concept. The consequence of over-centralisation is having a system in place with wide disparity in terms of access to safe and affordable energy and distribution between rural and urban populations. We note that the 2018 NEP does not in any way promote energy democracy because it is heavily designed in a way that gives the FGN and its relevant agencies the sole right to develop energy in order to expand energy

[145] Oluduro (n 130) 213.
[146] Damilola S. Olawuyi, 'From Energy Consumers to Energy Citizens' in Ruven Fleming, Kaisa Huhta, and Leonie Reins (eds), *Sustainable Energy Democracy and the Law* (Brill 2021) 105.
[147] ibid 106.

access in Nigeria.[148] This approach allows energy infrastructures and facilities to be centrally managed as they are government owned and run by government agencies with no clear path towards a decentralised and diversified energy generation model. Consequently, individuals are not allowed to participate across the entire energy value chain as the centralised model of energy governance does not recognise or empower citizens who can produce energy to own, manage, and develop local solutions to energy access challenges in Nigeria.

5.2.7.1 Legal Tools

A starting point towards the implementation of this imperative is to develop a clear legal framework to support the concept of energy democracy concept in Nigeria. As argued by energy scholars, without a clear and coherent legal framework that advances the energy democracy concept, the global quest for sustainable energy access for all people may not be fully realised.[149] Thus, there is a need for Nigeria to have a clear legal framework that strongly advances energy democracy and presents the citizens with the opportunity to develop energy access projects that would increase the total available energy at the national level. According to scholars, this approach could be as simple as developing soft technologies for fuel-efficient cooking stoves in rural communities; small scale renewable energy projects that allow individuals with collective capacity to supply electricity generated from renewable energy sources to boost off grid electricity structures across the country.[150] Additionally, Nigeria could enact specific legislation that advances the social right of access to affordable, secure and sustainable energy, together with a dedicated resilient institution that would allow the objectives of energy democracy to be realised.

[148] ECN, National Energy Policy 2018 (n 13)
[149] Olawuyi 'From Energy Consumers to Energy Citizens' (n 146) 103.
[150] Patrick Devine-Wright, 'Community Versus Local Energy in a Context of Climate Emergency' (2019) 4 Nature Energy 894–896.

Furthermore, Nigeria could draw lessons from the EU with a viable energy decentralisation approach that is supported at the European level by the recast Renewable Energy Directive (RED-II).[151] This directive aims to stimulate the formation of renewable energy communities in all EU Member States in which citizens take ownership of the energy transition with a focus on renewables.[152] Clearly, this approach contributes to the EU's quest to achieve universal energy access with the involvement of local communities in the development of energy sources to improve access. To achieve the same, Nigeria could use the current Electricity Bill 2021 that is before the Nigerian parliament to empower citizens and companies, enabling them to engage in the development of energy access projects from diverse sources as part of solutions to energy access and poverty challenges in the country. The Bill, if passed into law, would further deepen, and complement the recent Electricity Constitutional Amendment that allows sub-national governments to make laws with respect to the generation, transmission, and distribution of electricity in areas not covered by the national grid system within that state. A further proposal to the Bill is that it should directly allow private citizens, communities and companies in Nigeria to generate energy without the mandate to feed such energy generated into the national grid.

Whilst the development of a legal framework appears to be a solid step towards advancing the energy democracy concept, it however has its own challenges. Also, whilst the rise of energy democracy in the global energy systems has provided some positive success stories, it has also raised fundamental questions of law and practice.[153] In Nigeria, for example, there are pre-existing legal barriers due to regulatory complexities and administrative delays in project approval and registration, an inadequate legal framework on public-private

[151] Directive 2018/2001 of the European Parliament and of the Council on the Promotion of the Use of Energy from Renewable Sources. 2018. OJ L382/82. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L2001 accessed 22 July 2022.
[152] Noel Healy and John Barry, 'Politicising Energy Justice and Energy System Transitions, Fossil Fuel Divestment and a 'Just Transition' (2017) 108 Energy Policy 451–9 at 451.
[153] Olawuyi 'From Energy Consumers to Energy Citizens' (n 145) 103.

partnerships, challenges with integrating renewable energy sources to national grids and challenges to public participation that limit the energy democracy concept.[154] All of these show that the governance and regulatory task of embedding the concept of energy democracy into national energy systems is left to individual States, thus making the need for strong political will an important measure for the implementation of the imperative in energy systems.

5.2.7.2 Policy Tools

Using policy-led actions as a tool to advance the idea of energy democracy in Nigeria could facilitate the provision of financial support for the private sector, individuals and community participation to actively come up with their own solutions that can expand energy access. A policy-led action could be used to recognise the need to change the socio-economic relations embedded in the Nigerian energy system by encouraging greater public involvement and control through the energy democracy concept. For example, the 2018 NEP could be used through a systematic review process to recognise the concept and what it entails in terms of empowering individuals and communities to be part of the solutions to Nigeria's energy challenges. To achieve this, policymakers could ensure that specific principles embedded in the energy democracy concept are reflected in the policy document with clear and comprehensive strategies that identify and outline energy access objectives. This would allow for the creation of off-grid energy to power communities that are either not connected or underserved by the national grid.

It is instructive to note that expanding energy access, as well as developing energy infrastructure to meet demand, is a capital-intensive venture that cannot be left to individuals and local communities to pay. There is therefore a need for the FGN to provide a policy framework to help mobilise interventions from both private and foreign companies with

[154] ibid.

adequate finance to build and maintain energy infrastructures as part of measures to resolve energy challenges. This approach, which this author will argue here need not be connected to the national grid, conforms to the energy democracy concept as it will be seen as a democratic move to decentralise energy options. For instance, this imperative, if implemented through a policy-led action in Nigeria could result in the development of off-grid solar energy in the northern region with vast amounts of sunlight. It is argued that off-grid solar energy could help drive economic development by strengthening household income.[155]

With a policy-led action to advance this energy justice imperative in Nigeria, issues preventing communities, private and foreign companies' participation in energy systems operation could be eliminated across the whole energy system. More so, this could lead to the creation of new energy structures and governance frameworks for the energy sector. A policy-led action on this imperative would open up opportunities for a knowledge-based sharing model that would help to capture common challenges and ensure best practices in energy access projects championed by local communities in developed countries. For Nigeria, this imperative could lead to prioritising energy expansion and securing a rapid increase of the volume of the share of sustainable energy production, distribution and consumption, as part of the volume of the whole energy production. Overall, this imperative would promote energy sources decentralization, especially at local level and ultimately help the country to undertake a wider energy justice approach to resolve energy challenges.

5.2.8 Just consumption of Energy

Whilst a large aspect of the energy access and poverty challenges in Nigeria is centred around the lack of energy access, it appears that unjust or unethical consumption of energy also contributes, albeit minimally to the energy challenges. Unjust consumption of energy remains

[155] Ben Radley, 'The Conservation: Expanded Access to Solar Power in Africa can Stimulate Economic Development – But there are Risks' 12 August 2022 https://theconversation.com/expanded-access-to-solar-power-in-africa-can-stimulate-economic-development-but-there-are-risks-188414 accessed 28 September 2022.

an issue that is peculiar to developed countries because of their way of life with a high energy consumption rate, but is also an issue which developing countries face. It is important to note that the argument for high energy consumption in developed countries is that historically, they have emitted the most carbon into the atmosphere through their industrialisation.[156]

For Nigeria, issues arising from unjust consumption may not necessarily be at the forefront when discussing how this imperative could be used to resolve energy challenges. This is because the country needs to attain universal energy access before looking at ways to address the injustice of unjust consumption. This is not to say that the imperative of just consumption is less important for Nigeria, but its impact in terms of resolving energy challenges may be reduced as the country is known to be energy poor. Even though there are significant energy challenges evidenced in the shortage of energy supply in Nigeria there is still a culture of wastage from unethical and unjust consumption which is attributed to peoples' lifestyle. For example, many people residing in urban areas in Nigeria are not necessarily conscious of how unjust consumption contributes to the country's energy challenges, particularly through the poor maintenance culture of infrastructures leading to heavy consumption, acquiring inefficient electrical products, and the practice of leaving electricity on more than its necessary. These practices exacerbate the energy challenges in Nigeria because of the needless consumption of energy that could have been saved and channelled to other uses.

Additionally, there is the issue of corruption and illiteracy which are among the factors contributing to energy challenges in the country. For example, people who live in congested areas often engage in illegal electrical connections with no meter to help them understand their energy use. With illegal connections, there is no device to help them track their energy consumption rate and their actions violate rules concerning use and management of

[156] Benjamin Sovacool and others, 'Energy Decisions Reframed as Justice and Ethical Concerns' (2016) 24 Nature Energy 16024.

electricity.[157] This raises the consumption of energy by these individuals to a level that may be considered to be unjust. All of this shows an attitudinal problem that adds to the energy challenges because they consume more energy that could have been used for other purposes. To advance the idea of just consumption of energy in Nigeria, some action points through policy and social tools are discussed below.

5.2.8.1 Policy Tools

A deeper look at Nigeria's legal and policy framework in the energy sector will show that there is no focus on addressing challenges associated with unjust consumption or energy wastage. Ideally, efforts towards the realisation of this imperative should focus on developing a policy framework targeted at ethical consumption by not only individuals but private and public companies and government departments. The move towards the implementation of this imperative should also focus on energy conservation measures through the use of energy-efficient products and technologies, energy-efficient appliances that can monitor carbon and encourage the use of renewable energy products by consumers. Thus, to effectively address the injustice of unjust consumption of energy, it is essential that the government adopts an energy justice approach through a viable policy framework geared towards embedding ethical practices in the country's policy framework. This approach should aim to prioritise ethical behaviour in how consumers make energy decisions which should be reflected in their pattern of energy consumption. Furthermore, the energy justice approach should stress that the use of energy efficient products (that reduces consumption) and engaging in anti-consumption activities will have a positive impact on other people across the nation. Within the policy framework for just consumption, there could be tax levy on excess energy usage to help reduce energy wastage and unjust consumption by individuals and companies. This could

[157] V. Egwemi and J.D. Agaba, 'Challenges and Prospects of Power Sector Reform in Nigeria' (2010) 8 (2) Journal of the National Association of Science, Humanities and Education Research 28-37.

lead to attitudinal change in public behaviours, thus making people to be less selfish in their use of energy and conscious of their actions.

