

TOWARDS A SUSTAINABLE OFFSHORE RENEWABLE ENERGY GOVERNANCE IN
NIGERIA: EXPLORING HISTO-REGIONAL ANGLES AND EVOLVING LEGAL
COORDINATES IN INTERNATIONAL LAW

by

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DEDICATION

For Mother Earth

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ABSTRACT

This thesis critically examines the governance of Offshore Renewable Energy (ORE) in Nigeria. It emphasizes the importance of a historically informed and regionally integrated approach. The research delves into Nigeria's energy sector, tracing the evolution of legal and regulatory frameworks and evaluating the current legal structures governing ORE. The study also explores the regional dynamics that could influence Nigeria's ORE governance and integrates international legal instruments to highlight how these frameworks can guide the development of Nigeria's ORE sector. Through case studies from other jurisdictions, the research identifies best practices that can be adapted to the Nigerian context. The findings advocate for legal reforms, regional cooperation, and adherence to international standards to promote sustainable ORE development. The thesis contributes to the field by offering policy recommendations that build on current global best practices and sustainability goals. It concludes by underscoring the importance of a robust legal framework for ORE in Nigeria.

LIST OF ABBREVIATIONS USED

ABMT	Area-Based Management
ABNJ	Areas Beyond National Jurisdiction
AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
AFREC	African Energy Commission
AMCEN	African Ministerial Conference on the Environment
AREI	Africa Renewable Energy Initiative
AU	African Union
AUC	African Union Commission
BAU	Business as Usual
CBD	Convention on Biological Diversity
CFRN	Constitution of the Federal Republic of Nigeria
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLCS	Commission on the Limits of the Continental Shelf
CLL	Concurrent Legislative List
COP	Conference of Parties
EBM	Ecosystem-Based Management
ECA	Energy Commission Act
ECN	Energy Commission of Nigeria
ECOW-GEN	ECOWAS Program on Gender Mainstreaming in Energy Access

ECOWAS	Economic Community of West African States
ECREEE	ECOWAS Center for Renewable Energy and Energy Efficiency
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
ELL	Exclusive Legislative List
EREP	ECOWAS Renewable Energy Policy
ERERA	ECOWAS Regional Electricity Regulatory Authority
ETAMLME	Eastern Tropical Atlantic Marine Large Marine Ecosystem
ETS	Emission Trading Scheme
EU	European Union
FMP	Federal Ministry of Power
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gas
GW	Gigawatts
ICJ	International Court of Justice
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
IPPs	Independent Power Producers
IRENA	International Renewable Energy Agency
ITLOS	International Tribunal for the Law of the Sea
IUCN	International Union for the Conservation of Nature

LUA	Land Use Act
MDGs	Millennium Development Goals
MEAs	Multilateral Environmental Agreements
MPAs	Marine Protected Areas
MSP	Marine Spatial Planning
MW	Megawatts
NDCs	Nationally Determined Contributions
NEEDS	National Economic Empowerment and Development Strategy
NERC	Nigerian Electricity Regulatory Commission
NESCO	Nigeria Electric Company Supply Company
NGN	Nigerian Naira
NGOs	Non-Governmental Organizations
NMDPRA	Nigerian Midstream and Downstream Petroleum Regulatory Authority
NMMP	National Mass Metering Program
NNPC	Nigerian National Petroleum Corporation
NREA	National Renewable Energy Agency
NREPs	National Renewable Energy Policy
NUPRC	Nigerian Upstream Petroleum Regulatory Commission
ORE	Offshore Renewable Energy
OTEC	Ocean Thermal Energy Conversion
PNCIMA	Pacific North Coast Integrated Management Area
PPPs	Public-Private Partnerships

REA	Rural Electrification Agency
REC	Rural Electrification Agency
REMP	Renewable Energy Master Plan
SDGs	Sustainable Development Goals
SEAs	Strategic Environmental Assessments
SEFA	Sustainable Energy Fund for Africa
TCN	Transmission Company of Nigeria
TWh	Terawatt-hours
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nation Development Programme
UNEP	UN Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
US	United States
USA	United States of America
WAPP	West African Power Pool

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CHAPTER 1 – INTRODUCTION

1.1 Overview and Contextual Introduction

The quest for sustainable energy solutions is a critical global priority, driven by the pressing need to mitigate climate change and ensure energy security.¹ Offshore renewable energy (ORE) has emerged as a pivotal component in this endeavor, offering vast untapped potential to generate clean energy from marine resources such as wind, waves, and tides.² Nigeria, with its extensive coastline and favorable marine conditions, stands at a strategic juncture to harness these resources.³ More so, as Nigeria's energy sector is characterized by significant challenges, including inadequate electricity generation, over-reliance on fossil fuels, and environmental degradation.⁴ Addressing these issues through ORE development requires robust legal and regulatory frameworks, regional cooperation, and alignment with international policies. This thesis explores the governance frameworks necessary for developing sustainable offshore renewable energy in Nigeria, contextualizing it within the broader African regional dynamics and international legal frameworks.

Oil and gas exploration began way back with prospecting in 1936,⁵ however only the date of discovery in 1956 has been tagged a historical date.⁶ That notwithstanding and for governance purposes, the first legislation to cover the petroleum industry was the Petroleum Act 1969, which came after almost 33 years from prospecting.⁷ The regulator of upstream activities, Nigerian Upstream Petroleum Regulatory Commission (NUPRC)⁸ (formerly Department of Petroleum Resources) was established in 1971, 35 years after prospecting. The delay in this regulation or provision of a governance structure may have led to the environmental degradation of an area

¹ Bodansky Daniel, Jutta Brunnee & Lavanya Rajamani, *International Climate Change Law* (Oxford, United Kingdom: Oxford University Press, 2017) at 12 -15.

² C Ogbonnaya et al, “The Current and Emerging Energy Technologies for Power Generation in Nigeria: A Review” (2019) 13 *Thermal Science & Engineering Progress* at 1-14.

³ Miraj Ahmed Bhuiyan et al, “Economic Feasibility of Marine Renewable Energy: Review” (October 2022) 9:31 *Frontiers in Marine Science* Online: < <https://www.frontiersin.org/articles/10.3389/fmars.2022.988513/full>> accessed 12 April 2024.

⁴ Ogbonnaya et al, *supra* note 2.

⁵ Richard Boele, Heike Fabig & David Wheeler, “Shell, Nigeria and the Ogoni: A Study in Unsustainable Development” (2001) 9:2 *Sust Dev* at 74-86.

⁶ *Ibid.*

⁷ *Ibid.*

⁸ As part of its statutory functions, NUPRC provides regulatory guidelines for operations across the entire oil and gas value chain (Nigerian Upstream Petroleum Regulatory Commission; “Home”, Online: < <https://www.nuprc.gov.ng/>> accessed 25 July 2025).

which was historically a lush agriculture and farming community.⁹ By the time the governance regime was put in place, oil spills had already occurred from the exploration, whereas the reverse may have been the case where prospecting and governance of this development are more closely followed or preferably in tandem.

The research topic is current and has a nuanced approach to ensuring lessons from the ‘past’ (oil and gas exploration) are not forgotten in the rush for something seemingly ‘harmless’(ORE). This is because the impacts of the unsustainable development of oil and gas impacts are still suffered by local communities such as the Ogoni people of Rivers state and Olobiri of Bayelsa state in the Niger Delta region.¹⁰ With air, land and water remaining contaminated, as much as 40 million liters of oil spills are reported yearly.¹¹ Hence as the country seeks to join the rest of the world in phasing out fossil fuels and transition to renewable energy, it is important that it recognizes that renewable energies such as ORE have attendant effects on the environment and ecosystems that may lead to unsustainable development if not governed in a sustainable manner.¹²

The African Commission stated as such in a report finding Nigeria in violation of the right to a clean and safe environment under the African Charter.¹³ In the decision, the Commission stated that the right to a satisfactory environment ‘requires the state to take reasonable and other measures to prevent pollution and ecological degradation, to promote conservation, and to secure ecologically sustainable development and use of natural resources.’¹⁴ This responsibility should not be undertaken lightly as most of the environmental harm may be irreparable,¹⁵ despite the amount of damages or settlement figures that may be reached in holding the companies involved in these activities liable.¹⁶ It appears that proactive sustainable governance of ORE may be the solution in avoiding the repeat of the unsustainable exploration of oil, that began as far back as 1936 with the environmental catastrophe still felt today.

⁹ Business and Human Rights Resource Centre, “*Shell lawsuit (re oil pollution in Nigeria)*” Online: <<https://www.business-humanrights.org/en/latest-news/shell-lawsuit-re-oil-pollution-in-nigeria/>> accessed on 2 February 2024.

¹⁰ Boele, Fabig & Wheeler, *supra* note 5.

¹¹ Rebecca Ratcliffe, “This place used to be green: The Brutal Impact of Oil on the Niger Delta” (The Guardian, 06 December 2019) accessed on 1 February 2023.

¹² *Ibid.*

¹³ *Social and Economic Rights Action Center (SERAC) & Center for Economic and Social Rights (CESR) v. Federal Republic of Nigeria* (2001) ACHPR Online: <<https://achpr.au.int/index.php/pt/node/3274>> retrieved on 2 February 2023.

¹⁴ Kaniye Ebeku, “The Right to a Satisfactory Environment and the African Commission” (2003) 3:1 *Afr Hum Rts J* 149-166.

¹⁵ James Donnelly-Saalfeld, “Irreparable Harms: How the Devastating Effects of Oil Extraction in Nigeria Have Not Been Remedied by Nigerian Courts, the African Commission, or U.S. Courts” (2009) 15:2 *Hastings W-Nw J Envtl L & Pol’y* 371 Online: <https://repository.uclawsf.edu/hastings_environmental_law_journal/vol15/iss2/11>.

¹⁶ Business and Human Rights Resource Centre, “*Shell lawsuit (re oil pollution in Nigeria)*” Online: <<https://www.business-humanrights.org/en/latest-news/shell-lawsuit-re-oil-pollution-in-nigeria/>> accessed on 2 February 2023.

More so, given the complex historical antecedents of offshore oil and gas exploration in Nigeria, and the wake of ORE development to support the huge gap in electricity distribution in Nigeria, there is the need to develop a sustainable ORE governance to guide against ecological complications that may arise because of ORE development. This can be drawn from previous national experiences, bearing in mind regional relationships and emerging international principles. Thus, the thesis critically examines the existing legal instruments, policies, and governance mechanisms, identifying gaps and proposing pathways for a coherent and sustainable ORE governance regime in Nigeria.

The thesis examines whether ORE developments in Nigeria are regulated in a manner that ensures sustainability and, where not, provides for principles and regulatory tools that would ensure a sustainable governance regime for ORE developments. It has identified 8 research questions to guide the exploration of the main query, which includes:

1. What role has the historical governance of oil and gas exploration played in shaping the legal coordinates for offshore renewable energy governance in Nigeria, and how can the insights from these historical contexts inform future legal frameworks?
2. What are the prospects for offshore renewable energy projects in Nigeria?
3. What is the status of offshore renewable energy in Nigeria, and what are the existing legal and regulatory frameworks governing it?
4. How effective are the national approaches to offshore renewable energy governance in Nigeria, and what challenges hinder their implementation?
5. What roles do regional organizations, such as Economic Community of West African States (ECOWAS), play in promoting offshore renewable energy governance, and what collaborative efforts exist within the region?
6. What key international legal principles and approaches have emerged to guide the development of sustainable offshore renewable energy projects? To what extent are the key principles reflected in existing Nigerian legislative, regulatory and administrative practices? How can these sustainable principles be utilized in the face of competing interests?
7. To what extent do we need further international agreements or initiatives or arrangements that would guide countries like Nigeria?

8. What strategies and recommendations can enhance sustainable offshore renewable energy in Nigeria while balancing environmental conservation and socio-economic development?

1.2 Methodology and Theoretical Framework

By employing a doctrinal methodology, a legal historical approach and the “new governance theory,” this thesis combines legal analysis with policy evaluation. The study also proposes recommendations and strategies to enhance ORE in Nigeria, ensuring sustainability, environmental protection, and socio-economic development.

1.2.1 Doctrinal

The doctrinal method of legal research focuses on analyzing and interpreting legal texts, such as statutes, case law, treaties, regulations, and legal scholarship, to identify and evaluate legal principles, rules, and doctrines.¹⁷ This method involves examining existing legal frameworks, doctrines, and precedents to understand the current state of the law on a particular issue or topic. In the words of Oliver Wendell Holmes Jr in *The Common Law*, "The business of the jurist is to make known the content of the law; that is, to work upon it from within, or logically, arranging and distributing it, in order, from its summum genus to its infima species, so far as practicable."¹⁸ It is also referred to as “black letter” as it focuses on the law and authoritative texts containing the law itself such as legislations.¹⁹

Deploying doctrinal research method in this thesis goes beyond mere description of the law, to explanation and contextualization of the law. This is key to the interpretation and analysis of the law and legal systems across other jurisdictions. More so, it offers the foundation for other research methodologies and theories to flourish. Doctrinal research, as used in this thesis, involves a detailed analysis of legal texts, statutes, and case law.