5.2.8.2 Social Policy Tools

Another valuable way to promote just consumption of energy in Nigeria is through the introduction of social policy that is focused on educating people about energy use and how it is beneficial to all citizens. This means educating consumers on the need to develop the culture of consuming energy in a just and reasonable manner. The aim here is to use energy literacy programmes to make people understand that they have an ethical responsibility to reduce energy consumption where the means is available. Energy literacy in Nigeria is poor, especially in rural communities where sometimes the people are not able to distinguish the different forms of energy that could be used to power the economy.[158] It is the submission of this author that with energy literacy programmes, individuals and communities would be able to make informed energy decisions towards energy use. Energy literacy programmes could also help people to trace energy flows and think in terms of energy systems operation, know how much energy they use or consume, for what purpose, and where the energy comes from. This approach is important as it could help people to communicate about energy and its use in meaningful ways whilst helping them to make informed decisions that are based on an understanding of impacts and consequences. There is therefore a need for a change in people's attitudes to energy or consumption in Nigeria which is considered the most important step towards the elimination of wastage and unjust consumption.

5.2.9 Inter-generational and Intra-generational Equity

Closely linked to the imperative of sustainability is inter-generational and intra-generational equity. However, the framing here is based on the equitable distribution of benefits of energy

[158] Jonadab Ubochioma Chikaire and others, 'Energy Extension and Energy Literacy for Sustainable Energy Development' (2015) 4 (8) Agricultural Advances 84-92. doi: 10.14196/aa.v4i8.1936.

systems between firstly inter-generations, and secondly between intra-generations. Perhaps the most pressing question is whether matters of intra-generational and inter-generational equity for an energy-poor country such as Nigeria should override the need to fully harness its energy resources to achieve universal energy access for everyone. Put differently, should Nigeria maintain its right to continue to develop energy resources unsustainably to increase its capabilities and the quality of life of its citizens while compromising the right of future generations to enjoy a good life undisturbed by the damage caused today. To a large extent, this conception is predicated on the need to reduce the harm done to the ecosystems and the atmosphere's level of degradation and depreciation.[159]

Over the past few decades, recognition of this energy justice imperative has extended to the global legal community, with the concept having been incorporated into policies, laws, institutions, and judicial decisions at international, national, and local levels.[160] However, Nigeria has never prioritised it in the legal and policy framework applicable to the energy sector. A deeper look at this imperative in the context of Nigeria shows that it is framed from the lens of sustainable development and connected to the improvement of environmental protection in Nigeria. We note that since this imperative is pursued mainly through the lens of sustainable development it has served as a vehicle for greenwashing and not necessarily addressing the injustice. For example, because the imperative is rooted in sustainable development, governments and corporations have continued to maintain existing patterns of energy production that are environmentally destructive and facilitate business as usual with a green economy façade that is reflected in the country's approach to sustainable development in the energy sector.

[159] Laurent Jodoin, 'Let Capabilities Ring: Operationalizing Energy Justice in Guinea' (2021) 72 Energy Research & Social Science 101894.

[160] Edith Brown Weiss, "Implementing intergenerational equity" in Malgosia Fitzmaurice, David M Ong & Panos Merkouris, (eds), *Research Handbook on International Environmental Law* (Northampton: Edward Elgar Publishing, 2010) 100; See also Tamara Krawchenko and Karen R Foster, "'Generationing' Public Policy: A Multicountry Review of Intergenerational Equity Policies" (2016) 7 (2) Pub Pol'y & Gov Rev 95.

An examination of the 2018 NEP shows that there is no specific mention of this imperative. At best statements relating to inter-generational and intra-generational equity in the document are simply framed to protect the needs and interests of future generations in relation to the use of energy resources. However, this does not in any way advance the rights of all people to equitable distribution of benefits of energy systems. This short-sighted approach is failing to steer Nigeria towards the path of equitable distribution of access to the benefits of energy systems. The reason for this is connected to the country's quest to fully harness its energy resources in order to meet its energy demands, particularly for the present generation. As Brown Weiss has stated, "one cannot expect people to fulfill obligations to future generations if they are not able to satisfy their basic needs.[161] This research will now turn to policy and legal tools that can be used to drive this imperative.

5.2.9.1 Policy and Legal Tools

One of the barriers to advancing this imperative in Nigeria is the absence of domestic policy and legal framework to promote equitable distribution of the benefits of energy systems to all citizens. Perhaps a starting point to addressing this challenge is for national authorities to develop clear, comprehensive and transparent strategies towards equitable distribution of benefits of energy systems that are founded on an energy justice approach. It is essential for Nigeria's policy and legal framework in the energy sector to have in place clear and comprehensive strategies for an equitable distribution of the benefits of energy systems to all people. A valuable way to achieve this is through the use of legal and policy-led actions that would provide the legal basis and obligation for equitable distribution of the benefits of energy systems to all people. A comprehensive domestic legal framework could address questions relating to inter-generational and intra-generational inequity by making fairness in the distribution of the benefits of energy systems between generations its core value.

[161] Edith Brown Weiss, 'Climate Change, Intergenerational Equity, and International Law' (2008) 9 (3) Vermont Journal of Environmental Law 615 at 618.

5.3 The Implications of Implementing the Energy Justice Imperatives in Nigeria

Despite references to promising aspects of the energy justice imperatives to address challenges in Nigeria's energy systems, there is still the big question of how much work is needed to implement them. This question is raised because Nigeria is known to have a plethora of laws, regulations, and policies but has not effectively used them to address the critical issues affecting its energy systems. The challenges associated with the implementation of the imperatives vary and this could thwart well-intentioned energy justice approaches framed from them, thus, making them less effective in addressing energy challenges. The analysis of the energy challenges in Chapter two shows that aspects of Nigeria's legal and policy regimes contribute to the energy challenges. This is due largely to how the regime has been set up with a major focus on the development of a particular energy source without the need to diversify the country's energy options.

As evidenced in the analysis of the imperatives, it is clear that they are important to Nigeria's energy systems, and constitute the underlying energy challenges in the country. Thus, their implementation through legislative, policy and regulatory instruments proposed in this chapter could help in the delivery of energy justice to the Nigerian people. We note that their implementation would result in access expansion, including the expansion of the electricity grid which in turn would make the economy grow, thus translating into more national growth and development. It has been established from the history of economic growth that as access to and reliability of energy supply to businesses and homes increase as a result of the implementation of the energy justice imperatives, there would be an improvement in productivity and gains and systemic efficiency in the economy.[162]

As argued throughout this chapter, the implementation of the energy justice imperatives in Nigeria in some cases requires enacting comprehensive legislation and policy guidelines that

[162] Amadi (n 18) 346.

should seek to promote different obligations arising from the imperatives. This approach might involve developing a new legal regime in Nigeria's energy sector that would seek to advance the objectives of the imperatives. Overall, the aim is to see that the Nigerian state establish a legal regime for the energy sector that reflects principles embedded in the energy justice framework. The present author notes that implementing the imperatives could serve as a framework for the realisation of the overarching principle under UN SDG 7 which is centred on the provision of universal access to energy and services that is affordable, reliable and sustainable for all people.

One of the implications of implementing the imperatives in Nigeria is that they could help to instil good governance of the energy sector geared towards the delivery of just energy systems. For instance, the imperative of transparency and accountability in Nigeria's energy systems could help address issues relating to corrupt practices and its implementation is likely to instil good governance of the energy sector. This is because it focuses on transparent decision-making processes and financial accountability, as well as effectively helping to reduce corruption in the energy sector. There is also the advantage of allowing citizens access to information about the energy sector, which in turn facilitates participation in energy decision-making processes.[163]

For Nigeria, there is a greater chance to address the present energy challenges from a holistic viewpoint through the implementation of the energy justice imperatives. What is clear is that with the implementation of the imperatives to different aspects of Nigeria's energy systems, there is a chance that they could help to improve decision-making in energy-related issues. Additionally, they could have significant impacts on the operation of energy systems in the country, particularly transforming it into a system anchored on the idea of delivering just

[163] Tais Ludwig, 'The Key to Engaging with the SDGs: Utilizing RIO Principle 10 to Successfully Implement the U.N Sustainable Development Goals' (2017) 16 (2) Sustainable Development Law and Policy 26.

energy systems to the Nigerian people. The point here is that the implementation of the imperatives could help to inform energy decision-making and its content to improve the law and policy frameworks, whilst at the same time providing a platform to engage with stakeholders in the energy sector on ways to resolve the challenges.

5.4 Lack of Transparent and Verifiable Data: A Challenge to Implementation

Beyond the discussion on the implementation of the proposed energy justice imperatives in the preceding section, there is still the question of how to access transparent and verifiable data on Nigeria's whole energy systems. As has been mentioned in the introductory chapter (under section 1.5), the lack of accessible, transparent and verifiable data remains one of the limitations of the energy justice framework. Thus, to realize energy justice in any State, it is important that accuate, transparent and verifiable data is made accessible. It should be noted that the data on energy systems remains a key driver of the enrgey justice framework because it will help to identify specific areas in energy systems where the imperatives need to be implemented.

As can been seen in the case of Nigeria, there is the challenge of data not being publicly available on the websites of relevant government agencies in the sector, and public databases that collate such data are equally unavailable.[164] The implication is that even when there is a pathway (i e. the tools) to implement the imperatives, a lack of transparent and verifiable data on the levels of fuel poverty and access challenges, energy efficiency, sustainability among other areas is a key barrier to energy justice. Regrettably, this would continue to limit the ability of the various actors to effectively engage with the imperatives to resolve the energy poverty and access challenges. Such data can also enable other government agencies and

[164] Babalola and Olawuyi 'Overcoming Regulatory Failure in the Design and Implementation of Gas Flaring Policies' (n 90) 10.

ministries to design and implement their sustainable programs that could drive implementation of the framework in an informed manner.

5.5 Conclusion

This chapter has set out an understanding of how the energy justice imperatives could be implemented in Nigeria toward resolving its energy challenges. It argues for the implementation of the imperatives relevant to Nigeria through an energy justice approach driven mainly by law and policy systems that are designed to address different aspects of energy access and poverty challenges. Here, the present author argues that the imperatives could be deployed as a strategic tool for policy makers to address underlining justice problems associated with the energy challenges in Nigeria. A key part of the argument is premised on the call for policy makers in Nigeria to engage with the imperatives drawn from the energy justice concept. In this regard, the chapter argues for the implementation of the imperatives, which in the Nigerian context means domesticating obligations arising from them as a way to resolve some aspects of the country's energy challenges.

Part of the analysis in this chapter was premised on how Nigeria could approach the energy challenges using the imperatives through proposed legal, policy, institutional and regulatory tools. Here, the present author further argues that they could serve as a decision-making tool for relevant actors including national governments, policy makers and regulators, companies and individuals. The chapter noted that the incorporation of the energy justice imperatives into law and policy-making processes could alter how energy systems in Nigeria are managed toward addressing energy challenges. As argued by Omorogbe, for there to be an appreciable change towards tackling the challenges in the country's energy sector, there is a need to deviate from the current practices that are not yielding the desired results.[165] Therefore, Nigeria needs to adopt an energy justice approach based on the imperatives to revamp the

[165] Omorogbe 'Legal Dimensions of Access to Modern Energy Services in Africa' (n 25) 329.

energy sector and ensure that it meets modern societal goals of achieving availability, reliability, sustainability, transparency and accountability among others in energy systems. Here the present author has shown that energy laws and policies in Nigeria should be made to advance the energy justice framework. This is because they remain the normative standard through which the challenges could be resolved and for delivering just energy systems to the Nigerian people.

A final point of reflection in this chapter is dedicated to some implications of implementing the energy justice imperative through the proposed tools. This is based on the complicated task of dealing with the energy justice concept from the arena of legal instruments that demands that lawmakers, as well as policy makers who are actors of energy justice, should first delimit the scope of the concept and then identify the legal instruments needed to implement the imperatives. The present author submits that doing this could help Nigeria to reach the aspirations of the energy justice standard set out in Goal 7 of the SDGs. All of these show that a successful implementation of the energy justice imperatives will not be a 'walk in the park' but a product of intent articulated by the relevant actors and supported by complementary laws and regulations for the energy sector. In the next and final chapter, I conclude with a summary of findings, recommendations and suggestions on areas for future research on the energy justice framework.

CHAPTER SIX

Conclusions and Recommendations

6.0 Summary and Conclusion

It has been the aim of this research to analyse, evaluate and implement an energy justice framework for resolving Nigeria's long-running energy challenges. As shown throughout this research, one of the features of the energy justice framework is its ability to reframe energy law and policy systems so that they reflect justice principles in energy systems. This implies that the concept could be used to frame laws and policies to resolve the economic social and environmental effects of energy challenges. Additionally, the energy justice framework provides important steps on how to understand specific problems and challenges relating to energy from an injustice perspective. It offers novel ways of thinking, researching, and responding to different injustices manifested by energy systems. The discourse on the energy justice concept and its framework, and more specifically its application appear to have a never-ending checklist. This is because the concept falls into an abstract place that is disconnected from the realities of energy research and practice.[1] Consequently, its understanding should begin from multiple situated perspectives of energy challenges, especially as they relate to indivudual countries.

As has been shown in this research, discussions on energy challenges have now moved beyond the traditional notion of shortages in terms of energy supply, technology or infrastructural deficiencies and gaps to eliciting injustices in energy systems exacerbating energy challenges. Hence, the present author undertook this research in order to find whether the energy justice concept and its framework could be used to resolve the challenges. Using Nigeria as a case study, this research has offered 'new' and 'substantive' approaches through

[1] Darren McCauley, *Energy Justice: Re-Balancing the Trilemma of Security, Poverty and Climate Change* (Palgrave Macmillan 2018) 10.

the lens of the energy justice framework for resolving energy challenges. It has shown that the concept is a tool that could be used by policymakers to make energy decision that are capable of producing just and reasonable outcomes. In this regard, the research emphasised the need for Nigeria to set up a clear and comprehensive energy law and policy regime, specifically gleaned from imperatives drawn from the energy justice concept. While the discussions on the imperatives were based on developing energy justice approaches toward resolving Nigeria's energy challenges, they culminated in a broad examination of Nigeria's energy systems from a justice perspective. As noted in the energy justice literature, pursuing energy justice relies on a static interpretation of justice, rooted in a long history of philosophical thoughts on justice, but also a continual re-interpretation of justice rooted in modern socio-cultural and socio-technical relations in the governance of energy systems.[2] This idea of re-interpreting justice in the context of energy governance is useful for a country like Nigeria because of its understanding of energy access and poverty challenges seen to be rooted in technological biases. Thus, this research submitted that Nigeria's energy challenges are beyond factors that are rooted in economic and technological deficiencies in the energy sector but are also linked to injustice issues existing in its energy systems. In this regard, the research has emphasised the importance of contextual understanding of the energy justice concept with Nigeria as a focus, thus, moving the debate beyond universal approaches. Therefore, the starting point to resolving some aspects of energy challenges is through a thorough understanding of how injustices manifested by energy systems exacerbate the challenges and how the energy justice framework could be employed to resolve them.

Indubitably, there is no one-size-fits-all approach to resolving energy challenges. This research acknowledges that fact and notes that for example, the approach suitable for Nigeria is unlikely to be appropriate for other countries faced with energy challenges. This implies

[2] Andreas Goldthau 'Rethinking the Governance of Energy Infrastructure: Scale, Decentralization and Polycentrism' (2014) 1 Energy Research and Social Science 134-140.

that individual countries with energy challenges require an individualistic assessment of the problem that will then be matched with appropriate measures for resolving them. This research further acknowledges that viewpoints differ in terms of the implementation of the energy justice imperatives, and more importantly, that their application may lead to different results. For example, from the analysis of the energy situation in Nigeria, it is clear that to implement the energy justice framework, whole energy system approaches are needed.

To achieve the above, this research first established that Nigeria's energy challenges are linked to unjust energy systems which have impacted the energy sector. The energy sector plays a dominant role in Nigeria's international diplomacy and serves as a tradable commodity for foreign exchange earnings and government revenues and is used to support development programmes.[3] However, due to the deficiency experienced in the sector and attributed to the different strands of injustice existing in the system, it was necessary to find whether the imperatives could be used to resolve the challenges. The implementation of the energy justice imperatives presents policymakers and energy decision-makers in Nigeria with the opportunity to use an energy justice approach to resolve energy challenges.

The central research question answered in this research is to ascertain the extent to which the energy justice framework could be used to resolve Nigeria's energy challenges. In answering the above question, this research has progressed over six chapters including this conclusion. The first chapter established the context of the research by analysing specific issues in Nigeria's energy systems relating to demand and supply crisis, unjust energy institutions, energy inefficiency, legal, policy and regulatory gaps in the energy sector, and environmental impact crisis that disrupts energy development amongst others. The aim was to discuss the extent to which these issues exacerbate the energy challenges in Nigeria. Thus, the analysis in

[3] Sunday Oyedepo 'Energy and Sustainable Development in Nigeria: the Way Forward' (2012) 2:15 Energy, Sustainability and Society 87 <http://www.energysustainsoc.com/content/2/1/15> accessed 18 February 2022.

this chapter helped to find out where potential injustices lie in Nigeria's energy systems, how they contribute to the energy challenges, and more importantly, set out a discussion on the role the energy justice framework could play in resolving them.

Chapter two builds on the issues raised in chapter one but from a broader perspective which has indeed led to the energy crisis in Nigeria. In this regard, the chapter examines different dimensions to energy crises from the following perspectives: shortages, wastage and high/over-consumption and draws out the economic, social and environmental implications. This chapter also discussed government efforts through economic, social and environmental policies introduced to address the problems characterised by the energy crisis in Nigeria. In this regard, it looked at how having energy security could also be a potential solution to the energy crisis. Part of the findings in this chapter is that there is a need for a systematic application of the energy justice framework to Nigeria's whole energy system as it would offer a new approach to resolving the country's energy challenges.

Having explored the energy crisis in Nigeria, Chapter three sets out the theoretical framework underpinning this research by examining the energy justice concept and its framework from global perspectives. Here, the present author framed the analysis of the concept through the lens of the three core dimensions namely distributive, recognition and procedural justice. The chapter further presents an interpretation of the energy justice concept from an African perspective. Here, the energy justice concept and analysis in the scholarship is moved beyond western theorization of the concept to how it should be interpreted in order to resolve specific energy challenges faced by African states. In this regard, this author argues for an interpretation of the concept from an African perspective that advances decentralised energy structures as opposed to centralised ones in African states. This is to make energy systems in African states more responsive to underserved communities, allow for practical public

participation and inclusion, and to ensure that equity is put at the forefront of policy-making in the energy sector.

Additionally, the idea of energy justice advanced in this research is one that should result into equal distribution of the benefits and burdens of energy systems to all people. As has been argued in this research, the energy justice concept seeks to influence decision making in the energy sector by incorporating justice and ethical considerations. In this research, this author showed that the concept could be used to identify when, where and how injustices have occurred in energy systems, and how the injustices can be eliminated. Thus, the analysis focused on opening a pathway towards achieving energy justice in Nigeria by showing how far concept and its framework could be applied toward resolving Nigeria's energy challenges.

Having analysed the energy justice concept and its framework from global perspectives, Chapter four then draws out and analysed a set of energy justice imperatives from the literature that could be used not only to address energy challenges, but to help realise just energy systems at the international and domestic levels. This chapter examined the energy justice imperatives that could be used by an individual State to resolve energy challenges by way of making outcomes from energy system operations just and reasonable. Here, the author identified relevant actors such as policy makers and regulators, national governments, individuals, companies and NGOs with responsibilities to ensure that the demands of energy justice through the imperatives are met in energy systems. The analysis in this chapter focused on understanding the extent to which the imperatives could be used to realise just energy systems as a part of the solution to some aspects of energy challenges. In this regard, it considers the imperatives in the context of international and domestic perspectives and showed how some of the imperatives, when implemented in energy systems, could help to address contemporary energy challenges both at the international and domestic levels.

Chapter five analysed the energy justice imperatives in the context of Nigeria by proposing relevant tools in the form of legal, policy, and regulatory measures that Nigeria could engage with to apply the energy justice framework in its energy systems. The argument sustained in this chapter shows largely how the energy justice framework through the imperatives could provide an energy justice approach towards resolving the challenges in Nigeria's energy sector. In this regard, the present author argues that an effective way to implement the imperatives is through the incorporation of principles derived from the concept into Nigeria's energy law and policy regime. The aim is to understand the extent to which the energy justice imperatives identified in chapter four could be implemented in Nigeria's energy systems.