This method helps elucidate the current legal landscape governing offshore renewable energy in Nigeria and identifies areas needing reform. By scrutinizing national legislation, international treaties, and judicial decisions, this thesis establishes a robust legal foundation for understanding ORE governance.

¹⁷ Paul Chynoweth, *Legal Research* in A Knight & L Ruddock eds, *Advanced Research Methods in the Built Environment* (Oxford, UK: Wiley-Blackwell, 2008) 28 at 29.

¹⁸ Oliver Wendell Holmes Jr, *Common Law Project* (Gutenberg, December 2000) at 219.

¹⁹ Chynoweth, *supra* note 17.

1.2.1.1 Relevance of Doctrinal Research Method to the Study

The doctrinal research method supports this research in its examination of relevant domestic laws, regulations, and policies in Nigeria related to offshore energy development, as well as international treaties, conventions, and customary international law principles relevant to offshore energy governance. With this springboard, analysis of these legal frameworks will be conducted to address issues such as environmental protection, energy security, economic development, and social equity in the context of offshore renewable energy projects.

Furthermore, this method allows an evaluation of the adequacy and effectiveness of existing legal frameworks in promoting sustainable governance of ORE in Nigeria. To effectively achieve this, a preliminary step is identifying and gathering relevant legal sources, domestic laws, regulations, policies and judicial decisions related to ORE. Some domestic laws relevant to this discourse that were identified and gathered include the Constitution of the Federal Republic of Nigeria 1999 as Amended, Nigerian Electricity Act 2023, Energy Commission Act 1989, Environmental Impact Assessment Act, 1992 and Climate Change Act, 2021.²⁰

Conducting a review of judicial decisions is another aspect of the use of the doctrinal research methodologies. Some cases were inspirations to this thesis, one of such is the case of *Bodo Community v. Shell Petroleum Development Company of Nigeria*.²¹ This case involved claims by the Bodo community in the Niger Delta region against Shell for environmental damage caused by oil spills from its operations, including offshore facilities.²² In January 2015, Shell agreed to an out-of-court settlement to compensate the Bodo community. The settlement amounted to £55 million (approximately \$83 million at the time), which was divided among the community members, with each of the approximately 15,600 claimants receiving a significant sum as compensation.²³ In addition to the financial settlement, Shell also agreed to commence the cleanup of the affected areas, in collaboration with the Bodo community and other stakeholders. The case highlighted the severe impact of oil pollution in the Niger Delta and set a precedent for holding multinational companies accountable for environmental damage in foreign jurisdictions.²⁴ The

²⁰ See Ch 2 of this thesis for an extensive discourse on these laws.

²¹ Business and Human Rights Resource Centre, "*Shell lawsuit (re oil spills & Bodo community in Nigeria)*" Online: < <https://www.business-humanrights.org/en/latest-news/shell-lawsuit-re-oil-spills-bodo-community-in-nigeria/>> accessed on 2 February 2023.

²² *Ibid.*

²³ *Ibid.*

²⁴ *Ibid.*

case is significant because it demonstrated that affected communities could seek justice and substantial compensation for environmental harm caused by multinational corporations, even outside their home country.²⁵ The case also brought international attention to the environmental degradation in the Niger Delta, where oil spills have been a recurring problem, and emphasized the importance of effective governance in resource exploitation.²⁶ However, the Court is back for trial as the Bodo Community claimed Shell's clean-up operation was not adequate.²⁷

Nigeria v. Cameroon (Cameroon v. Nigeria: Equatorial Guinea intervening) is a case before the International Court of Justice (ICJ) relating to maritime boundary disputes which will be discussed extensively.²⁸ This case concerned the maritime boundary dispute between Nigeria and Cameroon in the Gulf of Guinea, including areas potentially rich in offshore hydrocarbon resources. The ICJ's judgment could provide insights into the delimitation of maritime boundaries and jurisdictional issues relevant to offshore energy governance.²⁹

Additionally, whilst organizing findings and analyzing legal frameworks, doctrinal research method would support the exploration of international principles (precautionary principle, ecosystem management, adaptive management, public participation) in proffering solutions and making recommendations for identified gaps, shortcomings or inconsistencies in the existing legal frameworks. International treaties such as the United Nations Convention on the Law of the Sea (UNCLOS), the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction Agreement (BBNJ Agreement) and the Convention on Biological Diversity amongst others, will be examined to derive the workings, intricacies of their principles and their relevance to ORE.³⁰

1.2.2 Legal History

Legal history is a research method that involves the study and analysis of historical sources to understand the development, evolution, and impact of legal systems, doctrines and principles

²⁵ *Ibid.*

²⁶ *Ibid.*

²⁷ Business and Human Rights Resource Centre, "UK: Nigerian Bodo Community's Legal Claim over Shell's SPDC Oil Spill Clean-Up can be Heard at Trial, High Court Rules" Online: < <https://www.business-humanrights.org/en/latest-news/uk-nigerian-communities-legal-claim-over-oil-spill-clean-up-can-be-heard-at-trial-high-court-rules/> > accessed on 21 August 2024.

²⁸ International Court of Justice (ICJ), "*Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea intervening)*" Online: < <https://www.icj-cij.org/case/94> > accessed 1 June 2024.

²⁹ *Ibid.*

³⁰ See Ch 4 of this thesis for a detailed discussion.

over time.³¹ The object of legal historical investigation is the impact of the space-time compression on law and the role of law in this process.³² This method is relevant because a sense of history is important to the understanding of law, as legal developments cannot be separated from other historical trends.³³ The purpose of the legal history method goes beyond mere exposition or explanation of past developments, it further teaches us about the contingency of law and how law is shaped by other historical forces.³⁴ It also exposes the various forms of legal pluralism in both past and present,³⁵ especially prevalent in former colonies like Nigeria, where the law of a former colonial authority may exist alongside traditional legal systems. It typically entails the examination of primary sources such as statutes, court decisions, treaties, legal opinions, alongside secondary sources such as scholarly articles, books, and archival materials from various historical periods.

In the context of this thesis, the relevance of legal history method can be summed up in the insights from the examination of the historical development and evolution of legal frameworks on energy and environment. These insights are not restricted to the evolution of these laws, but also on their influence on governance structures for ORE. These insights would be gained by exploring the historical contexts and perspectives that have influenced practices, policies and attitudes related to energy and natural resources development in Nigeria.

The historical period summarized in this thesis includes the pre-colonial, colonial and post-colonial period. The pre-colonial period offers a summary exploration into the governance of energy and natural resources before colonial influences. The colonial period is important as the period witnessed the exploration of crude oil and looks at the governance structures for crude oil exploration during this period. The post-colonial period examines current governance structures for energy and environment. It is hoped that a deeper understanding will be achieved on the historical dynamics which may influence the analysis of the contemporary issues, potential barriers and opportunities for sustainable governance of ORE in Nigeria.

The historical context is essential for understanding the evolution of energy policies and laws in Nigeria. This is because a legal history approach traces the development of the energy

³¹ *Ibid.*

³² Duve Thomas, "Global Legal History: A Methodological Approach", (Oxford, 2 May 2016) Online: <<https://doi.org/10.1093/oxfordhb/9780199935352.013.25>> accessed 14 February 2024.

³³ Jim Phillips, 'Why Legal History Matters', (2013) 41:2 *Osgoode Hall LJ* at 123.

³⁴ *Ibid.*

³⁵ *Ibid.*

sector, from the pre-colonial era through colonial and post-colonial periods. To achieve this, it is useful to identify legal precedents and tradition from legal, policy and regulatory framework on environmental protection and energy. This perspective highlights the socio-political factors influencing energy governance and provides insights into the historical challenges and opportunities that have shaped Nigeria's current energy landscape.

1.2.3 “New Governance Theory”

The question of how best to govern oceans has been the subject of intense debate for such a long time that the international community has edged forward in developing ocean governance principles.³⁶ Since 1982, legal principles, sometimes linked to provisions in treaties, have become critical in the global quest for sustainable seas and healthy coastal communities.³⁷ Principles, such as precautionary and ecosystem approaches, have influenced the negotiation, implementation, and interpretation of international agreements.³⁸ They may also guide national ocean law and policy reforms in countries such as Nigeria, for example, encouraging adoption of integrated coastal and ocean management approaches and enhancement of public participation in ocean-related decision-making.³⁹ Some of these principles such as the ecosystem-based management,⁴⁰ may be effectively advanced under the theoretical lens of new governance.

The “new governance theory” is the overarching theory of my thesis and lies at the center of my thesis on ORE governance in Nigeria. Cryer et al, whilst accepting that there is no settled definition for the theory, describe the new governance theory, as a ‘construct which has been developed to explain a range of processes and practices that have a normative dimension, but do not primarily or at all operate through the formal mechanism of traditional command-and-control-type legal institutions.’⁴¹ Governance which is the overarching umbrella from which the new governance theory is derived from, also faces the challenge of multiple definitions and interpretations. It is sometimes referred to as the process of self-organizing interorganizational networks characterized by interdependence, resource exchange and governing.⁴² It could also

³⁶ David L Vanderzwaag, “Edging Towards Principled Ocean Governance: Law of the Sea and Beyond” in Paul R Boudreau et al, “*The Future of Ocean Governance and Capacity Development*” (Brill Nijhoff, 2019) at 117-127.

³⁷ *Ibid* at 117.

³⁸ *Ibid* at 117-118.

³⁹ *Ibid* at 117.

⁴⁰ *Ibid* at 117.

⁴¹ Robert Cryer et al, *Research Methodologies in EU and International Law* (Oxford: Hart Publishing, 2011) at 55.

⁴² RAN Rhodes, *Understanding Governance: Policy Networks, Governance, Reflexivity and Accountability* (Buckingham: Open University Press, 2001) at 15.

mean the exercise of political power to manage a nations' affairs, it is distinct from good governance which is part of the uses of governance and refers to an efficient public service, an independent judicial system and legal framework to enforce respect for the law and human rights at all levels of government and a free press.⁴³

The new governance theory offers an innovative perspective on governance that focuses on collaborative, participatory and multi-level approaches to decision making.⁴⁴ It also offers a framework for analyzing the dynamic and multi-faceted nature of regulatory processes in modern societies.⁴⁵ It emphasizes the role of diverse stakeholders, including governments, private sector, and civil society, in co-creating and implementing regulatory frameworks.⁴⁶ This theory is particularly relevant for offshore renewable energy, where effective governance requires collaboration across different levels of government, international cooperation, and stakeholder engagement.

The theory is comprised of several modes such as multi-level governance, co-governance and experimental governance.⁴⁷ The strand of the new governance theory the thesis seeks to advance is the multilevel governance.⁴⁸ This is because this mode recognizes the complex, layered interactions across different levels of government—local, regional, national, and international—as well as the involvement of non-governmental actors such as NGOs, private sectors, and civil society.⁴⁹ This approach is especially relevant in sectors like renewable energy, where effective policy implementation requires coordination across various scales and stakeholders. Thereby addressing the foregoing challenges requires a concerted effort from policymakers, practitioners, researchers, and civil society actors. These efforts can be channeled to build awareness, foster collaboration, and develop adaptive governance capacities, tailored to the specific contexts and needs of ORE development in Nigeria.

By employing the “new governance theory,” the thesis assesses the existing governance structures for ORE in Nigeria focusing on collaboration, participation, adaptability and

⁴³ *Ibid* at 47-49.

⁴⁴ Daniel J Fiorino, *The New Environmental Regulation* (Massachusetts: MIT Press, 2006) at 189 – 224 Online:<https://www.researchgate.net/publication/236219080_The_New_Environmental_Regulation> accessed on 23 June 2024.

⁴⁵ *Ibid*.

⁴⁶ *Ibid*.

⁴⁷ Liesbet Hooghe and Gary Marks, “Unraveling the Central State, but How? Types of Multi-level Governance” (May 2003) 97:2 *Am Pol Sci Rev* at 233-240.

⁴⁸ *Ibid*.

⁴⁹ *Ibid*.

performance of these structures. These would offer insights into how governance processes can be reformed or strengthened to ensure more inclusive, responsive, ecological and effective management of ORE resources in Nigeria. The evaluation of the governance structures through the theoretical lens of the “new governance theory” also allows for the assessment of the integration of emerging international law principles and regulatory tools like marine spatial planning into the ORE governance mix in Nigeria.

This is because existing governance frameworks may have not accommodated these emerging sustainable principles and may require legislative reforms, policy revisions and institutional restructuring tailored to the specific context of ORE in Nigeria. By applying new governance theory, this thesis proposes innovative regulatory approaches that foster flexibility, inclusiveness, and adaptability in the face of evolving technological and environmental challenges.