Chapter six (i.e., the conclusion) summarises all the analyses of issues raised in previous chapters and proposed substantive energy justice approaches that Nigeria needs to adopt to resolve its energy challenges. Part of the concluding remarks is based on setting pathways toward energy justice in Nigeria through the three core dimensions of the concept. This chapter details a list of recommendations framed from energy justice approaches that will help Nigeria in resolving its energy challenges. The recommendations made in this concluding chapter will proactively go beyond Western theorization of the energy justice concept where the approaches tend to generalise the application of the concept. In this regard, the research draws out specific approaches that are suitable for Nigeria's energy challenges – some of which are drawn from the implementation of the energy justice imperatives. Additionally, the recommendations focus on how the energy justice framework could realistically be translated into expected results in Nigeria. Lastly, this chapter highlights the overall contribution of the research to the energy justice scholarship, particularly from an African perspective and makes some suggestions for future research. The next section provides a summary of the pathway to achieving energy justice in Nigeria through the three core dimensions of the concept.

6.1 Pathways Toward Energy Justice in Nigeria

To effectively set Nigeria up for the realisation of energy justice, there is need for certain actions to be taken to set out pathways to energy justice in the country. In view of the above, this section makes the argument through the prism of the three core dimensions of energy justice namely - recognition, procedural and distributive justice in energy systems. This means taking actions in order to (i) ensure that the energy needs of people and families on low incomes are addressed; (ii) to ensure that people are provided with the opportunity to participate actively in energy decisions and that the voices of people are heard; and (iii) to ensure fair distribution of energy benefits and burdens. To establish pathways toward energy justice in Nigeria, there is a need to look to possible directions for future law and policy, clustered under the three core dimensions of the energy justice concept. The idea is to resolve distinct challenges associated with the distributive, recognition, and procedural aspects of justice in Nigeria's energy systems.

As has been discussed in this research, modern-day energy systems are increasingly requiring a nuanced understanding of justice concerns that affect how energy systems are viewed, particularly in terms of their capacity to deliver just energy systems.[4] From the argument presented in this research, one could conclude that energy challenges now exist far beyond the premise of technology or infrastructural gaps and are increasingly cutting across justice issues that more or less affect how energy systems work. In reality, justice issues in energy systems have become a contributory factor to diverse energy challenges. Also, from the argument advanced in this research, one could argue that it is difficult to trace the outline for a model of a just energy system without identifying instances of injustice in the system.[5] To

[4] Raphael Heffron and Darren McCauley, 'Achieving Sustainable Supply Chains through Energy Justice' (2014) 123 Applied Energy 435-437.
[5] Benjamin K. Sovacool, Roman V. Sidortsov and Benjamin R. Jones, *Energy Security, Equality and Justice* (Routledge 2014) 198.

achieve a just energy system model, there is a need to first draw out the energy injustices manifested through the three core dimensions of the concept.

As has been discussed in Chapter three, a valuable way to understand instances of injustice in the system is through the lens of the three core dimensions of energy justice. This is because injustice rooted in the three core dimensions permeates whole energy systems – i.e from production to consumption. For instance, an injustice that is often witnessed in Nigeria is that the country formerly was producing more than 2 million barrels of oil daily for energy, but never had the necessary oil-refinery capacity and consequently, had to export her crude oil and import refined oil.[6] This is a manifestation of energy injustice because this arrangement is designed to enrich certain individuals. It is important to note that an understanding of injustices from these three dimensions will inform relevant actors, particularly policy makers of the need to pay greater attention to justice-based issues within energy systems rather than maintaining the status quo that focuses on addressing technological and infrastructural issues. Therefore, the present author submits that the approach to identifying injustice through the three core dimensions would help in the delivery of just energy systems to the Nigerian people.

To effectively frame the pathways to achieving energy justice in Nigeria through the dimensions, the approach should be from the position of policy-led actions to make energy systems more just. The use of policy-led actions is in many ways geared toward addressing various energy challenges in the sector. This means that policy makers could examine the core dimensions of energy justice and identify where injustices occur, who is impacted and how, and what remedies exist. In practice, this approach would serve as a channel to resolve some aspects of the energy challenges underpinned by justice concerns in Nigeria. This

[6] Hanri Mostert and Helen Van Niekerk, 'Disadvantage, Fairness, and Power Crises in Africa: A Focused Look at Energy Justice' in Yinka Omorogbe and Ada Odor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 64.

would also assist relevant actors to set in motion practical measures to ensure the delivery of just energy systems. Additionally, it could serve as a decision-making tool to assist energy proponents and consumers to make informed energy decisions.[7] The following section examines how the three core dimensions could be used to set out pathways toward energy justice in Nigeria.

6.1.1 Addressing Distributive Injustice

The findings in this research show that energy injustices exacerbating energy challenges are attributed to the ill distribution of energy benefits and burdens, including uneven distribution, production and consumption of energy. For example, the location of energy production facilities such as wind power stations, dams and gas power stations – all of which could create inequalities in access to energy thus raising justice concerns. In Nigeria, it is fair to argue that relevant actors such as policy makers and regulators, the national government and individuals often display a lack of understanding of injustices manifested in energy systems through distributive injustice. As discussed in Chapter three, the idea of distributive justice is to ensure a fair distribution of energy benefits and burdens equally to all members of society. Thus, the failure to properly distribute the benefits and burdens of energy to all sections of Nigerian society is a major contributory factor to energy challenges. This is evidenced in the disparities in terms of energy access and services between rural and urban populations, and across the country. The distributive injustice here means that people with limited or no access to energy services will generally have fewer educational opportunities, less access to fertile land and other natural resources, poorer health, negligible political representation, limited economic opportunities and inadequate access to health services.[8]

[7] Benjamin Sovacool and others, 'New Frontiers and Conceptual Frameworks for Energy Justice' (2017) 105 Energy Policy 677-691.
[8] Sovacool, Sidortsov and Jones, *Energy Security, Equality, and Justice* (n 5) 199.

Further findings in this research have also shown that some features of the operation of whole energy systems - i. e. from production to consumption have an impact on fairness and justice.[9] Some of these impacts are manifested through distributive injustice perpetrated mainly in domestic energy systems. For Nigeria, energy injustices relating to uneven distribution of energy burdens and benefits are quite apparent in its energy systems operation. These injustices contributing to the energy challenges are mainly attributed to issues ranging from lack of access to energy to fuel poverty and environmental pollution. For instance, distributive injustices in Nigeria have been linked to environmental and social burdens associated with energy systems faced by oil producing communities in the NDR where oil and gas exploration and production activities are conducted. This is also manifested in the laying of pipelines for the transportation of oil and gas resources which is done mostly in rural communities passing through farmlands and fishing waters. The focus for policy makers should be based on identifying who is eligible to get energy benefits, how they are targeted and eliminating the potential disparity between different areas (i. e urban and rural populations).

To further address issues of distributive justice in Nigeria, a key objective should be to aim for consistent, just and reasonable outcomes in energy decisions. This would involve ensuring that energy benefits derived from oil production in a place such as the NDR of Nigeria are fairly and equally distributed to the oil producing communities and other areas. For example, providing energy access and services should begin by assessing the connectivity to the national grid, which differs between urban and rural areas even though the resources for generation are located in rural communities. According to energy scholars from the Global South, improving access to energy requires an understanding of local contexts that in diverse ways prioritise income generation activities and poverty alleviation and inclusion of women

[9] Benjamin Jones, Benjamin Sovacool and Roman Sidortsov, 'Making the Ethical and Philosophical Case for "Energy Justice"' (2015) 37 (2) Environmental Ethics 145-168.

to ensure that they benefit from energy systems.[10] To achieve this, there need to be effective policy-led actions that seek to address the unequal distribution of energy burdens and benefits arising from local decisions relating to energy systems. This implies that policy makers as actors of energy justice would have to redesign policy systems, ensuring that they are effective and aspects of it geared toward a fair distribution of energy benefits and burdens to all Nigerians. The policy framework would significantly provide an opportunity to address distributive injustices that are mainly the root cause of civil unrest and militancy activities in the NDR, leading to the destruction of energy infrastructures in Nigeria. The point here is that putting in place such a policy system will help forge a working relationship between the different actors of energy justice.

6.1.2 Addressing Recognition Injustice

In terms of recognition justice, the findings in this research show that energy is an integral part of human welfare. However, some people need more than others just to have access to the same opportunities and fulfilment. This is where policies fail to address issues relating to the recognition injustice in energy systems. This is often manifested where energy policies either fail to recognise or misrepresent certain groups of people that are vulnerable and their needs. It is important to note that not taking needs into account, or misrepresenting them, is a fundamental injustice of recognition, which results in the unfair distribution of energy benefits and a lack of due process in the management of energy systems. For example, Nigeria's energy policy regime and the measures put in place to address the various effects of the energy crisis (as discussed in Chapter two) do not appear to have taken into account people who are vulnerable or misrepresented. This is evidenced in the various policy interventions aimed at resolving the country's energy crisis where the focus has always been to increase the availability of energy supply to urban areas.

[10] Gudina Terefe Tucho, 'The Impacts of Policy on Energy Justice in Developing Countries' in Gunter Bombaerts and Others (eds), *Energy Justice Across Borders* (Springer 2020) 137.

Recognition justice as a pathway to energy justice is based on recognising communities and people in the process of making policy and energy decisions. For countries in the Global South such as Nigeria, this injustice has become a major contributory factor to the energy challenges. This is because the lack of recognition often leads to the loss of valuable knowledge of indigenous people. For instance, since the discovery of oil and gas resources in the NDR of Nigeria, it has created a false sense of ownership that the people of the region have exacted unconstitutionally.[11] Although this idea is contested by the FGN as relevant statutes stipulate who should exercise ownership and control over the natural resources in Nigeria.[12] However, as has been stated, the resurgence of militant activities and agitations from the people of the NDR is largely a testament to the non-recognition of their social and cultural identity that is due to them. This is evident in the lack of infrastructural development in the region, which is often described as the 'goose that lays the golden egg'. In Nigeria, this injustice stems from the nature of the environment created by the FGN that fails to take into account recognition justice principles – i.e. one that includes fair and adequate representation in energy decision-making processes, together with recognition of the social and cultural identity of the people in host communities where oil and gas exploration activities are conducted.

As mentioned in Chapter three, the recognition injustice dimension arises as a result of the failure to recognise different perspectives rooted in social, cultural, ethnic, racial and gender differences.[13] For instance, in the Global North countries such as the UK, only relatively recently did government policy began to recognise the specific needs of particular social

[11] Lawrence Atsegbua, *Oil and Gas in Nigeria: Theory and Practice* 3rd edition (Fifers Lane Publishers 2012) 9-10.
[12] See section 44 (3) of the 1999 Constitution (as amended) of the Federal Republic of Nigeria; See also section 1 (1) of the Petroleum Industry Act 2021.
[13] David Schlosberg, "The Justice of Environmental Justice: Reconciling Equity, Recognition, and Participation in a Political Movement" in Andrew Light and Avner de-Shalit (Eds), *Moral and Political Reasoning in Environmental Practice* (London: MIT Press 2003) 125-156.

groups – such as the elderly and infirm and their reliance on higher than average room temperatures.[14] Before now the initiatives have focused on the provision of objective information as well as on economic subsidies and other incentives for increasing the energy efficiency of the housing stock and electrical appliances.[15] But hardly any attempts have been made to find out the motivations behind the consumption patterns of the energy poor or to engage with how they interpret energy-related issues, and what kind of improvements and strategies they would propose and endorse. The same challenge exists in the Global South countries such as Nigeria where there is an apparent failure to recognise vulnerable groups in policy-making and energy decision-making processes. However, the failure on the part of the Nigerian State to recognise this issue is largely due to post-colonialisation in the policy regime where the needs of the less advantaged are seen as secondary and not contributory to national development.[16]

In sum, to advance recognition justice as a pathway toward energy justice in Nigeria, there is a need for policymakers to prioritise the importance of putting the needs of vulnerable people at the centre of energy policies designed to address energy challenges.[17] This approach would be driven by policy settings or mechanisms largely concentrated on vulnerable households' wider circumstances and needs. It should be made in such a way that where possible, vulnerable households should be supported holistically with entitlement to energy measures being one aspect of a wider set of benefits of energy systems.

[14] Gordon Walker and Rosie Day, 'Fuel Poverty as Injustice: Integrating Distribution, Recognition and Procedure in the Struggle for Affordable Warmth' (2012) 41 Energy Policy 69-75.
[15] ibid.
[16] Yinka Omorogbe, 'Legal Dimensions of Access to Modern Energy Services in Africa' in Iñigo del Guayo and others (eds), *Energy Justice and Energy Law* (Oxford University Press 2020) 332.
[17] ibid.

6.1.3 Addressing Procedural Injustice

As discussed in Chapter three, procedural injustice and its impact on energy systems are mainly concerned with the problem of inequitable and undue procedures in energy decision-making. In energy practice, it refers to the balance of power in decision-making, as well as issues of accountability and impartiality.[18] Perhaps the starting point to addressing procedural injustice should be based on an understanding of the reality that people need to be offered opportunities to be involved in energy decision-making including how system infrastructures and technologies are built.[19] This implies that the people whom energy systems are originally designed to serve must be engaged in a non-discriminatory way,[20] ensuring that all groups can participate in the process and that their decisions and concerns are taken seriously throughout the planning and execution of the energy projects.[21] This is one way to ensure that energy decisions relating to access projects are not jeopardised or hindered as a result of protests or agitations from community members.

For Nigeria, the current energy policy regime shows that the level of input from those that are impacted by energy decisions is minimal or at the very least non-existent. This is because the current approach by the FGN to an all-inclusive participatory platform in relation to the formulation of energy policies is ill-defined. As discussed in Chapter five, the non-participatory approach in energy decisions, particularly as it relates to the NDR region where oil and gas activities are mainly conducted continues to cause tension between oil producing communities and energy proponents. For instance, the recent enactment of the Petroleum

[18] Benjamin Sovacool and Michael Dworkin, *Global Energy Justice: Problems, Principles and Practices* (Cambridge University Press 2014) 11.
[19] Ramazan Sari and others, *Energy Justice : A Social Sciences and Humanities Cross-Cutting Theme Report* < https://shapeenergy.eu/wp-content/uploads/2017/07/SHAPE-ENERGY_ThemeReports_ENERGY-JUSTICE.pdf> accessed 30 June 2022.
[20] Gordon Walker, 'Beyond Distribution and Proximity: Exploring the Multiple Spatiality of Environmental Justice' (2009) 41 (4) Antipode 614-636; Robert Bullard, "Environmental Justice in the 21st Century" in J. Dryzek and D Schlosberg, *Debating the Earth* (Oxford: Oxford University Press 2005) 322-356.
[21] Darren McCauley and others, 'Advancing Energy Justice: the Triumvirate of Tenets and Systems Thinking' (2013) 3 International Energy Law Review 107-110.

Industry Act 2021 (PIA) generated a lot of tension and concerns from members of host communities in the NDR of Nigeria. This is largely due to the cosmetic nature of the public hearing organised by the National Assembly in the build-up to the enactment of the PIA. At the time of writing, it was clear that actions of the National Assembly in the making of certain energy decisions may have shown utter disregard for the needs and priorities of host communities that are worst hit by the impact of oil exploration and production in Nigeria.[22] All of the above result in agitations and unrest in the oil producing communities, consequently leading to the disruption of energy production.

To enhance procedural justice in Nigeria's energy systems, there is a need to ensure that the voices of people are heard throughout the energy policy-making process. Particularly, in the NDR of Nigeria where oil and gas operations are conducted, the voices of vulnerable communities must be systematically sought during policy-making for the development and management of energy resources. This is likely to impact all aspects of policy delivery including the setting of targets, eligibility criteria, and funding priorities. The point here is that ensuring procedural justice in energy decisions, planning and processes could go a long way towards the delivery of just energy systems. More so, procedural justice in energy systems presents States with an opportunity to provide energy services coherently. This is achieved through the active participation (in the policy-making process) of vulnerable communities in collaboration with state institutions and agencies who in most cases are responsible for making energy decisions.

In sum, it could be deduced from the analysis above that there are energy injustices rooted in the three core dimensions of the energy justice framework contributing to energy challenges in diverse ways. For Nigeria, identifying the injustices manifested through the dimensions

[22] Matthew Ogune, 'Disregard for Host Communities in Petroleum Industry Bill will fuel fresh agitations in Niger Delta' The Guardian July 2021 https://guardian.ng/news/disregard-for-host-communities-in-pib-will-fuel-fresh-agitations-in-niger-delta/ accessed 28 June 2022.

remains a viable way for policy makers and other relevant actors of energy justice to begin to think of how to resolve some aspects of the country's long-running energy challenges. With this approach, the country would go beyond the traditional thinking of attempting to resolve energy problems from a technological viewpoint.

6.2 Recommendations: Approaches Toward Energy Justice in Nigeria

As discussed throughout this research, the energy justice framework offers new approaches to resolving Nigeria's energy challenges. Particularly, through the implementation of the imperatives derived from the framework, Nigeria can begin to develop new ways of thinking in the manner it seeks to resolve its long-running energy challenges. Building on the analysis of the implementation of the imperatives in Chapter five, this research further offers some recommendations, in the form of practical approaches toward energy justice in Nigeria. Here, the recommendations made in this concluding chapter are based on different issues contributing to Nigeria's long-running energy challenges. It is pertinent to note that they are in no way an attempt to proffer solutions from a technical, engineering or mechanical point of view. Part of the concluding analysis is gleaned from the present author's interpretation of the energy justice concept and its framework from an African perspective discussed in Chapter three. This is based on an understanding of the energy challenges faced by the Nigerian State before evaluating and implementing the energy justice framework toward resolving them. The findings show that Nigeria's energy challenges are beyond the technical or infrastructural gap, and more specifically, show that there are aspects of the challenges that are underpinned by justice issues. It is in light of the above that this research puts forward recommendations that are gleaned from the energy justice framework for resolving Nigeria's energy challenges. The recommendations are as follows:

6.2.1 Advancing Universal Access to Energy

A starting point toward resolving Nigeria's energy challenges with the use of the energy justice framework is to advance the concept of universal energy access and services for all people. This is because Nigeria's energy challenges are mainly centred on issues around poor energy access even though the country is known to possess vast energy resources. Thus, where Nigeria is potentially able to provide universal access to energy and services, it would certainly be fulfilling a key objective of the energy justice concept. We note that universal access to energy services is vital for societal well-being and countries' economic development. The centrality of energy as a basic right, underpinning health, economic advancement and education place the State at the centre of providing universal access to energy and services.[23] Therefore, the actions of the State are important to examine in order to understand the implementation of the imperatives drawn from the energy justice concept.[24]

It is instructive to note that the approach to universal energy access would imply providing an interpretation of the energy justice concept in the context of realizing universal energy access and services to the Nigerian people. Even though universal access has been the aim of the reforms in the energy sector undertaken by the FGN, it has not yet yielded the desired result. Thus, it is important to look at the concept and provide an interpretation that is based on the realisation of universal energy access and services in Nigeria. This research has established that a key aspect of the energy justice framework is drawn from the idea of providing universal access to energy that is reliable, affordable and sustainable for all. As has been discussed, universal access to energy needs to include the energy required to drive economic growth and generate income for all people.[25] Furthermore, universal access to energy needs to consider the provision of and ability to afford and use modern and clean fuels for basic

[23] Michael Carnegie Labelle 'In Pursuit of Energy Justice' (2017) 107 Energy Policy 615-620.
[24] ibid.
[25] Tucho (n 10) 142.

human needs, productive uses and modern societal needs.[26] Thus, a more comprehensive approach to universal access to energy should address the need for modern energy and services to improve the livelihoods of the poor while at the same time, using modern energy to drive local economic development on a sustainable basis.[27] All of these show that an aspect of the energy justice framework is tailored towards the realization of universal access to energy.

For Nigeria, an aspect of the energy justice framework in this research has been interpreted to mean increasing energy access as part of the measures to resolve energy challenges and the findings show that this could be achieved through the implementation of the energy justice imperatives. Potentially, the implementation of the imperatives would enable the country to use the framework to increase universal access to energy and services and consequently leading to the delivery of energy justice. It is instructive to note that universal access to energy remains a key factor in the realisation of energy justice in Nigeria. The present writer will, therefore, propose here that there should be the reframing of domestic legislation that would seek to practically push for increased universal energy access and service in Nigeria. Here, the FGN could establish what is known as a "Universal Access to Energy Plan" that would essentially outline the mechanisms to be used for universal access to energy and rural energization. This could be achieved through measures such as (i) setting up programmes for the use of natural gas for more power generation expansion; (ii) developing programs of new supplies in energy frontiers for underserved communities; and (iii) developing programs that would see to the improvement of rural energy use through the setting up mini-grids in areas not served by main grids.