Implementing “new governance theory” may require effective adaptive governance which further requires sufficient human, financial, and technological resources to support learning, monitoring, and adaptation processes. Many developing countries, including Nigeria, may face constraints in terms of capacity and resources, which can limit their ability to implement adaptive governance initiatives effectively.⁵⁰ Especially where achieving consensus and coordination among these stakeholders can be challenging, particularly in contexts characterized by power asymmetries, conflicting agendas, and limited trust among actors.

Scholarly contributions to multi-level governance theory significantly influence the recommendations provided for policymakers regarding ORE governance in Nigeria. Their research offers valuable insights into how complex governance interactions can be effectively managed across different governmental and geographical levels. Liesbet Hooghe and Gary Marks distinguish between Type I and Type II multi-level governance and underscore the need for flexible governance structures in ORE.⁵¹ Type I multi-level governance refers to the intellectual foundation for governance as federalism and is concerned with power sharing among a limited number of governments operating at just a few levels.⁵² Type II multi-level governance is an alternative form of multi-level governance, in which the number of jurisdictions is potentially vast

⁵⁰ Kathrina Umpfenach, Andreas Graf & Camilla Bausch, "Regional Cooperation in the Context of the New 2030 Energy Governance: Report " (Berlin: Ecologic Institute, 2015).

⁵¹ *Ibid.*

⁵² *Ibid.*

rather than limited but operate at numerous territorial scales and intended to be flexible rather than durable.⁵³ Multi-level governance here underscores the need for flexible governance structures in ORE and supports recommendations for establishing inter-governmental panels, and working groups that can adapt to the specific needs of ORE projects.⁵⁴

Ian Bache and Matthew Flinders concentrate more on the influence of stakeholder engagement and the expansion of multi-level governance beyond the EU to other regional and global contexts, which highlights the importance of including a wide range of stakeholders in the governance process.⁵⁵ This perspective reinforces the recommendation to ensure transparent and inclusive stakeholder engagement processes in ORE projects, ensuring that all voices are heard and integrated into decision-making.⁵⁶

Arthur Benz's influence extends to policy integration and conflict resolution with respect to coordination mechanisms within multi-level governance systems.⁵⁷ This informs the recommendation to promote policy integration and effective conflict resolution strategies in ORE governance. Understanding how to manage cooperation and competition among various governance levels is crucial for the smooth implementation of ORE policies.⁵⁸

Dorte Ohlhorst and Elke Bruns' focus on renewable energy policies in Germany, particularly how these policies are implemented at different governmental levels and how they support the recommendation to integrate environmental and social considerations in ORE governance.⁵⁹ Their findings suggest the need for comprehensive Environmental Impact Assessments and community-based approaches to ORE development.⁶⁰

Elin Lerum Boasson's studies on the effectiveness of national policy instruments for renewable energy in Europe emphasize the importance of supporting innovation and facilitating

⁵³ *Ibid.*

⁵⁴ *Ibid.*

⁵⁵ Ian Bache & Matthew Flinders, "Themes and Issues in Multi-Level Governance" (Oxford: Oxford Academic, 2004) Online: <<https://doi.org/10.1093/0199259259.003.0001>> at 1-10 accessed on 25 June 2024.

⁵⁶ *Ibid.*

⁵⁷ Arthur Benz, "Two Types of Multi-Level Governance: Intergovernmental Relations in German and EU Regional Policy" (2000) 10:3 *Regional and Federal Studies* at 21- 44 Online: < <https://www.tandfonline.com/doi/pdf/10.1080/13597560008421130>> accessed on 17 July 2024.

⁵⁸ *Ibid.*

⁵⁹ Elke Bruns & Dorte Ohlhorst, "Wind Power Generation in Germany – A Transdisciplinary View on the Innovation Biography" (2011) 10:1 *J of Transboundary Envtl Stud* at 45-62 Online:< <https://journal-tes.ruc.dk/wp-content/uploads/2021/05/no-5-Elke-Bruns-high.pdf>> accessed 25 June 2024.

⁶⁰ *Ibid.*

technology transfer.⁶¹ This supports the recommendation for policy makers to invest in research and development and to foster international cooperation to enhance technological capabilities in ORE.⁶²

These scholars' work collectively informs a holistic approach to ORE governance, emphasizing the need for adaptive, inclusive, and integrated strategies that can address the multi-dimensional challenges associated with renewable energy development. The recommendations from this thesis for policymakers draw directly from these insights, proposing mechanisms that leverage multi-level governance to ensure effective, sustainable, and equitable ORE development.

Thus, in renewable energy, multi-level governance addresses the complex dynamics of energy policy, which involves regulatory compliance, environmental concerns, and the economic interests of diverse stakeholders. Local governments can tailor renewable energy projects to meet specific community needs and preferences, enhancing the social acceptability and effectiveness of such initiatives. Regional bodies can facilitate the scaling up of successful local projects and coordinate transboundary issues such as energy trading and grid connectivity. National governments can provide overarching legal and regulatory frameworks and incentives to support renewable energy adoption, ensuring alignment with broader environmental and energy security goals. International entities can foster global cooperation on technology transfer, funding, and policy harmonization, helping to address global challenges such as climate change.

Multi-level governance is also particularly effective in managing renewable energy initiatives due to the sector's need for integrated approaches that encompass technical, social, and environmental dimensions. It allows for flexibility in policy implementation, adaptive management based on local conditions, and enhanced cooperation across different governance levels, which are all crucial for advancing global renewable energy goals.

1.3 Literature Review

A review of the existing body of literature shows that there have been previous efforts at reviewing the renewable energy law and its prospects in Nigeria. Some earlier researchers have argued that while the Nigerian government continues to battle the energy predicaments from

⁶¹ Iva Mihaylova, "Book Reviews: Elin Lerum Boasson, National Climate Policy: A Multi-Field Approach" (May 2016) 14:2 *Pol Stud Rev* at 1 Online: < <https://journals.sagepub.com/doi/epub/10.1177/1478929916630921b> > accessed on 18 July 2024.

⁶² *Ibid.*

petroleum derivatives and electricity, it would do well to explore alternative sources like solar, wind, biomass, biofuel, and coal. Orazulike opined that most developed economies are built with the realization that a sustained availability of affordable energy, in its various forms, is fundamental to education, housing, clean water, electricity, and good sanitation.⁶³ Ajayi and Ajanaku have opined that the government needs to develop capacities and develop the infrastructure for harvesting wind power generation and trapping solar energy which will be suitable, sustainable, and economically viable through a national energy plan.⁶⁴

Other several works provide a historical and legal context for Nigeria's energy sector. Omorogbe's seminal book, "Oil and Gas Law in Nigeria," offers an extensive overview of the legal frameworks governing Nigeria's energy resources, including the challenges posed by transitioning to renewable energy.⁶⁵ Similarly, Oyedepo explores the evolution of energy policies in Nigeria, emphasizing the need for legal reforms to support sustainable energy development.⁶⁶

Additionally, research on current regulatory frameworks highlights the complexities and inefficiencies in Nigeria's energy governance. For instance, Oyedepo discusses the limitations of existing policies in promoting renewable energy and calls for more comprehensive and coherent regulatory strategies.⁶⁷ Adelaja analyzes the barriers to renewable energy adoption in Nigeria, including regulatory, financial, and technical challenges.⁶⁸

Several studies also assess the potential of offshore renewable energy in Nigeria, providing a detailed analysis of the country's wind energy resources, identifying key locations for offshore wind farms.⁶⁹ They explore the feasibility of tidal and wave energy in Nigeria, highlighting the significant untapped potential of these resources.⁷⁰ Thus, the importance of sustainable governance to develop renewable energy in Nigeria cannot be overstressed.

Critical analyses of Nigeria's energy governance highlight the need for more integrated and adaptive regulatory frameworks. According to Oyedepo, the current energy policy is deplorable as

⁶³ C Orazulike, "Energy Crisis: The Bane of Nigeria's Development" Online:< <http://www.nigerianoilgas/energy-crisis-the-bane-of-nigerias-development/>> accessed 15 October 2023.

⁶⁴ O Ajayi & K Ajanaku, "Nigeria's Energy Challenge and Power Development: The Way Forward" (2009) 20:3 *Energy & Dev* at 411-413.

⁶⁵ Yinka Omorogbe, "*Oil and Gas Law in Nigeria*", (Nigeria: Malthouse Law Books, 2001) at 50-75.

⁶⁶ S Oyedepo, "Energy and Sustainable Development in Nigeria: The Way Forward" (2012) 2:15 *Energy, Sust & Soc* at 1-17.

⁶⁷ *Ibid.*

⁶⁸ Adesoji O Adelaja, "Barriers to National Renewable Energy Policy Adoption: Insights from a Case Study of Nigeria" (July 2020) Online:< <https://www.sciencedirect.com/science/article/pii/S2211467X20300729>> accessed on 20 July 2024.

⁶⁹ See Ch 2 of this thesis.

⁷⁰ *Ibid.*

cases of rural and sub-rural energy demand and supply do not reach the center stage of the country's energy development policy.⁷¹ Also, the policy regime on renewable energy seems to be lacking clarity in policy objectives and strategies as well as the implementation of these policies.⁷² Edomah has explained that there is a rising need in Nigeria for an energy transition plan toward more sustainable energy source.⁷³ For example, Akuruargue mentioned that Nigeria's current energy policies are fragmented and lack the necessary coherence to effectively support renewable energy development.⁷⁴ These scholars recommend adopting a more holistic and flexible governance approach, in line with "New Governance Theory."⁷⁵ Hence, policymakers must investigate the influences required to change energy systems and lessons that can be drawn to establish effective governance of energy transition.

Thus, this thesis examines existing scholarship on offshore renewable energy, focusing on governance frameworks, regulatory challenges, and best practices from other jurisdictions. Key themes include the integration of environmental sustainability, socio-economic impacts, and technological advancements in ORE development. The review draws on a diverse range of sources, including academic articles, policy reports, and case studies from several jurisdictions such as Netherlands, Canada, New Jersey, United Kingdom and Scotland amongst others. This analysis provides valuable lessons for Nigeria and highlights the importance of adopting a holistic and context-specific approach to ORE governance.

The thesis also examines regional and international perspectives on offshore renewable energy governance. The works of the African Union and ECOWAS offer valuable insights into regional policies and initiatives aimed at promoting renewable energy in West Africa.⁷⁶ Additionally, the International Renewable Energy Agency (IRENA) provides a global perspective, with reports highlighting best practices and successful case studies from around the world.⁷⁷

In conclusion, the thesis underscores the complexities and challenges of offshore renewable energy governance in Nigeria. It highlights the need for comprehensive legal reforms,

⁷¹ Oyedepo, *supra* note 66.

⁷² *Ibid.*

⁷³ Norbert Edomah, "The Governance of Energy Transition: Lessons from the Nigerian Electricity Sector" (2021) 11:1 *Energy Sust & Soc 1-12* Online: <<https://doi.org/10.1186/s13705-021-00317-1>> accessed 15 October 2022.

⁷⁴ Udochukwu B Akuru et al, "Towards 100% Renewable Energy in Nigeria" (2017) 71 *Renewable & Sust Energy Rev* at 943-953 Online: <<https://www.sciencedirect.com/science/article/pii/S1364032116311716>> accessed 25 October 2023.

⁷⁵ *Ibid.*

⁷⁶ See Ch 3 of this thesis.

⁷⁷ See Ch 4 of this thesis.

adaptive regulatory frameworks, and greater stakeholder participation to unlock the country's renewable energy potential. This review provides a foundation for the subsequent chapters, which will delve deeper into specific aspects of Nigeria's offshore renewable energy governance and propose actionable recommendations.

1.4 Organizational Layout

This work is made up of six (6) chapters. Chapter one is the introductory part of the research which deals with preliminary issues such as the overview, methodology and theoretical underpinnings, literature review as well as the organization layout. Chapter two provides an overview of the historical development of Nigeria's energy sector, whilst appraising the legal regime of offshore renewable energy in Nigeria, its legislations and regulatory bodies. Chapter three explores the regional perspectives on offshore renewable energy – The African dynamics.

Chapter four deals with international regulation of ORE as well as principles that may govern the sustainable development of ORE. Chapter five aims to provide a layout of the future courses for Nigeria, examining national directions, regional cooperations whilst making a case for a global ORE regime. Chapter six, the concluding chapter summarizes the whole work, provides findings, contributions and other recommendations such as the prospects and further research that may be conducted for sustainable governance of ORE in Nigeria.

CHAPTER TWO: REDRESSING THE PAST FOR CHARTING FUTURE COURSES – OVERVIEW OF ORE GOVERNANCE IN NIGERIA

2.1 Introduction

This chapter provides an overview of the historic and present governance of Nigeria's energy sector. As background, it describes Nigeria's energy profile, which is characterized by abundant natural resources, including oil, natural gas, and significant potential for renewable energy. After presenting the historical development, status, and the potential for ORE in Nigeria, the chapter analyzes existing laws and policies, assesses their effectiveness and implementation challenges, and examines the environmental and socio-economic impacts of energy development.

The chapter begins with an overview of the energy landscape in Nigeria which has evolved significantly from the pre-colonial era through the colonial period and into the post-colonial era. It then examines the potential of ORE in Nigeria, given its coastal and offshore areas which hold significant potential for renewable energy, particularly wind and solar energy. Offshore wind farms offer a viable solution to meet the growing energy demand and reduce reliance on fossil fuels. The government's commitment to increasing renewable energy capacity highlights the importance of exploring these offshore potentials.

Considering this context, the chapter analyses the legal and regulatory framework governing Nigeria's energy sector, including various policies and regulations aimed at promoting sustainable energy development. Key legal frameworks to inform this assessment include the Constitution of the Federal Republic of Nigeria (CFRN) 1999 amended, Land Use Act 1978, Energy Commission Act, 1989, Environmental Impact Assessment Act 1992, Electricity Act 2023 and Renewable Energy Master Plan 2023. The aim of the analysis is to determine if Nigeria's existing energy laws and policies focus on fostering a conducive environment for sustainable ORE development. This section further examines the current regulatory framework such as the Energy Commission, NERC and the Ministry of Power.

This chapter also explores the current seascape of ORE in Nigeria. The need for ORE governance is discussed through the lens of the growing need for use of ORE and the potential

negative impacts of ORE development. This is followed by an analysis of the current governance structures, and assessment of the effectiveness of these structures.

Currently, the energy sector faces numerous challenges, including inadequate infrastructure, regulatory hurdles, and environmental impacts. This thesis explores options to address the challenges and leverage the opportunities in governance for the ORE sector, so Nigeria can achieve sustainable energy security and drive economic growth.

2.2 Overview of Nigeria's Energy Sector

Nigeria boasts of being the largest economy and the most populous country in Africa⁷⁸, this high population however requires a higher energy generation to meet the attendant demand. Its reliance on dwindling fossil fuel reserves may continue to impede its socio-economic development with a projected population of 300 million by 2050.⁷⁹ Currently, the electricity demand in Nigeria is over 32 terawatt-hours (TWh)⁸⁰ with the current generation capacity averaging 7,566.2 Megawatts (MW).⁸¹ This is despite its installed generation capacity of about 22,000 MW, which falls short due to operational challenges, maintenance issues, fuel supply disruptions and infrastructural inadequacies.⁸² There is thus a substantial gap between the nation's current electricity demand and generation capacity highlighting a fundamental challenge in the energy sector, as well as the inefficiency of the current governance structures.

Moreover, there are projections that the demand for electricity will grow significantly given the nation's estimated rapid population growth and accompanying economic development needs.⁸³ For instance, one projection estimates that Nigeria could require between 45 and 116 gigawatts (GW) by 2030 and more by 2050. This estimate as well as the energy deficit underscores the need for substantial expansion in generation capacity to meet these future demands. It is further estimated that by 2050, the shift towards renewable energy is anticipated to play a crucial role in closing the demand and generation gap, which also forms part of Nigeria's broader strategy to achieve sustainable energy and align with global climate goals.⁸⁴ Thus Nigeria's renewable energy

⁷⁸ Ogbonnaya et al, *supra* note 2.

⁷⁹ *Ibid* at 1.

⁸⁰ National Bureau of Statistics, "Electricity Report Q4 2023" Online: <<https://nigerianstat.gov.ng/elibrary/read/1241482>> accessed 12 March 2024.

⁸¹ Ogbonnaya et al, *supra* note 2.

⁸² Soni Daniel, "Nigeria's Raises Electricity Generating Capacity to 22,000 Megawatts" (Vanguard, 13 December 2022) Online: <<https://www.vanguardngr.com/2022/12/nigerias-raises-electricity-generating-capacity-to-22000-megawatt/>> accessed 12 March 2024.

⁸³ National Bureau of Statistics, "Electricity Report Q4 2023" Online: <<https://nigerianstat.gov.ng/elibrary/read/1241482>> accessed 12 March 2024.

⁸⁴ *Ibid*

potential, particularly in the most often overlooked offshore sources like wind, wave and tidal, could play a significant role in addressing its electricity deficit.⁸⁵

Although specific figures for Nigeria are not comprehensively outlined, general assessments and global potential indicate substantial potential for offshore wind energy in the country.⁸⁶ Offshore wind farms are known for their high capacity and efficiency, more so globally, new offshore wind projects frequently range from several hundred megawatts to multiple gigawatts.⁸⁷ For example, individual wind farms can contribute anywhere from 0.5 GW to over 1.5 GW per installation, depending on the number and capacity of turbines.⁸⁸

Considering Nigeria's lengthy coastline and wind speeds, a conservative estimate might see the installation of multiple offshore wind farms contributing a total of around 5 to 10 GW, assuming suitable sites are developed.⁸⁹ Similarly, tidal energy potential can be substantial, especially in areas with significant tidal ranges and speeds.⁹⁰ Global tidal installations are less in capacity compared to wind, often ranging in the tens to hundreds of megawatts.⁹¹ For Nigeria, assuming the identification of suitable sites with strong tidal currents, the cumulative contribution might realistically reach up to 1 GW if extensively developed.⁹²

At present, solar photovoltaics and wind energy are generating the greatest interest in Nigeria for the large-scale electricity generation, compared with other renewable energy sources, due to the country's abundant potentials.⁹³ When it comes to the electricity generation mix in Nigeria, gas accounts for the largest share, closely followed by hydropower, and a minor share from other sources.⁹⁴ Offshore wind provides an economically attractive option for the generation of electricity from renewable energy source while solar also has a massive potential. For offshore wind, a grid connection does not rely on the land territory of a particular country on which the

⁸⁵ African Development Bank Group, "Assessing the Potential of Offshore Renewable Energy in Africa" (3 December 2021) Online: < <https://www.afdb.org/en/documents/assessing-potential-offshore-renewable-energy-africa> > accessed 12 April 2024.

⁸⁶ Miraj Ahmed Bhuiyan et al, "Economic Feasibility of Marine Renewable Energy: Review" (31 October 2022) 9 *Frontiers in Marine Science* Online: < <https://www.frontiersin.org/articles/10.3389/fmars.2022.988513/full> > accessed 12 April 2024.

⁸⁷ Global Wind Energy Council, 'Global Wind Report 2021' Online: < <https://gwec.net/global-wind-report-2021/> > accessed 12 April 2024 at 37-40.

⁸⁸ *Ibid* at 37- 40.

⁸⁹ *Ibid*.

⁹⁰ International Renewable Energy Agency (IRENA), "Tidal Energy Technology Brief" at 24 Online: < <https://www.irena.org/Publications/2014> > accessed 12 April 2024.

⁹¹ *Ibid* at 24.

⁹² *Ibid*.

⁹³ *Ibid*.

⁹⁴ Q Ajao & L Sadeeq, "An Approximate Feasibility Assessment of Electric Vehicles Adoption in Nigeria: Forecast 2030" (2023) Online: <<https://arxiv.org/pdf/2305.17844>> accessed 1 May 2024.

wind farm is located, the superficial water depth poses no restriction to installing an OWF if it remains grid connected.⁹⁵

Taking stock of the present state of Nigeria's offshore oil and gas exploration and opportunities that lie in offshore renewable energies, there is need to provide sufficient governance direction that will enable Nigeria's offshore renewable energy sector to evolve from the present situation in the nearest future. Similarly, and interestingly, there is no institution or statute to mainstream the tapping of Nigeria's offshore renewable energy resources into the nation's present energy mix. However, challenges exist in terms of how to overcome the energy crisis in Nigeria with these offshore renewables given environmental and climate change considerations alongside proper governance structures in achieving 100% energy access by 2030.⁹⁶ Additionally, the offshore renewable energy market is proving to be a game changer in Nigeria as alternative sources of energy are springing up.⁹⁷

2.2.1 Historical Overview of Nigeria's Energy Since Independence (1960 – Till Date)

Although the Nigerian offshore environment hosts significant energy resources, including offshore wind, wave, and tidal potential, usage till date has primarily been for oil and gas exploration and production.⁹⁸ Consequently, Nigeria, a country rich in oil and gas reserves, has become the world's 7th largest producer of crude oil, yet faces energy crisis.⁹⁹

Ironically, the realities of the energy sector have manifested in the high rate of greenhouse gas emissions due to the associated gas flaring, the energy crisis resulting from the inadequate supply of electricity and environmental degradation.¹⁰⁰ Nigeria's pledge during to end gas flaring in the country by 2030 is also stagnant with the absence of policy and institutional governance required in the campaign towards the tapping of offshore renewable energy resources.¹⁰¹ Thus, the challenge with Nigeria's energy sector is that the quest for clean energy technology for electricity

⁹⁵ *Ibid.*

⁹⁶ Camilla Novaglio et al, "Deep Aspirations: Towards a Sustainable Offshore Blue Economy" (21 January 2021) Online: < <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7819630/>> accessed 1 May 2024.

⁹⁷ *Ibid.*

⁹⁸ Julia Kennedy-Darling et al, "The Energy Crisis of Nigeria: An Overview and Implications for the Future" (2008) 775 *University Chicago J* at 4-21 Online: < <http://large.stanford.edu/courses/2015/ph240/shittu1/docs/kennedy-darling.pdf>>.

⁹⁹ *Ibid.*

¹⁰⁰ EP Agbo et al, "Solar energy: A Panacea for the Electricity Generation Crisis in Nigeria" (2021) 7:5 *Heliyon* at 2-15 Online: < <https://www.cell.com/action/showPdf?pii=S2405-8440%2821%2901119-1>> accessed on 20 February 2024.

¹⁰¹ Climate Home News, "Nigeria to End Gas Flaring by 2030, under National Climate Plan' 2021" Online: <<https://www.climatechangenews.com/2021/08/13/nigeria-end-gas-flaring-2030-national-climate-plan/>> accessed 20 February 2024.

generation, might be a battle between energy supply, economic interests and sustainable development.

In the pre-colonial period, Nigeria's energy sector was predominantly based on traditional energy sources such as wood, charcoal, and other biomass for heating and cooking.¹⁰² Society was largely agrarian with energy usage patterns centered around agricultural and domestic needs.¹⁰³ There were no significant developments in terms of centralized energy production or distribution systems.¹⁰⁴

During the colonial era, the British divided Nigeria into separate administrative regions: Northern and Southern Nigeria Protectorates, which were later amalgamated in 1914.¹⁰⁵ This division entrenched regional differences in resource distribution and energy infrastructure. The indirect rule policy maintained existing traditional power structures in the north while disrupting them in the south, leading to an uneven development pattern.¹⁰⁶ Access to modern energy sources like electricity and imported coal remained limited to colonial administrative centers and infrastructure related to resource extraction.¹⁰⁷

The colonial period marked the beginning of significant changes in the energy landscape of Nigeria. The British colonial administration introduced new forms of energy, primarily to support the extraction and export of natural resources.¹⁰⁸ Coal mining began in earnest, notably in Enugu, serving both local energy needs and exports.¹⁰⁹ The colonial era also saw the introduction of electricity, with the first power station established in Lagos in 1896, primarily to power streetlights and the homes of British officials and merchants.¹¹⁰

During this period, the focus of the colonial government was to facilitate resource extraction and export, leading to the development of infrastructure such as railways and ports,

¹⁰² Omorogbe, *supra* note 65.

¹⁰³ *Ibid.*

¹⁰⁴ *Ibid.*

¹⁰⁵ Emmanuel Oladipo Ojo, "Nigeria, 1914-2014: From Creation to Cremation?" (2014) *J Hist Soc Nigeria* at 67-91.

¹⁰⁶ *Ibid.*

¹⁰⁷ Norbert Edomah, "The Governance of Energy Transition: Lessons from the Nigerian Electricity Sector" (2021) 11:1 *Energy Sust & Soc* at 1-12.

¹⁰⁸ *Ibid.*

¹⁰⁹ Jonas Eze, "Urbanization in Nigeria, Enugu (the Coal City) as an Urban Town: A Historical Review" (2021) at 1-2 Online: < <https://www.sciencedirect.com/science/article/pii/S026427512031444X> > accessed 25 March 2024.