[26] ibid 142.
[27] ibid.

Furthermore, as has been noted, a key aspect of the energy justice framework is embedded in the UN SDG7 – where States are encouraged to ensure access to affordable, sustainable and modern energy for all. This aspect contains features that could be used to also provide an interpretation of the energy justice concept and possibly provide what just energy systems entail. This research finds that energy law and policy regimes could leverage the framework to also realise SDG 7. The point here is that where policies aimed at realising SDG7 are developed on the premise of the delivery of a just energy system, this will significantly translate into energy justice.

Another effective way to advance universal energy access as an energy justice approach to resolve some aspects of energy challenges in Nigeria is to leverage arguments that are based on establishing a right to energy access as a human right. Although it has been argued that there is no explicit human right yet to energy access and services, it is implicit in existing human rights obligations under international law.[28] This shows that the concept of a right to universal energy access has gained increased attention and is being developed toward a rights-based concept.[29] Thus, the right-based approach to energy access presents an opportunity to use the framework for advancing universal energy access in Nigeria. As has been argued in Chapter five, this approach links to the constitutionalising of access rights. This approach could be a springboard, therefore, that would lead to the recognition of universal energy access right in Nigeria. More so, the relevant actors could leverage the framework to frame energy access as a right (using legislative instruments) in the context of promoting energy justice to provide individuals and communities with more

[28] Adrian Bradbrook, 'Achieving Access to Modern Energy Services: A Study of Legal Strategies' in Yinka Omorogbe and Ada Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 30.

[29] Chian-Woei Shyu. 'A Framework for 'Right to Energy' to Meet the UN SDG7: Policy Implications to Meet Basic Human Energy Needs, Eradicate Energy Poverty, Enhance Energy Justice, and Uphold Energy Democracy' (2021) 79 Energy Research and Social Science 102199

sustainable, reliable and affordable energy.[30] This is what the energy justice concept entails. Regrettably, the process of enacting legislation that seeks to improve energy access may not entirely result in actual improvement of access as there is also the challenge of implementation. Particularly, in Nigeria, there is the additional challenge of a lack of political will to translate the legislation through implementation into practical delivery of energy access and services. This is in addition to the general reluctance of legislators to enact proactive laws in areas involving public policy. Thus, there needs to be more legislative proactiveness geared towards increasing energy access in Nigeria. This approach would ultimately translate into the implementation of the energy justice imperative of access in Nigeria.

6.2.2 Decentralisation and Diversification of Energy Options (DDEOPs)

Following closely with the recommendation of providing universal energy access and services as a way to resolve Nigeria's energy challenges and deliver energy justice is the need to undertake practical and comprehensive decentralisation and diversification of energy options (DDEOPs). Decentralisation describes a process in which there is a shift from centrally planned, financed and operated electricity systems to a more diffuse, decentralised system where the planning, finance and operation of the system are shared between an increasing number of parties.[31]

As has been argued in this research, an interpretation of the concept of energy justice in the context of Nigeria means the delivery of energy access and services through a robust energy mix. This means developing an energy system for the Nigerian State that is focused on

[30] Allie Silverman, 'Energy Justice: The Intersection of Human Rights and Climate Justice' in Sébastien Duyck, Sébastien Jodoin and Alyssa Johl (eds), *Routledge Handbook of Human Rights and Climate Governance* (Routledge 2020) 251.

[31] Niko Soininen and Kaisa Huhta, 'Law for Decentralized Electricity Systems: Lessons from Complexity Theory' in Ruven Fleming, Kaisa Huhta and Leonie Reins (eds) *Sustainable Energy Democracy and the Law* (Brill Nijhoff, Leiden, Boston 2021) 77.

diversification and decentralisation of energy options as a way to resolve some aspects of the country's challenges which is in the form of shortages of energy supply. This could be achieved through a reframing of the institutional, legal, policy and regulatory tools to ensure that principles embedded in the imperatives that support decentralisation and diversification manifest in the Nigerian energy system.

Regrettably, at the heart of the energy challenges in Nigeria is the failure of the Federal Government to recognise and actively pursue the diversification of energy options.[32] As has been mentioned in Chapter two, Nigeria's electricity grid is largely monopolised by the government and only in design following the series of reforms does it look transformed from a state-dominated system to a private-sector-led one. Additionally, an increasing problem associated with the energy challenges faced by Nigeria is the failure to decentralise the energy structure. The reality is that decentralisation plays a significant role in democratising the energy sector, and could help in the delivery of energy justice. The present author would, therefore, submit that the introduction of policies that support a practical robust energy mix in the Nigerian energy sector is fundamental to any effort aimed at resolving the country's energy challenges. Furthermore, the decentralisation of structures and diversification of energy options are pivotal if Nigeria is to achieve energy justice. The present author will submit that this will be achieved through the creation of an enabling environment for the private sector to fully participate with very limited government control. Thus, government and private stakeholders must endeavour to explore the possibility of utilising alternative energy sources, such as solar and wind, to augment the hydro and thermal sources that Nigeria relies on.

[32] Godswill Agbaitoro and Kester Oyibo, 'Realizing the United Nations Sustainable Development Goals 7 and 13 in sub-Saharan Africa by 2030: Synergizing Energy and Climate Justice Perspectives' (2022) 15 (3) Journal of World Energy Law and Business 223-235.

The idea behind DDEOPs is founded on the premise of investing in different forms of energy such as solar, wind, and local biodiesel and simple windmill-based water pumps, to bridge the gap between capital-intensive energy and the traditional subsistence-based technologies of the energy-poor while reducing reliance on fossil fuels. Therefore, to resolve the challenge of over-centralisation of energy structures, the present author submits that Nigeria should adopt a decentralised energy structure system that would include a practical and functional approach to energy resource management and responsibility. This approach would also result in mitigating the remoteness of the national government from local communities in Nigeria. It is the submission of the present author that the DDEOPs approach will ensure increased access to energy as part of the delivery of energy justice and will be a useful tool to enhance private infrastructure investments in the energy sector.

For Nigeria, adopting decentralised energy options and structures can significantly impact the energy sector because it changes the culture of decision-making from a centralised (command and control) paradigm to a decentralised process that will give private-sector investors the freedom to make decisions that will affect the power sector. As has been argued in this research, the energy justice concept requires ensuring access to energy for all and the concept of DDEOPs remains a potent tool to achieve such access. Thus, a vital first step towards achieving energy justice is the decentralisation of the energy sector. Additionally, the adoption of DDEOPs is likely to result in the production of more energy, thus translating into the realisation of universal energy access.

To effectively push for DDEOPs in Nigeria, a starting point would be for relevant actors to practically engage in the development of other energy resources through some processes such as the devolution of responsibility for energy planning and management from the national government and its agencies to other units and agencies at sub-national or local government levels. Potentially, this approach could help Nigeria move away from the reliance on fossil

fuels towards a more robust energy mix. More so, the approach will significantly raise the country's energy security which is an essential component of energy justice since it guarantees the availability of energy necessary to fulfil basic human needs.[33] The process of decreasing dependence on fossil fuels by increasing the share of renewable energy sources requires that electricity systems become better equipped to address the intermittency associated electricity generation. Decentralisation of the energy sector is key both to increasing the flexibility of the electricity system and gaining financing from individuals and not just States or businesses. It is generally thought that the transition to a renewable-based electricity system cannot take place to a sufficient extent without the decentralisation of energy structures and options.[34]

6.2.3 Strengthening Energy Institutions

True delivery of energy justice would not be achieved without strong energy institutions that are independent and have objectives that are based on pursuing just and reasonable outcomes from energy systems. As has been argued in this research (using the imperative of just energy institutions), the role of independent and just energy institutions cannot be over-emphasised as they are important factors for achieving energy justice. Importantly, central to the recognition of the justice dimension are State institutions with the capacity to institutionalise and deliver energy justice.[35] Overall, state institutions are also key actors of energy justice, and they are important because they implement government policies, assist citizens, and provide services.

As shown in Chapter two of this research, energy institutions in Nigeria have also contributed to the energy challenges in diverse ways. Among other things, this is due to a lack of

[33] Abdelrahman Azzuni and Christian Beyer, 'Definitions and Dimensions of Energy Security: A Literature Review' (2018) WIREs Energy Environ https://onlinelibrary.wiley.com/doi/pdf/10.1002/wene.268 accessed 28 September 2022.
[34] Soininen and Huhta (n 31) 77.
[35] Labelle (n 23) 616.

coordination or synergy and duplication of responsibilities. Additionally, the lack of independent and regulatory institutions in Nigeria's energy sector, together with large government control in terms of management has eroded any chance of delivering just and reasonable outcomes in energy decisions. In practice, this attitude of over-control and centralisation by the national government often leads to market abuses and energy injustice. For instance, energy policies in Nigeria tend to favour urban areas because of the national government's exclusively reserved power of policy formulation to itself without space for participation by the private sector. The concentration of power in general is focused on serving urban populations at the expense of rural populations who are sometimes not connected to the national grid. This has resulted in urban electrification and relegating rural electrification to secondary importance due to the notion that the rural population consumes less electricity when compared to the urban population. This policy, which is driven by energy institutions whose mandate comes from the government, has successfully made rural electrification even less profitable to investors.

Closely related to having independent and just energy institutions is the need for synergy between the relevant energy institutions. Synergy is an essential component in energy planning, and policy delivery as various government agencies have a role to play and need to be moving in the same direction.[36] Regrettably, the ECN that is responsible for ensuring adequate, reliable, cost-effective and sustainable energy supply for the nation has an unclear structure that is not situated to coordinate or effectively plan together with the Nigerian Electricity Regulatory Commission (NERC) for energy generation and distribution in Nigeria. Consequently, the poor coordination is a result of the lack of synergy between it and other relevant institutions like the Ministry of Petroleum in charge of crude oil and natural

[36] Omorogbe 'Legal Dimensions of Access to Modern Energy Services in Africa' (n 16) 335.

gas and the Ministry of Power which is in charge of electricity.[37] The current structure is a platform for injustice to thrive and has further contributed to the continuous sectoral problems in the nation's energy sector.[38] Without proper coordination of energy institutions, there is a possibility that energy policies set out would not yield the desired results. Thus, Nigeria could leverage the imperative of just energy institutions by developing a comprehensive and effective policy that when implemented would produce a structure that is founded on the delivery of energy justice to all people.