¹¹⁰ Lagos State Ministry of Energy and Mineral Resources, "Lagos Electricity Policy" (2023) Online: < https://lagosmemr.com/wp-content/uploads/2023/05/Lagos_Electricity_Policy.pdf?ref=thesustainableinvestor.org.uk#:~:text=Lagos%20has%20historically%20been%20the,Eko%20Electricity%20Distribution%20Company%20Limited's > accessed 25 March 2024.

which were crucial for the coal and oil industries.¹¹¹ The exploitation of oil resources began in the late colonial period, with Shell-BP's discovery of oil at Oloibiri in 1956, which shifted the focus of the energy sector towards petroleum.¹¹²

Post-colonial Nigeria witnessed a significant transformation in its energy sector, largely driven by the booming oil industry. This period also highlighted the challenges of energy governance in Nigeria, with frequent changes in policy and regulation often influenced by political and economic factors both domestically and internationally. After independence in 1960, the Nigerian government took more active control over its natural resources, leading to the nationalization of the oil industry in the 1970s.¹¹³ The oil boom enriched the Nigerian state but also led to economic and political challenges, including corruption, regional disparities, and environmental degradation.¹¹⁴ Moreso, the economic policies of the post-colonial governments heavily relied on oil revenues, which accounted for a significant portion of the nation's export earnings and government revenue. However, the over-dependence on oil exposed the economy to global oil price fluctuations, leading to economic instability during periods of oil price declines.¹¹⁵

The later years of the post-colonial era saw efforts to diversify the energy sector, with initiatives aimed at developing alternative energy sources like natural gas and renewables, although progress has been slow and uneven.¹¹⁶ Environmental issues, particularly in the Niger Delta, have also been a significant concern, with extensive pollution from oil spills and gas flaring affecting local communities and ecosystems.¹¹⁷

The Nigerian Civil War (1967-1970) and subsequent oil boom in the 1970s transformed the country's economy and energy sector.¹¹⁸ The government nationalized the oil industry, consolidating control over resources through state-owned enterprises like the Nigerian National

¹¹¹ Stanley E Nwani, EA Ozegbe & YT Olunlade, "An Overview of Nigerian Energy Sector: Prospects and Challenges" (2020) Online: <<https://www.academia.edu/37834838/>> accessed 20 February 2024.

¹¹² Boele, Fabig & Wheeler, *supra* note 5.

¹¹³ Nwani, Ozegbe & Olunlade, *supra* note 111

¹¹⁴ Kennedy-Darling et al, *supra* note 98.

¹¹⁵ Edomah, *supra* note 107.

¹¹⁶ Nwani, Ozegbe & Olunlade, *supra* note 111.

¹¹⁷ Business and Human Rights Resource Centre, "Shell lawsuit: re oil pollution in Nigeria" Online: <<https://www.business-humanrights.org/en/latest-news/shell-lawsuit-re-oil-pollution-in-nigeria/>> accessed on 2 February 2024.

¹¹⁸ Nwani, Ozegbe & Olunlade, *supra* note 111.

Petroleum Corporation (NNPC).¹¹⁹ Oil revenues led to rapid economic growth and government expansion but also deepened corruption and fostered a dependency on petroleum exports.¹²⁰

By the 1980s, oil prices fell, triggering a debt crisis and economic recession. Nigeria's energy policies focused on maximizing oil production to counter economic decline, while little attention was given to other sectors.¹²¹ This economic collapse increased poverty and political instability, giving rise to militancy in oil-producing regions like the Niger Delta.¹²²

In the 2000s, Nigeria's energy strategy increasingly emphasized diversifying the energy mix. However, the dominance of the oil sector continued, with environmental degradation, gas flaring, and oil theft among the many issues. Offshore oil development was expanded with interest in renewable energy sources gradually growing. The government also introduced various policy frameworks, like the Nigerian Electricity Regulatory Commission (NERC), to attract private sector investment and improve governance.

Overall, Nigeria's energy sector is marked by significant transitions, from a traditional biomass economy to a centralized oil-dependent system. The colonial legacy of regional division, combined with the socio-political dynamics of the post-colonial period, and state dependency on oil revenues, has shaped the current challenges and opportunities in developing a sustainable offshore renewable energy governance framework.

This historical overview provides a foundation for understanding the complex dynamics and challenges of Nigeria's energy sector, which are crucial for discussing contemporary issues and future directions in energy policy and governance in Nigeria.

2.2.2 Offshore Renewable Energy Potential in Nigeria

Although, Nigeria is in the tropical zone and is endowed with enormous renewable energy potential, renewable energy is undeveloped, despite its current energy sources not meeting

¹¹⁹ *Ibid.*

¹²⁰ *Ibid.*

¹²¹ Ngozi Okonjo Iweala, "Point of View: Nigeria's Shot at Redemption" (December 2008) 45:4 *Finance & Development Magazine* Online: <<https://www.imf.org/external/pubs/ft/fandd/2008/12/okonjo.htm#:~:text=Subsequently%2C%20in%201982%2C%20the%20country,foreign%20exchange%20through%20import%20licenses.>> accessed 27 February 2024

¹²² Rebecca Ratcliffe, "This place used to be green: The Brutal Impact of Oil on the Niger Delta", (The Guardian, 06 December 2019) accessed on 1 February 2024.

demand.¹²³ For instance, Nigeria currently derives her electricity mainly from gas, hydropower, and thermal (i.e., coal) options.¹²⁴ All these traditional systems have been unable to meet the growing electricity demands, as it ranks lowest in electricity use, with most rural areas and peri-urban households in Nigeria having minimal or no electricity access.¹²⁵ Residents of rural and peri-urban areas are typically in poverty and have lower capital for renewable energy investments, making distributed energy systems unaffordable for many people.¹²⁶

This notwithstanding, ORE represents a pathway to expand generated power, providing an avenue to capitalize on renewable energy and with effective governance support the existing municipal social infrastructure. Thus, Nigeria is aiming at expanding its energy mix to raise the level of sustainable sources in the energy mix to produce more energy using renewable energy sources.¹²⁷ Renewable energy targets have been developed by the Government of Nigeria, with the realization of its vast exploration potential, as well as its position as the world's second highest sunshine hours and sunlight exposure.¹²⁸

The potential benefits of ORE development in Nigeria are significant, but they depend on the effective governance of the sector. The most obvious benefit is the production of environmentally sound, and sustainable offshore wind, tidal, and wave energy, which will contribute to the strengthening of the domestic energy mix in Nigeria.¹²⁹ Indeed, the exploration of renewable energy sources not only aligns with global sustainability goals but also offers a route to mitigate the environmental issues associated with fossil fuels. An incentive for Nigeria to pursue ORE is its strong near-coastal offshore wind potential, which would contribute to electricity generation.¹³⁰

Nigeria's potential for offshore renewable energy is pivotal for diversifying its energy mix and enhancing energy security. Nigeria is also situated in high tidal array development conditions and, geographically, its wave power scores extremely high in the world's vast potential range for

¹²³ Mohamed Shaaban & JO Petinrin, "Renewable Energy Potentials in Nigeria: Meeting Rural Energy Needs" (2014) 29 *Renewable and Sust Energy Rev* at 72-84.

¹²⁴ O Agberegba et al, "A Critical Review on Electric Power Sector for Sustainable Energy Development in Nigeria" (2021) 9:1 *J Energy Research & Rev* at 1.

¹²⁵ Pelz, Setu et al, "Electricity Supply Quality and Use Among Rural and Peri-Urban Households and Small Firms in Nigeria" (2023) 10(1) *Scientific Data* at 273 Online; <<https://www.nature.com/articles/s41597-023-02185-0>> accessed 20 March 2024.

¹²⁶ *Ibid.*

¹²⁷ Shaaban & Petinrin, *supra* note 123.

¹²⁸ Yusuf N Chanchangi et al, "Nigeria's Energy Review: Focusing on Solar Energy Potential and Penetration" (2023) 25:7 *Env, Dev & Sust* at 5755-5796 Online; <<https://link.springer.com/article/10.1007/s10668-022-02308-4>> accessed 20 March 2024.

¹²⁹ Shaaban & Petinrin, *supra* note 123.

¹³⁰ *Ibid.*

tidal energy. The country also boasts of a good ocean energy potential, though it lacks published worldwide research.¹³¹ These offshore renewable energies potential also includes Ocean Thermal Energy Conversion (OTEC) and Ocean Energy Technologies, discussed in succeeding sections.

2.2.2.1 Wind Energy

Offshore wind represents a substantial untapped resource, with the capability to support large-scale energy production.¹³² This is underscored by the global increase in investments and installations in the offshore wind sector, highlighting its growing importance and viability.¹³³ Nigeria's coastal and offshore regions, particularly from Lagos through Ondo, Delta, Rivers, Bayelsa, and Akwa Ibom states, exhibit considerable wind energy potential.¹³⁴ Recent studies indicate that these areas, including the mountainous terrains of the middle belt and northern fringes, could significantly contribute to the country's energy supply if fully developed.¹³⁵

The prospects for wind energy are significant, given the global surge in wind energy investments, particularly offshore.¹³⁶ For instance, the World Energy Outlook predicts that electricity generation from both onshore and offshore wind will increase at an average annual rate of six percent between 2011 and 2035.¹³⁷ By 2030, global offshore wind capacity is expected to exceed 265 GW, opening doors for Nigeria to harness this growth.¹³⁸ The Federal Government, investors, and private sector players could benefit by strategically exploring and capitalizing on Nigeria's vast coastal wind resources.¹³⁹

However, critical challenges remain, such as the current lack of infrastructure to support large-scale offshore wind farms, the need for substantial governance to protect the environment

¹³¹ Collins Nwaokocha, Adekojo Waheed & Abayomi Layeni, "Estimation of Tidal Power Potential of Nigeria Coastal Area", (January 2015) Online: < https://www.researchgate.net/publication/292644128_Estimation_of_tidal_power_potential_of_Nigeria_coastal_area> accessed on 20 March 2024.

¹³² Chinedu Ndigwe, "Nigeria's Potential Promising as Investors Turn to Wind Energy", (Business Day, 28 June 2023) Online: < <https://businessday.ng/energy/article/nigerias-potential-promising-as-investors-turn-to-wind-energy/>> accessed 20 March 2024; Charles Mba, "Where is Nigeria in the \$500bn Offshore Wind Energy Market?", (Dataphyte, 25 March 2020) Online: < <https://www.dataphyte.com/latest-reports/development/where-is-nigeria-in-the-500bn-offshore-wind-energy-market/>> accessed 20 March 2024.

¹³³ *Ibid.*

¹³⁴ Ameh A Attabo et al, "Assessment of the Wind Energy Potential and Economic Viability of Selected Sites along Nigeria's Coastal and Offshore Locations", (2023) 11 *Frontiers in Energy Research* Online: <<https://www.frontiersin.org/articles/10.3389/fenrg.2023.1186095>> accessed 20 March 2024.

¹³⁵ Ndigwe, *supra* note 132.

¹³⁶ Attabo et al, *supra* note 134.

¹³⁷ Sarah McDonald & David L VanderZwaag, "Renewable Ocean Energy and the International Law and Policy Seascape: Global Currents, Regional Surges" (2015) 29:1 *Ocean Yearbook* Online at 299-326 Online: <<https://doi.org/10.1163/22116001-02901013>> accessed 17 August 2024.

¹³⁸ *Ibid.*

¹³⁹ Ndigwe, *supra* note 132.

and security issues in some coastal regions also affect investment prospects.¹⁴⁰ Addressing these challenges will require collaborative efforts between government agencies, international organizations, and private entities.¹⁴¹

2.2.2.2 Ocean Thermal Energy Conversion (OTEC) and Ocean Energy Technologies

Aside from wind, ocean energy technologies like wave, tidal, and ocean thermal energy conversion (OTEC) hold promise.¹⁴² These technologies remain underexplored but could offer a supplementary energy source along the Atlantic coast. Wave and tidal energy would particularly benefit the Niger Delta region, which experiences substantial tidal flows, potentially generating significant renewable energy.¹⁴³

OTEC is another promising avenue for offshore renewable energy in Nigeria, since West African coast which Nigeria is geographically located, boasts of temperature gradients between surface and deep waters which are favorable to OTEC.¹⁴⁴ Studies suggest that floating OTEC plants could be economically viable and sustainable, offering a new frontier in energy production that could also support marine development.¹⁴⁵ This notwithstanding, OTEC faces similar technological, financial and regulatory challenges as wind energy. Moreover, there is a need for comprehensive site-specific studies to accurately assess the viability and optimal utilization of OTEC resources.¹⁴⁶

In summary, leveraging Nigeria's offshore renewable energy resources could significantly alter the country's energy landscape, offering a cleaner, more sustainable, and potentially more stable energy supply. This shift would not only align with global energy trends but also support domestic economic growth and environmental conservation efforts. The government and relevant stakeholders are encouraged to prioritize investments and policies that will harness these resources, ensuring that Nigeria can meet its future energy demands sustainably and reliably.

¹⁴⁰ *Ibid.*

¹⁴¹ Charles Mba, "Where is Nigeria in the \$500bn Offshore Wind Energy Market?", (Dataphyte, 25 March 2020) Online: < <https://www.dataphyte.com/latest-reports/development/where-is-nigeria-in-the-500bn-offshore-wind-energy-market/>> accessed 20 March 2024.

¹⁴² *Ibid.*

¹⁴³ Attabo et al, *supra* note 134.

¹⁴⁴ *Ibid.*

¹⁴⁵ Africa Natural Resources Center & Africa Development Bank, 'Assessing the Potential of Offshore Renewable Energy in Africa: A Background Paper', (3 December 2021) at 1-94 Online:< <https://www.afdb.org/en/documents/assessing-potential-offshore-renewable-energy-africa>> accessed 20 March 2024.

¹⁴⁶ Attabo et al, *supra* note 134.

2.2.3 Legal and Regulatory Frameworks Governing Offshore Energy Development in Nigeria

Generally, the future governance trends of offshore renewable energy involve simplification and streamlining of the management of the marine environment related to offshore renewable energies, with effort also focused on national strategic planning with environmental protection at the core of these all.¹⁴⁷ Hence, the need to explore current governance structures in Nigeria to assess the ‘availability of’ or ‘lack of’ sustainable governance structures to cater for ORE.

2.2.3.1 Overview of Legal Frameworks

The Nigeria legal framework for renewable energy is one dominated more by policies and guidelines than statutes. In recent years, Nigeria has taken significant steps to modernize its legal frameworks governing offshore energy development, particularly in renewable energy. While the Electricity Act and National Electricity Regulatory Commission serve as foundational elements, the government has pursued other legislative and policy action such as the Climate Change Act 2021.

The legal instruments (which embody statutes and masterplan) that may be relevant to the exploitation, utilization, and the development of renewable energy in Nigeria include:

1. Constitution of the Federal Republic of Nigeria 1999 as amended
2. Land Use Act 1978
3. Energy Commission Act, 1989
4. Environmental Impact Assessment Act 1992
5. Climate Change Act 2021
6. Electricity Act, 2023
7. Renewable Energy Master Plan 2023

¹⁴⁷ Kennedy-Darling et al, *supra* note 98.

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

The CFRN 1999 as amended, being the ground norm of the country, includes provisions that may relate to renewable energy. Chapter II of the CFRN (though not justiciable)¹⁴⁸ provides for environmental objectives¹⁴⁹ which is to the effect that the State shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria.¹⁵⁰ Thus the government is tasked to ensure sustainable development through the directive of environmental protection with regards to ORE developments.

International instruments that may apply to ORE can only have effect if they are given such force by the National Assembly. This is because the CFRN 1999 provides that ratification and domestication of treaties on any subject, between Nigeria and any other country shall have the force of law, only to the extent that such treaty has been enacted into law by the National Assembly.¹⁵¹ Thus, where any treaty has not been ratified and domesticated by the National Assembly, it cannot have the force of law in Nigeria.

In addition, the CFRN Constitution determines which level of government is responsible for ORE regulations. CFRN assigns legislative powers to the national assembly and the various state assemblies via the Exclusive Legislative List (ELL)¹⁵² and Concurrent Legislative list (CLL)¹⁵³ The ELL empowers the National Assembly to make laws with respect to taxation of income and profits, nuclear energy, intellectual property, immigration, marriage, exports and imports amongst other matters.¹⁵⁴ The CLL also empowers both the National Assembly and state assemblies to legislate over electric power covering areas such as electricity and the establishment of electric power stations, generation and transmission, in addition to the participation of the federation in any arrangement with another country.¹⁵⁵ Thus, these provisions by the CFRN 1999 as amended may be taken to extend to laws, relating to renewable energy supply both generally and as regards electricity supply specifically.

¹⁴⁸ Justiciable means that the section seems to prohibit the courts from entertaining matters arising out of violations of chapter II of the CFRN 1999 as amended; *Bishop Olubimi Okogie v A.G. Lagos State* (1981) 1 NCLR 337; CFRN 1999, s6(6)(c).

¹⁴⁹ CFRN 1999 as amended, s 20.

¹⁵⁰ CFRN 1999, s 16.

¹⁵¹ CFRN 1999, s 20(1); *Abacha v Fawehinmi* (2000) AHRLR 172.

¹⁵² Exclusive Legislative List is a list for 68 items, with respect to which only the National Assembly can legislate on: CFRN 1999, Second Schedule Part I.

¹⁵³ Concurrent Legislative List is a list for 12 items, with respect to which both the National Assembly and State assemblies can legislate with the extent of such coverage as defined by the CFRN 1999 as amended; CFRN 1999 as amended, Second Schedule Part II.

¹⁵⁴ *Ibid* at second schedule, part I

¹⁵⁵ *Ibid* at second schedule, part II.

This issue of concurrent legislative powers on energy matters was a key consideration in the Nigerian case of *Attorney General of Abia State & 35 Ors v Attorney General of the Federation*.¹⁵⁶ This case involved all the 36 states of Nigeria (through their Attorneys General) challenging the federal government over the allocation and distribution of revenue generated from the natural resources, particularly the revenue accruing to the Federation Account from the exploitation of natural resources like oil and gas.¹⁵⁷ The states contended that the existing revenue allocation formula was unconstitutional as it did not comply with the provisions set out in the constitution. The Supreme Court of Nigeria held in favor of the states, ruling that the existing revenue allocation formula (especially revenues generated from the exploitation of natural resources such as oil and gas) used by the Federal Government was indeed unconstitutional.¹⁵⁸ The court mandated that a new formula that complies with the constitutional guidelines be implemented.¹⁵⁹ The ruling underscored the constitutional rights of states in the federation to have a say in the management and exploitation of natural resources within their territories.¹⁶⁰ This affirmed a degree of autonomy for states concerning natural resource management, which directly influences legislative actions related to energy resources.¹⁶¹

The forgoing decision also had significant legislative implications for how energy laws and policies are crafted in Nigeria. It mandates that such laws must not only encourage efficient and sustainable energy use, but also ensure equitable economic benefits across all levels of government. In essence, the ruling serves as a judicial checkpoint that ensures any legislative action concerning energy matters must be compliant with constitutional provisions regarding resource control and revenue allocation. This case is a cornerstone in the ongoing dialogue and legal frameworks surrounding the governance and legislative oversight of energy resources in Nigeria, which may also include offshore renewable energy exploitation. Furthermore, the decision reinforces the federal structure of governance in Nigeria, where states should have autonomy in line with the constitution to manage natural resources. Whereas the reality may be that it is a centralized governance system clothed in federalism.

¹⁵⁶ *Attorney General of Abia State & 35 Ors v Attorney General of the Federation* (2002) 6 NWLR (Pt. 764) 542.

¹⁵⁷ *Ibid.*

¹⁵⁸ *Ibid.*

¹⁵⁹ *Ibid.*

¹⁶⁰ *Ibid.*

¹⁶¹ *Ibid.*

2.2.3.1.2 Land Use Act (the LUA) 1978¹⁶²

The Land Use Act of Nigeria, enacted in 1978, is the legislation that governs land ownership and use in Nigeria.¹⁶³ It streamlines land administration, facilitates land redistribution, and ensures that land is used in a manner that benefits the community and the nation.¹⁶⁴ It aims to ensure equitable access to land resources while promoting sustainable land use practices.¹⁶⁵ It vests all land in the territory of each state (except land vested in the federal government or its agencies) in the hands of the state governor to hold in trust for the people.¹⁶⁶ The Act mandates the registration of all land titles and transactions to ensure clear and secure land tenure.¹⁶⁷

While the Land Use Act primarily addresses terrestrial land, its principles and governance structures may however have implications for offshore renewable energy projects, particularly regarding land use rights and environmental considerations. This is because ORE projects, such as wind farms and tidal energy installations, often require coastal land for infrastructure, maintenance facilities, and grid connections.¹⁶⁸ Thus, the Act's provisions on land allocation and rights of occupancy apply to the coastal lands needed for these projects.¹⁶⁹

The Act allows for the revocation of rights of occupancy for overriding public interest, which includes environmental protection.¹⁷⁰ This can be relevant in managing coastal and marine ecosystems affected by offshore energy projects, ORE projects must comply with multiple regulations, including this Act.¹⁷¹ The LUA's framework ensures that land use planning integrates environmental impact assessments and sustainable development principles.¹⁷²

The Act may also play a role in the compensation for revoked rights, when land is acquired for public purposes, including infrastructure for offshore renewable energy. Affected landowners

¹⁶² Land Use Act, 1978.

¹⁶³ *Ibid*, preamble.

¹⁶⁴ O Uzoamaka, Chisom N Chiemezie & U Nnamdi, "Critique of Nigerian Land Use Act of 1978", (2021) Online: < https://www.researchgate.net/profile/Chiemezie-Chisom-Nwosu/publication/352327637_Critique_of_Nigerian_Land_Use_Act_of_1978/> accessed on 1 August 2024.

¹⁶⁵ Simon Ejokema Imoisi & Chi-Johnny Okongwu, "The Relevance of the Land Use Act 1978 in 21st Century Nigeria" (January 2022) 4:1 *Int J of Comparative L & Legal Philosophy* at 81-85.

¹⁶⁶ Land Use Act, 1978, s 1-2

¹⁶⁷ *Ibid* at s 5.

¹⁶⁸ Ezekiel Asuku Mayaki et al, "Assessment of Three Selected Locations in Nigeria as Offshore Windfarms Using Multi-criteria Decision Procedure" (2020) Federal University of Technology Minna Institutional Repository Online: < <http://repository.futminna.edu.ng>> accessed on 1 August 2024.

¹⁶⁹ Land Use Act, 1978, s 9-10.

¹⁷⁰ *Ibid* at s 28.

¹⁷¹ Imoisi & Okongwu, *supra* note 163.

¹⁷² *Ibid*.

and communities are entitled to compensation.¹⁷³ This may ensure fair treatment and support community acceptance of renewable energy projects.

However, the Act's role in environmental protection may be questionable. The Land Use Act's governance framework, did not effectively prevent environmental degradation in the context of crude oil exploration.¹⁷⁴ For instance, the provision for the revocation of rights of occupancy for environmental reasons has rarely been exercised, and the provision has not been effectively used to halt environmentally harmful activities such as oil spills and gas flaring.¹⁷⁵

This highlights the weak enforcement mechanism of the Act and Nigeria's heavy economic reliance on oil revenues- which has historically prioritized economic gains over environmental protection. To improve the situation, there is a need for stronger enforcement, better coordination among regulatory agencies, increased transparency and public participation, and a shift in economic priorities to balance development with environmental sustainability.¹⁷⁶

2.2.3.1.3 Energy Commission Act (the ECA) 1989

This legislation was enacted by Act No. 62 of 1979, amended by Act No. 32 in 1988 and finally Act No 19 of 1989¹⁷⁷. The ECA established the Energy Commission of Nigeria ("the Commission"). The Commission is the apex government organ empowered to carry out overall energy sector planning and policy implementation. Its technical committee is mandated to carry out the following functions¹⁷⁸; to prepare master plans and policies for energy development, exploitation, utilization, project executions, project financing, incentives and recommendations to government; to serve as a trouble-shooting center for technical issues in energy development; to advise the state and federal governments on energy development issues, including funding for energy Research & Development; and finally, to gather and disseminate information regarding government policies on energy development.¹⁷⁹

¹⁷³ Land Use Act, 1978, s 29.

¹⁷⁴ Rhuks T Ako, "Nigeria's Land Use Act: An Anti-Thesis to Environmental Justice" (October 2009) 53:2 *J Afr L* at 289 – 304, Online: < <https://doi.org/10.1017/S0021855309990076>> accessed 1 August 2024.

¹⁷⁵ *Ibid.*

¹⁷⁶ Akintunde Otubu, "The Land Use Act and Land Administration in 21st Century Nigeria: Need for Reforms" (2018) 9:1 *J Sust Dev L& Pol'y* Online: < 10.4314/jsdlp.v9i1.5> accessed 1 August 2024.

¹⁷⁷ Energy Commission of Nigeria, 'ECN Act', Online: < <https://energy.gov.ng/ecn> > accessed on 31 January 2024.

¹⁷⁸ Energy Commission Act, 1989, s 1.

¹⁷⁹ *Ibid* at s 5.

The ECA seems to be primarily tailored to the establishment of the Energy Commission, thus making few references relating to renewable energy development. One of such references was the inference drawn from the ‘energy planning and analysis of new and renewable energy sources’ function of the Commission.¹⁸⁰ In addition, the Act mentions the Commission’s commitment to making recommendations to the Government of the Federation for the exploitation of new sources of energy.¹⁸¹ The Act further mandates the Commission to liaise with all international organizations in energy matters such as the International Atomic Energy Agency, World Energy Conference and other similar organizations.¹⁸²

The Commission is yet to make any specific regulation with provision for standards to which renewable energy development must conform to. There is an obvious need for regulations with respect to ORE to align this Act with the government directive of harnessing, distribution and development of renewable energy in line with environmental protection.¹⁸³

2.2.3.1.4 Environmental Impact Assessment Act 1992¹⁸⁴

The Environmental Impact Assessment (EIA) Act of Nigeria, 1992 is the legislation aimed at ensuring that potential environmental impacts are considered, and mitigated before the commencement of any project or activity that may significantly affect the environment.¹⁸⁵ The Federal Environmental Protection Agency¹⁸⁶ (now Federal Ministry of Environment) was established with the responsibility of overseeing the implementation and enforcement of the Act.¹⁸⁷ It is also responsible for developing guidelines, procedures, and standards for conducting EIAs.¹⁸⁸ It also established a specialized division, the Environmental Assessment Department, a specialized department within the Ministry that coordinates and supervises all EIA processes.¹⁸⁹ The division also reviews and approves EIA reports and monitors compliance with EIA conditions.¹⁹⁰

¹⁸⁰ *Ibid* at s 1.