Another key advantage of having independent and just energy institutions as an energy justice approach is their ability to ensure the provision of relevant information on energy-related matters. We note that the failure to disclose relevant information about the operations of energy systems has an impact on the energy sector, especially as it prevents members of the public from making well-informed decisions on consumption. Thus, where there is a gap in this area, which is meant to be filled by energy institutions by being able to pass relevant information about energy systems to members of the public, it hinders effective energy decision-making and further prevents investors from making investments that would contribute to resolving access challenges.

Furthermore, it is instructive to note that one of the outcomes of having independent and just energy institutions is that they foster transparency and accountability in the energy sector. Transparency and accountability, which is a product of independent and just institutions, must be enshrined in all major activities of the energy sector. This should include reform processes and all post-reform undertakings in the sector to avoid any form of regression. Thus, with transparency and accountability mechanisms in place and championed by energy institutions, Nigeria could overcome injustices associated with corruption in the operation of

[37] ibid 341.
[38] ibid.

energy systems. As stated in Chapter 5, Nigeria has through international initiatives such as the Extractive Industries Transparency Initiative (EITI) worked towards ensuring that its energy system operations are transparent. This has been achieved through the domestication and ratification of EITI with the enactment of the Nigerian Extractive Industries Transparency Initiative Act 2007. This has been partly driven by institutions in the energy sector. In practice, transparency and accountability efforts championed by independent and just energy institutions could empower civil society groups and communities to push for changes in the energy sector. For example, it could be used as a platform to call for the utilisation of revenues generated from oil and gas exploration and production to fund mass renewable energy development to boost energy security in Nigeria.

As part of the effort to advance the energy justice framework in Nigeria, having strong independent energy institutions could assist to develop innovative, cost-effective and practical measures to accelerate access to electricity services in rural areas through renewable energy sources. This approach would involve direct engagement with the local people (where the resources are found) through their respective local government councils. Furthermore, it would promote the role of the private sector in the delivery of rural electrification using renewable sources through the support of entrepreneurship, training, marketing, feasibility studies, business planning, management, financing, and connection to other relevant institutions.

6.2.4 Consistent Policy and Regulatory Environment in the Energy Sector

The realisation of energy justice in Nigeria is also premised on having a consistent policy and regulatory environment in the energy sector. Having a consistent and regulatory policy environment could help increase investors' confidence in Nigeria's energy sector which will in turn result in key investments that would address some aspects of the country's energy challenges. Conversely, where there is an inconsistent policy and regulatory environment,

this will remain a challenge and may continue to exacerbate energy challenges. This is sometimes evidenced by the poor quality and ineffectiveness of regulatory institutions in the energy sector. For example, regulatory institutions in the Nigerian oil and gas sector are often faced with the challenge of regulatory capture by multinational corporations operating in the energy sector.[39] The reason for the capture which consequently translates into a poor policy and regulatory environment is due to energy competency which presents itself in the form of a lack of knowledge and competencies in energy policy-making. The issue of regulatory capture in the sector is made worse by the fact that there appears to be no clear-cut responsibility between the Nigerian Upstream Petroleum Regulatory Commission (NUPRC) and Nigerian Midstream and Downstream Petroleum (NMDPRA). This is due largely to structural misalignment, together with the lack of independence of these bodies. In practice, energy-related competencies especially in policy-making entail all the requisite skills and abilities required to successfully manage and govern the affairs in the energy industry.[40]

The same argument could also be made about the Nigerian power sector where the policy and regulatory approach do not necessarily meet international best practices of proper directing, administering, governing, restricting, overseeing, supervising, or ensuring the restriction of behaviour and prevention of the occurrence of undesirable activities in the sector. For instance, it is obvious that despite the huge financial resources that have been injected into Nigeria's electricity sector, the challenges of insufficient electricity persist. In reality, the sector has remained unworkable and is highly unattractive to investors due to an overwhelming and elaborate regulatory structure.[41] The challenge of failure to produce

[39] Eghosa Ekhator, 'Public Regulation of the Oil and Gas Industry in Nigeria: An Evaluation' (2016) 21 (1) Annual Survey of International and Comparative Law 43-91.
[40] Norbet Edomah, Chris Fould and Aled Jones, 'Policy Making and Energy Infrastructure Change: A Nigerian Case Study of Energy Governance in the Electricity Sector https://core.ac.uk/download/pdf/79655716.pdf accessed 24 September 2022
[41] Omorogbe, 'Legal Dimensions of Access to Modern Energy Services in Africa' (n 16) 334.

sufficient electricity in the country is in some ways attributed to a lack of consistent policy and regulatory environment in the sector.

One of the reasons for some of the challenges bedevilling the Nigerian energy sector is attributed to constant change in policies and laws that affect existing commitments upon which agreements have been made. This approach affects any trust placed in the government by the private sector, especially as they often see that the sector is characterised by government opportunism. According to energy scholars, for the private sector to obtain the comfort needed to invest in the energy sector, there must be concerted, clear, credible, and stable commitments to would-be investors of the government's willingness to honour agreements.[42] Additionally, to attract and retain private investments to boost universal energy access, Nigeria's policy and regulatory frameworks in the energy sector must restrain the opportunistic behaviour manifested by the government. This should be done in order to lessen any uncertainties that cause concerns to private sector participation and to provide policy and regulatory consistency. Thus, both the NERC and ECN as regulatory institutions in Nigeria must be professionalised and must be free from political interference that appears to be a hindrance to the introduction of new ideas that are capable of changing the status quo.

It is instructive to note that without a consistent policy and regulatory environment, it would be difficult to implement the energy justice imperatives. This is because, in order to achieve a successful implementation of the imperatives toward resolving energy challenges, there needs to be an energy environment that is free from policy and regulatory instability. In energy practice, it is clear that State institutions are responsible for the provision of a consistent regulatory environment to attract private sector players and foreign investors to participate.

[42] Hugh Corder and Tehemen Andzenge, 'Regulation as a Catalyst for the Electrification of Africa in Yinka Omorogbe and Ad Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 79.

This is because they implement government policies, assist citizens, and provide services.[43] This, therefore, implies that where there is a failure on their part, it translates into injustice to the people who the energy is supposed to serve. The present author submits that Nigeria can achieve energy justice through the provision of a consistent policy and regulatory environment in the energy sector. Energy scholars have argued that regulations and/or regulatory reforms must meet certain indices which include 'clear, credible and stable commitments' to prospective investors.[44] This could be in the form of enabling regulations as an essential requirement to contribute toward enhancing the provision of universal access to energy and services. This approach could also be used to ensure that all the imperatives are strategically placed for successful implementation to allow the country to achieve energy justice.

Furthermore, it is argued that an enabling environment for private sector participation seeks to provide minimal uncertainties and restrain the government from displaying opportunistic behaviour.[45] Denmark remains a good example of a country that has leveraged the tangible impact of proactive legislation to provide an enabling environment in the energy sector. The country demonstrated that with effective energy legislation, energy law can make a number of major contributions to the economy of a nation.[46] The Danish attitude to energy legislation and policy formation has resulted in a system where all politicians, independent of their political party, meet in a forum where energy policy for the nation is agreed upon for the medium to long term.[47] Consequently, this approach has led to many benefits with the most

[43] Labelle (n 23) 618.
[44] Corder and Andzenge, 'Regulation as a Catalyst for the Electrification of Africa' (n 42) 71.
[45] Yinka Omorogbe and Ada Okoye Ordor, 'Achieving Effective Law and Policy Frameworks for Access to Sustainable Energy in Africa: A Multidimensional Effort' in Yinka Omorogbe and Ada Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 71.
[46] Heffron and McCauley 'Achieving Sustainable Supply Chains through Energy Justice' (n 4) 437.
[47] Anita Rønne, The Danish Transition from 100% Oil Imports via 100% Indigenous Production Towards 100% Green Energy' 2013 Scottish Constitution Forums, January 2013.

significant one being to ensure private sector investment in the energy sector.[48] To achieve energy justice through a more consistent and regulatory environment, Nigeria could learn from the examples of Denmark by way of ensuring that the policy and regulatory environment in the energy sector is designed in a way that allows for private sector participation freely with limited government interference.

In sum, one important question is whether policy makers in Nigeria would be able to muster enough political will and courage to change the existing business-as-usual models with the policy and regulatory gap that has affected the management of the country's energy sector. The reality is that it is only the requisite political will and commitment on the part of the national government that can ensure that a consistent policy and regulatory environment exists to resolve some aspects of the country's energy challenges. Therefore, policy makers and regulators in the Nigerian energy sector have to work towards providing a clear and comprehensive policy to guide activities in the energy and environment sectors. This should be consistent with the directives that set up energy institutions in order to limit the cases of unintended consequences that could exacerbate energy challenges. It is important as regulations are meant to help create a stable and consistent energy environment that would ultimately facilitate investment and proper management of energy resources in the sector.

6.2.5 Energy Justice Litigation and Literacy

A key recommendation for achieving energy justice in Nigeria is to employ the tool of energy justice litigation and literacy programmes to resolve some aspects of the country's energy challenges. Just like the concept of environmental justice litigation which has proven to be a useful tool for people who face injustices relating to the environment, the introduction of energy justice litigation could potentially drive the delivery of energy justice. This is because the energy justice concept is increasingly being recognised as an essential tool to address

[48] ibid.

inequalities as well as injustices witnessed in the energy sector. This conception is in tandem with the idea of ensuring that the energy system fairly disseminates its benefits and burdens to all people.

The energy justice litigation element involves the potential of legal human rights claims to ensure greater accountability of governments and private actors for action and inaction relating to energy systems operation.[49] This approach is designed to make the energy justice concept and its framework have an impact on the lives of people whom energy is to serve. Further, it implies that the framework in particular, through the implementation of the imperatives would make people understand how they can engage with the concept in order to provide solutions to different aspects of energy problems. Although the energy justice litigation approach has not gained attention when compared to environmental justice, it could still be considered a viable option that could be used to force states to put justice principles at the core of their energy policies. This is because the principles derived from the energy justice framework generally lack any strong enforcement mechanisms. Nevertheless, energy justice litigation remains a potent tool that could be utilised by citizens and other stakeholders to get energy justice.