¹⁸¹ *Ibid* at s 5d(i).

¹⁸² *Ibid* at s 5(i).

¹⁸³ James Onwubuariru, “Reviewing the Legal Framework for Renewable Energy Projects in Nigeria” Online: <http://www.academia.edu/12116036/Reviewing_the_Nigeria> accessed 2 November 2023.

¹⁸⁴ Environmental Impact Assessment Act 1992, Decree No. 86, LFN CAP 2004.

¹⁸⁵ *Ibid* at s1.

¹⁸⁶ *Ibid* at Explanatory Note.

¹⁸⁷ Federal Ministry of Environment, “Mandate” Online: <<https://environment.gov.ng/mandate/>> accessed 1 August 2024.

¹⁸⁸ *Ibid*.

¹⁸⁹ Federal Ministry of Environment, “Office of Environmental Assessment Department: About Us” Online: <<https://ead.gov.ng/about-us/>> accessed 1 August 2024.

¹⁹⁰ *Ibid*.

The Act mandates that any project likely to have significant impact on the environment must carry out an EIA,¹⁹¹ it further provides for categories of industries requiring mandatory study¹⁹². These categories include agriculture, fisheries, forestry, housing, petroleum, mining, quarries and power generation and transmission etc.¹⁹³ Though renewable energy is not expressly mentioned, given that the Act has existed before renewable energy gained popularity, it could still be captured under power generation and transmission.

With regards to the requirement for public engagement, the Act provides that the project for which an EIA has been mandated shall be published in the Gazette. The screening report from the EIA exercise shall also be made available to the public at the registry maintained by the department.¹⁹⁴ Thereafter, the department before taking a course of action in relation to the project shall give the public an opportunity to examine and comment on the screening report and any record that has been filed in the public registry. It is also expected to take into consideration any comments that are filed.¹⁹⁵ However, these provisions may not be effective, as the place of publication is typically the website of the environmental assessment department¹⁹⁶, whereas most of these local communities lack access to the technology required to assess this information.

The Environmental Impact Assessment (EIA) Act of Nigeria, despite its intent to prevent environmental degradation, has not been fully effective in mitigating the environmental impacts of crude oil exploration.¹⁹⁷ This is also due to corruption, lack of transparency, insufficient regulatory oversight, weak enforcement and implementation.¹⁹⁸ More so, often EIAs focus on individual projects without adequately considering the cumulative impacts of multiple oil exploration activities in a region.¹⁹⁹ Insufficient community involvement is also another reason this Act may have failed to in environmental protection during oil exploration. In many cases,

¹⁹¹ Environmental Impact Assessment Act, 1992, s 14

¹⁹² Environmental Impact Assessment Act, 1992, s 23

¹⁹³ *Ibid* at Schedule.

¹⁹⁴ *Ibid* at s 20(1).

¹⁹⁵ *Ibid* at s 20(3).

¹⁹⁶ Federal Ministry of Environment, "Office of Environmental Assessment Department: Reports" Online: < <https://ead.gov.ng/reports/>>

¹⁹⁷ Abdullateef Abdullahi Ibrahim et al, "Environmental Impact Assessment in Nigeria: A Review" (2020) 8:3 *World J Adv Research & Rev* at 330-336, Online: < <https://wjarr.com/content/environmental-impact-assessment-nigeria-review>> accessed on 1 August 2024.

¹⁹⁸ *Ibid*.

¹⁹⁹ Morufu Olalekan Raimi, "A Review of Environmental, Social and Health Impact Assessment (Eshia) Practice in Nigeria: A Panacea for Sustainable Development and Decision Making" (24 June 2020) 9:3 *MOJ Public Health* at 81-87 Online: < https://papers.ssm.com/sol3/papers.cfm?abstract_id=3634716> accessed on 1 August 2024.

community consultations are inadequate or merely procedural, not genuinely integrating local concerns or knowledge.²⁰⁰

To improve the effectiveness of EIAs in protecting the environment, Nigeria needs to strengthen regulatory capacity, ensure transparency and accountability, foster genuine community involvement, and balance economic interests with environmental sustainability.²⁰¹ Robust implementation of these measures is crucial to preventing similar issues in the development of offshore renewable energy projects.

2.2.3.1.5 Climate Change Act 2021²⁰²

The Climate Change Act of Nigeria, enacted in 2021, represents a significant milestone in the country's efforts to address climate change and transition towards sustainable development.²⁰³ The Climate Change Act aims to provide a framework for achieving low greenhouse gas emissions, sustainable development, and the effective management of climate change impacts.²⁰⁴ To achieve this goal, the Act sets out objectives including reducing greenhouse gas emissions, promoting climate resilience, and enhancing sustainable development.²⁰⁵ It further sets a target for year 2050 - 2070 for the attainment of a net zero GHG emission. In line with Nigeria's international climate change obligations, the Act seeks to drive Nigeria towards a sustainable and resilient future, leveraging renewable energy as a key enabler of this transition.²⁰⁶ Other key objectives include promoting climate resilience and adaptive capacity; enhancing energy security and sustainability; and facilitating Nigeria's participation in international climate agreements.²⁰⁷

The Act also establishes the National Council on Climate Change which would play the role of coordinating and implementing most of the objectives of the Act.²⁰⁸ This includes being responsible for setting climate policies, reviewing national climate plans, and ensuring inter-ministerial coordination.²⁰⁹ The Act further establishes a climate change fund, which is a dedicated

²⁰⁰ *Ibid*

²⁰¹ A A Onuora & O C Nnubia, "The Effectiveness of Environmental Impact Assessment as an Instrument of Environmental Protection in Nigeria's Oil and Gas Industry" (8 October 2021) *Chukwuemeka Odumegwu Ojukwu University J Comm & Prop L*, 3:1 at 6-8 Online: < <https://www.nigerianjournalsonline.com/index.php/COOUJPL/article/view/2024>> accessed 12 August 2024.

²⁰² Climate Change Act, 2021.

²⁰³ Udo Udoma & Bello-Osagie, "The Climate Change Act 2021: Key Points for Consideration" (2023) Online: < <https://uubo.org/wp-content/uploads/2023/01/the-climate-change-act-2021-key-points-for-consideration.pdf>> accessed on 12 August 2024.

²⁰⁴ *Ibid*.

²⁰⁵ Climate Change Act, 2021, s 1

²⁰⁶ *Ibid* at s 1(f).

²⁰⁷ *Ibid* at s 1.

²⁰⁸ Climate Change Act, 2021, s 3-6.

²⁰⁹ Climate Change Act, 2021, s 2.

fund to be utilized for climate action, projects and initiatives.²¹⁰ The funds will be sourced from government allocations, international climate finance, and private sector contributions.²¹¹ The climate change fund may also facilitate the integration and development of ORE, through the financing of renewable energy projects.²¹² This could be inferred as the Climate Change Act places a strong emphasis on achieving low greenhouse gas emissions, thus places renewable energy as a critical component of Nigeria's climate strategy.²¹³

The Council published the Nigeria's NDC Implementation Framework in 2024²¹⁴, which outlines the country's approach to achieving its climate commitments under the Paris Agreement. The Framework proposes actions for reducing greenhouse gas emissions, enhancing climate resilience, and promoting sustainable development through sector-specific strategies in areas like energy, agriculture, and waste management.²¹⁵ It also emphasizes the importance of monitoring and reporting progress, securing finance, and engaging stakeholders to ensure the successful implementation of the NDC targets.²¹⁶

It further published the Nigeria's Long-Term Low Emission Development Strategy (LT-LEDs) 2060²¹⁷, to achieve net-zero emissions by 2060 while ensuring sustainable economic growth. The Strategy proposes a transition to a low-carbon economy, focusing on renewable energy, energy efficiency, and climate-resilient infrastructure.²¹⁸ It also emphasizes the importance of international partnerships, financing mechanisms, and policies to support the green transition.²¹⁹

However, not much has been currently achieved by the Act or its Council with regards to ORE.²²⁰ This may be because the Strategy document lacks a specified and clear implementation roadmap. It lacks detailed action plans and timelines for implementation.²²¹ This absence of specificity makes it challenging to assess how realistic the targets are, given Nigeria's current

²¹⁰ *Ibid* at s 12.

²¹¹ *Ibid* at s 13.

²¹² *Ibid*.

²¹³ PriceWaterhouseCooper, "Nigeria's Climate Change Act: Things to Know to Prepare for" Online: <<https://www.pwc.com/ng/en/assets/pdf/nig>> accessed 10 August 2024.

²¹⁴ National Council on Climate Change, "Nationally Determined Contribution Implementation Framework 2023-2060" (2023) at 40-50 Online: <<https://natecc.gov.ng/publications/ndc%20implementation%20framework.pdf>> accessed on 6 August 2024.

²¹⁵ *Ibid*.

²¹⁶ *Ibid*.

²¹⁷ National Council on Climate Change, "Nigeria's Long-Term Low Emission Development Strategy-2060" (2023) at 20-30 Online: <<https://natecc.gov.ng/publications/Final%20Version%20Nigeria's%20lt-leds.pdf>> accessed on 6 August 2024.

²¹⁸ *Ibid*.

²¹⁹ *Ibid*.

²²⁰ National Council on Climate Change, "Nationally Determined Contribution Implementation Framework 2023-2060" *supra* note 214.

²²¹ *Ibid*.

infrastructure and economic constraints. Moreso, the heavy reliance on international finance and technology transfer raises concerns about the feasibility of the strategy, especially considering the uncertainties around global climate finance commitments.²²² Without robust domestic funding mechanisms, the strategy might face significant hurdles in execution. The framework also does not adequately address the structural challenges in Nigeria's energy sector, such as the financial viability of transitioning to renewables on a large scale, and mechanisms for public and stakeholder engagement.²²³

2.2.3.1.6 Electricity Act 2023²²⁴

The Electricity Act 2023, formerly the Electric Power Sector Reform Act, 2005 (the EPRA), represents a legal framework designed to reform and modernize Nigeria's electricity sector. It introduces changes aimed at enhancing efficiency, encouraging investment, and promoting renewable energy integration. The former EPRA made provisions for the creation of key entities like the Nigeria Electricity Regulatory Commission, Rural Electrification Agency, and the Rural Electrification fund. It gave guidance in respect to issuance of licenses, calculation of tariffs, land access right amongst other provisions.²²⁵

The Nigerian Electricity Regulatory Commission (NERC) established through the Electric Power Sector Reform Act of 2005, is further retained under the Electricity Act 2023. It states that the Commission is aimed at setting up an attractive and conducive regulatory environment for the development of the electric sector with particular emphasis on the power generation, transmission, and distribution of electricity.²²⁶ The Commission is empowered to also enforce compliance, set standards, and promote competition within the electricity market. The Act enhances NERC's autonomy and capacity to regulate the sector effectively by providing mechanisms for cooperation between NERC and state regulatory commissions, to ensure cohesive governance across different levels of government.²²⁷

²²² *Ibid.*

²²³ *Ibid* at 40.

²²⁴ Electricity Act, 2023.

²²⁵ *Nigerian Energy Situation* Online: <https://Energylopedia.info/wiki/Nigeria_Energy_Situation> accessed 2 November 2023.

²²⁶ *Ibid.*

²²⁷ Electricity Act, 2023, s 33-62.

The Act also re-establishes other administrative bodies, which include the Rural Electrification Agency²²⁸ and its directorates,²²⁹ Nigerian Electricity Management Services,²³⁰ National Power Training Institute of Nigeria,²³¹ National Power Policy Coordinating Council²³² and National Hydroelectric Power Producing Areas Development Commission.²³³

The Act in its establishment of an integrated national electricity and strategic implementation plan,²³⁴ mandates the Ministry of Power to prepare and publish a comprehensive policy within one year of its enactment.²³⁵ This policy though yet to be established, is projected to provide guidance for the overall development of Nigeria’s power sector, by maximizing the use of both renewable and non-renewable energy sources.²³⁶ The plan is also meant to emphasize the deployment of mini-grids and stand-alone systems, especially in rural areas, and promote public-private partnerships to drive growth and sustainability in the sector.²³⁷ The Act delineates the regulatory responsibilities between the Federal and State Governments. The Federal Government retains control over national grid standards and interstate power distribution, while State Governments can regulate intra-state generation, transmission, and distribution.²³⁸ This division aims to foster a more decentralized and efficient regulatory environment, allowing states to tailor energy policies to their specific needs and conditions.²³⁹

The Act includes provisions that render support to electricity-generating enterprises to generate power from renewable sources or purchase renewable energy.²⁴⁰ The Act precludes operators of a transmission or distribution system from unreasonably rejecting requests from renewable energy generators to connect to a transmission or distribution system within the coverage area.²⁴¹ The Act also requires NERC to implement measures such as the provision of support towards the efficient implementation of rural electrification using renewable energy

²²⁸ Electricity Act, 2023, s 127.