To address some aspects of Nigeria's energy challenges, energy justice litigation could be leveraged to correct injustices in the country's energy systems. This could be achieved through legal actions undertaken by people who are underseved by the national grid, in particular due to the failure of relevant authorities to meet the thresholds or criteria of the energy justice imperatives. In long-term, this instrument could influence decision-making in the energy sector by incorporating justice and ethical considerations in all energy decisions, thus promoting human and economic development. Energy scholars have argued that the

[49] Margaretha Wewerinke-Singh A Human Rights Approach to Energy: Realizing the Rights of Billions within Ecological Limits' (2021) Review of European, Comparative and International Environmental Law 16-26, 18.

litigation mechanism can be used to drive a rights-based energy transition.[50] The same approach – that is litigation could be used to achieve energy justice. In principle, this would offer a real opportunity to secure transparency and accountability in energy systems while also pushing for other strategic ways to increase universal energy access.

Energy justice litigation may have certain risks and challenges which include the challenge of access to courts as an aspect of procedural justice,[51] and places substantive duties on judges,[52] the challenge of identifying the scope of energy justice litigation,[53] and how creative should the courts be, taking into account the principles of the Rule of Law and Separation of Powers causes of action against governments and businesses to compensate victims of energy injustice,[54] and advancing the three core dimensions in energy decision-making.[55] Notwithstanding the challenges above, the utilisation of energy justice litigation could be a springboard to press in favour of an integrated approach to achieving energy justice in Nigeria. Additionally, the use of energy justice litigation is important in facilitating the role of law in ensuring that justice takes place in energy governance and management. This means that through litigation in court, people could directly make a case for increased energy access, sustainability, transparency and accountability, and substantive equality, as part of the implementation of the energy justice imperatives at the domestic level. This could be pursued through national legal courts as the main arena where energy justice can be enforced and/or implemented, and where societies can seek to have just energy outcomes.

[50] ibid.
[51] Gordon Walker and Rosie Day, 'Fuel Poverty as Injustice: Integrating Distribution, Recognition and Procedure in the Struggle for Affordable Warmth' (2012) 49 Energy Policy 69.
[52] Aileen McHarg, 'Energy Justice: Understanding the 'Ethical Turn' in Energy Law and Policy' in Iñigo del Guayo and others (eds), *Energy Justice and Energy Law* (Oxford University Press 2020) 29.
[53] ibid 29.
[54] ibid.
[55] ibid.

Energy literacy, on the other hand simply means understanding the nature and role of energy in the universe and our lives.[56] Energy literacy could be used as an instrument to apply the understanding of the energy justice framework to answer questions and resolve problems relating to energy systems. Using the energy justice framework, an energy literate person can trace energy flows and think in terms of energy systems, knowing how much energy he or she uses, for what, and where the energy comes from and more importantly can assess the credibility of energy information and then communicate about energy and energy use in meaningful ways. Additionally, with the energy justice framework integrated into energy literacy programmes in Nigeria, this approach could help the Nigerian people to make informed energy decisions that are based on an understanding of the impacts and consequences of energy systems.

A better understanding of the energy justice framework in Nigeria could be made using the instrument of energy literacy programmes. In reality, a great majority of Nigerians, especially in the rural and semi-urban areas are grossly unaware of the energy justice framework and how it could help transform lives. Thus, there is a need to engage in massive awareness creation in terms of how people relate to energy and its use through the framework. The present author would submit here that this approach could reduce the high level of apathy and encourage the participation of all Nigerians in energy governance and in the area of protecting the sector's facilities in any way possible. The idea is to get people to be aware that the energy justice concept and framework could potentially help transform the way they view energy issues and where possibly hold the national government to account. Additionally, this could potentially lead to more informed decisions that would be made by all stakeholders including policy makers and individual consumers. This could also be used to improve energy security in Nigeria through the development and utilisation of energy

[56] J.U Chikaire and others, 'Energy Extension and Energy Literacy for Sustainable Energy Development' (2015) 4 (8) Agricultural Advances 84-92.

resources in a just and reasonable manner, while promoting economic development. Additionally, where the energy literacy programmes are designed to incorporate the energy justice framework, together with the imperatives, this would lead to sustainable energy use, a reduction in environmental risks and negative impacts and also help individuals and organizations save money.

6.3 Summary of Key Actions – From Theory to Practice

Beyond the approaches above for achieving energy justice, it is important to understand that there are gaps to the implementation of the framework. This makes it imperative to proffer ways through which some of the gaps to the implementation of the framework could be overcome. Addressing the gaps would mean moving the recommendations put forward under section 6.2 above from theory to practice. To do this, this research briefly discussed four practical steps that could be used to move the recommendations from theory to practice.

Firstly, it has been established in this research that without a transparent and verifiable data base in Nigeria's energy sector, the national government, policymakers as well as regulators and other actors of energy justice will find it difficult to resolve the energy access and poverty challenges. As has been mentioned in Chapter 5, one major gap to the effectiveness of the framework is the lack of accessible, transparent, and verifiable data in Nigeria. This implies that without data, Nigeria may not be able to effectively resolve the energy access and poverty challenges. Data availability that is easily accessible and verifiable could significantly assist energy justice actors in the utilization of the framework to resolve energy access and poverty challenges.

Secondly , there is a need to scale up enforcement mechanisms if the country is to effectively implement the framework. The lack of enforcement of laws remains a major challenge affecting critical sectors of the Nigerian economy, including the energy sector. It is the

submission of this author that the implementation of the framework will be a mirage if steps are not taken to scale up enforcement of laws in Nigeria's energy sector. Therefore, energy regulators, institutions, and other national authorities need to ensure enforcement of laws for effective implementation of the framework.

Thirdly, the role of energy access financing is another measurable step needed for implementation of the framework. Undoubtedly, financing could help drive the implementation of different aspects of the energy justice framework. For example, it has been observed that major financing is needed to increase the current pace of investment in sustainable energy to meet the SE4ALL goals by 2030.[57] Particularly, for Nigeria, there is need to develop a clear legal and policy framework for energy access financing. As opined by scholars, financing energy access in Nigeria would be encouraged by the development of a legal framework.[58] Such a step could lead to an increase in energy supply and security, thus, resolving energy access and poverty challenges.

Lastly, the use of legislative instruments is another practical step that could be taken by the State to move the theoretical underpinnings of the framework to practice. Having clear and specific legislative instruments that could help to drive the objectives of the framework is a viable way to ensure implementation. For Nigeria, there is a gap in terms of having specific legislative instruments for the realization of energy justice. Fortunately, this narrative is beginning to change with the recent amendment of the Constitution of the Federal Republic of Nigeria 1999 (as amended) - the Electricity Constitutional Amendment. This amendment empowers States within the Federation to make laws with respect to the generation, transmission, and distribution of electricity in areas covered by the national grid system

[57] Anita Marangoly George. 'Financing Sustainable Energy for all' (2015) 52 (2) UN Chronicle 12-13.
[58] Peter Oniemola and Jane Ezirigwe, 'Financing Energy Access in Africa' in Yinka Omorogbe and Ada Ordor (eds), *Ending Africa's Energy Deficit and the Law: Achieving Sustainable Energy for All in Africa* (Oxford University Press 2018) 87.

within the relevant State. The implication of this is that it will enable electricity decentralisation in the country as a means to achieve energy justice.

6.4 Suggestions for Further Research

This research has shown that the pursuit of energy justice could be achieved through a variety of ways, whether international or domestic, and through institutions and societies' perspectives and this perception enables energy justice as a discipline to develop and expose injustice in energy systems. This research shows that energy justice is rooted in history and the dominant political-economic discourse at the global and local scales. Notwithstanding the early progress in developing the concept by energy scholars, there is still a need to do more, particularly in terms of looking at how the concept could play out at the domestic level. This is primarily based on understanding how the energy justice concept should be applied to address individual or country-specific justice concerns in energy systems.

As discussed throughout this research, the energy justice concept is relatively new for assessing justice implications or the injustices relating to energy decisions and how they affect energy systems as well as making recommendations.[59] We have seen from the literature that the concept of energy justice forces decision-makers to engage with injustices and look at ways to rectify them.[60] It is important too that energy justice scholars have argued that the energy justice concept is not law, rather it articulates justice principles that analyze existing energy laws, regulations, and policies.[61] This is the point where the present author has attempted to contribute to the discourse by way of proposing an application and/or implementation of the concept through some imperatives.

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[59] Darren McCauley and others, 'Energy Justice in the Artic: Implications for Energy Infrastructural Development in the Artic' (2016) 16 Energy Research and Social Science 141-146.

[60] Franziska Muller and others, 'Assessing African Energy Transitions: Renewable Energy Policies, Energy Justice, and SDG7 (2021) 9 (1) Politics and Governance 119-130.

[61] Tedd Moya and Mohammad Hazrati, 'Is Energy Justice in the Fossil Fuel Industry a Paradox?' in Geoffrey Wood and Keith Baker (eds), *The Palgrave Handbook of Managing Fossil Fuels and Energy Transitions* (Palgrave Macmillan 2020) 544.

A significant way to further the research on the energy justice framework is to consider its relation to other concepts such as climate justice in the context of Africa. This is important because current literature does not offer a complete analysis of the concept of energy justice and how it relates to other areas such as climate change which also contribute to energy challenges. This idea is relevant, particularly, in terms of the links with other known injustices in the global energy systems such as the justice of mitigating climate change from the energy sector. This makes it open to future opportunities for further research on the concept as scholars could attempt to discusss it within specific issues and challenges in energy systems.

As part of the move to further research on the concept, there are clearly opportunities for scholars in this field to identify potential future areas in the the energy justice discourse, particularly from the global south perspective. Perhaps the idea would be centred on ways to ensure that any application of the concept aligns with specific aspects of energy problems faced by individual countries. Lastly, the present author will suggest that further research on the concept and framework from an African perspective could be pursued through the enactment of 'model laws' that would specifically seek to resolve different aspects of injustice existing in energy systems and contributing to ways to resolve energy challenges. The model laws would be framed by individual countries after due and critical examination of their energy challenges, especially the ones underpinned by justice concerns.

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