²²⁹ Electricity Act, 2023, s 140.

²³⁰ Electricity Act, 2023, s 172.

²³¹ Electricity Act, 2023, s 185.

²³² Electricity Act, 2023, s 229.

²³³ Electricity Act, 2023, s 86.

²³⁴ Electricity Act, 2023, part II.

²³⁵ Electricity Act, 2023, s 4-5.

²³⁶ *Ibid.*

²³⁷ Kate Nkume, “A Review of the Electricity Act, 2023”, (Mondaq, 25 July 2023) Online: < <https://www.mondaq.com/nigeria/renewables>> accessed 25 April 2024.

²³⁸ Electricity Act 2023, s108-112.

²³⁹ Kate Nkume, “A Review of the Electricity Act, 2023”, (Mondaq, 25 July 2023) Online: < <https://www.mondaq.com/nigeria/renewables>> accessed 25 April 2024.

²⁴⁰ Electricity Act, s 171.

²⁴¹ *Ibid.*

sources.²⁴² The Federal Ministry of Finance is also tasked with introducing incentives to promote and facilitate generation and consumption of energy from renewable energy sources.²⁴³ This may encourage investments in renewable energy projects signifying a step forward and contributing to a diversified energy mix.²⁴⁴

However, most of the provisions on renewable energy under the Act seems to be more like general directives, lacking specifics and comprehensive guidance that are necessary for practical and effective implementation. They do not establish strong regulatory and institutional support frameworks specific to renewable energy. Meanwhile, the lack of clear regulatory guidelines and institutional support could result in regulatory uncertainties and hinder the growth of the renewable energy sector.²⁴⁵ Effective regulatory oversight and institutional capacity are critical for monitoring compliance, ensuring quality standards, and providing technical assistance to renewable energy projects.

Moreover, the Act does not clearly delineate the roles and responsibilities of various stakeholders, including federal and state governments, regulatory bodies, and private sector participants. This ambiguity can lead to overlaps, conflicts, and inefficiencies in the implementation of renewable energy projects. The Act lacks a detailed implementation framework or roadmap for the development and integration of renewable energy projects that would provide guidance. There is no clear guideline on how renewable energy projects should be sustainably exploited, prioritized, financed, and managed. Without a specific framework, stakeholders may face difficulties in understanding their roles, responsibilities, and the procedures to follow, leading to inconsistent implementation and potential delays in project execution. Clear guidelines on the responsibilities of each stakeholder would ensure better coordination and more effective execution of renewable energy policies.²⁴⁶

Although, the Electricity Act is a well-intentioned legislation, however, there is a need for a strong political will, pragmatic approach, and administrative structure to achieve its

²⁴² *Ibid*, s 164.

²⁴³ *Ibid*, s 166.

²⁴⁴ Dayo Idowu et al, "Review of the Electricity Act 2023 & Its Implications on the Nigerian Electricity Supply Industry" (DLA Piper Africa, 6 July 2023) Online: <<https://www.dlapiperafrica.com/en/nigeria/insights/2023/review-of-the-electricity-act-2023-and-its-implications-on-the-nigerian-electricity-supply-industry-nesi.html>> accessed 25 April 2024.

²⁴⁵ *Ibid*

²⁴⁶ KPMG, 'Commentaries on the Electricity Act, 2023' (June 2023) Online: < <https://assets.kpmg.com/content/dam/kpmg/ng/pdf/commentaries-on-the-electricity-act--2023.pdf>> accessed 25 April 2024.

commendable objective. The most recent Nigeria’s legal framework for energy, particularly renewable energy, is currently anchored on the Electricity Act 2023,²⁴⁷ the provisions of the Act are however largely unimplemented²⁴⁸.

2.2.3.1.7 Renewable Energy Master Plan, 2023

It was first developed by the Energy Commission of Nigeria in collaboration with the United Nation Development Programme (UNDP) in 2005 and was later reviewed in 2012 and 2023. The 2012 Master Plan was anchored on the convergence of principles, values and targets embedded in the National Energy Policy, National Policy on Integrated Rural Development, National Economic Empowerment and Development Strategy (NEEDS), the Millennium Development Goals (MDGs) and International Conventions to preserve global environmental change and reduce poverty. It expressed Nigeria’s vision and made a map for the increased role of renewable energy in achieving sustainable development.²⁴⁹

The 2012 regulatory framework had objectives and targets such as to create a level playing field, by incentives to market operations for introduction renewable energy system. It also tried to encourage consumers to have access to renewable energy products and provided fiscal and market incentives, through custom duty exemptions and tax credits. It established a renewable energy fund, fixed price or payment system as well as capital incentives.²⁵⁰ The 2012 Plan also stressed the need for the integration of renewable energy in buildings electricity grids and for off –grids electrical systems.

The 2023 Master Plan aims to be a more strategic framework designed to enhance the contribution of renewable energy to Nigeria’s energy mix. This because it sets ambitious targets for renewable energy adoption, aiming to diversify the national electricity supply and reduce reliance on fossil fuels.²⁵¹ This target includes to increasing the share of renewable electricity from 13% in 2015 to 23% by 2025 and 36% by 2030. Specific capacity targets include small hydro:

²⁴⁷ Electricity Act, 2023.

²⁴⁸ Onwubuariru, *supra* note 183.

²⁴⁹ Nnaemeka Vincent Emodi, “*Energy Policies for Sustainable Development strategies: The case of Nigeria*” Online: <<http://books.google.com.ng/books?id=5Gqidaaaqbaj&pg=PA588dg=REMP+2012&source=bl&ots=>>. Accessed 2 November 2023.

²⁵⁰ Onwubuariru, *supra* note 183.

²⁵¹ IEA, “Renewable Energy Masterplan” Online: <<https://www.iea.org/policies/4967-renewable-energy-master-plan>> accessed 20 April 2024

2,000 MW by 2025, Solar PV: 500 MW by 2025, Biomass: 400 MW by 2025 and Wind: 40 MW by 2025.²⁵²

The Plan also targets higher electrification rates, from 42% in 2005 to 60% in 2015, and 75% by 2025, aiming to improve electricity access in both urban and rural areas.²⁵³ It also introduces a set of fiscal and market incentives to support renewable energy deployment, such as a moratorium on import duties for renewable energy technologies and plans for tax credits, capital incentives, and preferential loan opportunities.²⁵⁴

Additionally, one of the key contributions of the Plan is that it emphasizes the need for a specialized fund and agency, the National Renewable Energy Agency (NREA), to oversee and facilitate renewable energy projects. This institutional support is yet to be established, despite its critical role for coordinated efforts in policy implementation and project management for renewable energy projects.²⁵⁵

However, the Plan does not give robust provisions for the regulations or provide clear guidelines for the roles of different stakeholders.²⁵⁶ This is because effective governance requires strong regulatory oversight and capable institutions to enforce standards and support project development.²⁵⁷

While the Renewable Energy Master Plan 2023 sets ambitious goals for renewable energy integration, its governance provisions need significant enhancements to ensure these goals are achievable. The Plan requires a detailed implementation roadmap, robust financial incentives, comprehensive infrastructure development, clear regulatory frameworks, and a strong emphasis on R&D. Addressing these gaps will be critical for Nigeria to successfully transition to a sustainable energy future and meet its renewable energy targets.

The REMP has also not been approved by the National Assembly to be passed into law and thus has no force of law or legislative force. Whereas the Plan if followed, may boost renewable electricity to up to (10%) ten percent of Nigeria's total energy consumption in 2025. Thus, an ORE

²⁵² *Ibid.*

²⁵³ *Ibid.*

²⁵⁴ Global Data, "Nigeria Renewable Energy Policy Handbook: 2023 Update", Online: < <https://www.globaldata.com/store/report/nigeria-renewable-energy-government-regulation-policy-analysis/>> accessed 20 April 2024.

²⁵⁵ IEA, "Renewable Energy Masterplan" *supra* note 251.

²⁵⁶ *Ibid.*

²⁵⁷ *Ibid.*

investor seeking partnership with government or investment incentives may better align its projects with the REMP²⁵⁸.

2.2.3.2 Overview of Institutional Framework for Offshore Renewable Energy in Nigeria

Nigeria like many nations in the world has established institutions to implement the objectives and targets as stipulated by the various policies and regulations. The federal government may need to implement the various renewable energy policies and regulations through its institutions, partnerships with other stakeholders, particularly the private sector and international agencies. For this study, we shall restrict ourselves to the institutions established to implement the said renewable energy policies and regulatory guidelines, the said institutions are:

1. Energy Commission of Nigeria (ECN)
2. Nigeria Electricity Regulatory Commission (NERC)
3. Rural Electrification Agency (REC)
4. Federal Ministry of Power (FMP)

2.2.3.2.1 Energy Commission of Nigeria (ECN)

The Energy Commission of Nigeria (the ECN) was established by Act No. 62 of 1989 as amended by Act No. 32 of 1988 and Act No. 19 of 1989.²⁵⁹ It commenced operation in 1989 after the meeting of the heads of Economic Community of West Africa States (ECOWAS) in 1982 at Conakry.²⁶⁰ In that meeting, a declaration was made that each state should establish an Agency called Energy Commission charged with the responsibility for the strategic planning of national policies in the field of energy in all its ramifications.²⁶¹

The ECN serves as a center for gathering and dissemination of information relating to national policy in the field of energy, for solving any policy relating to the field of energy and advising the government of the federation or state on questions relating to such aspects of energy

²⁵⁸Nnaemeka Vincent Emodi, *Energy Policies for Sustainable Development strategies: The case of Nigeria Online*: <<http://books.google.com.ng/books?id=5Gqidaaaqbaj&pg=PA588dg=REMP+2012&source=bl&ots=>> accessed 2 November 2023.

²⁵⁹ ECN, "About ECN" Online: <http://energy.gov.ng/index.php?option=com_content&view=article&id=48> accessed 28 February 2024.

²⁶⁰ *Ibid.*

²⁶¹ *Ibid.*

as the government of the federation or a state may from time to time refer to it.²⁶² The ECN also prepares recommendations for the exploitation of the new sources of energy after consultation with such agencies of government whose functions relate to the field of energy.²⁶³

Furthermore, the ECN collates, analyzes and publishes information relating to the field of energy; enquires into and on the adequate funding of the energy sector including research and development, production and distribution to the government of the federal government of the federation or the state; lays down guidelines on the utilization of energy types for specific purposes; monitors training and man power development in the energy sector; liaises with all international organizations in energy matters; and carries out such other activities as are conclusive to the discharge of its functions under the decree establishing it²⁶⁴.

The ECN also invites technical papers from experts for its journal of energy policy, research, and development (JEPRD).²⁶⁵ It is also presently collaborating with Japan International Cooperation Agency (JICA) to carry out energy audits of some buildings as well as working on the Nigeria Energy Calculator 2050.²⁶⁶ In 2017, it awarded certain capital projects to successful companies while carrying out other in-house seminars on energy such as the In-House seminar on Nigeria National Energy Data Bank held on the 22nd of March 2017.²⁶⁷ In promoting renewable electricity, the ECN aims to provide the overall co-ordination of renewable electricity and ensure broad based participation by key stakeholders in the energy sector.²⁶⁸ Whilst ensuring that evolving policies conform and are harmonized with the overall thrust of the national energy policy.²⁶⁹ However, apart from the foregoing not much is yet seen in terms of practical application of these aims and objectives.

2.2.3.2.2 Nigerian Electricity Regulatory Commission (NERC)

The history of the current NERC can be traced from 1896 when electricity power generation in Nigeria began in 1896. In 1929, the Nigeria Electric Company Supply Company (NESCO) was first established.²⁷⁰ This was followed in 1951, with the establishment of the

²⁶² *Ibid*

²⁶³ *Ibid.*

²⁶⁴ *Ibid.*

²⁶⁵ *Ibid.*

²⁶⁶ *Ibid.*

²⁶⁷ *Ibid.*

²⁶⁸ *Ibid.*

²⁶⁹ *Ibid.*

²⁷⁰ NERC, "History and Role", Online: <<https://nerc.gov.ng/history-and-role/>> accessed 26 February 2024.

Electricity Corporation of Nigeria to take over the assets of NESCO. In 1962, NDA (Nigeria Dams Authority) was also established,²⁷¹ and ten years later, in 1972, the Electricity Corporation of Nigeria and NDA were merged to form NEPA (National Electric Power Authority) which later metamorphosed to Power Holding Company of Nigeria (PHCN).²⁷²

The Commission was established to carry out functions ranging from creating, promoting, preserving efficient industry and market structures to ensure optimal utilization of resource for provision of electricity services; to maximize access to electricity services in both rural and urban areas; to ensure that prices charged are fair to allow for reasonable earnings for efficient operation; to ensure safety security reliability and quality of service in the production and delivery of electricity to consumer; to ensure that regulation is fair and balanced for licenses, consumers, investors and other stakeholders; and to present quarterly report to the president and national assembly on its activities²⁷³.

The Commission aimed to stimulate investment in renewable energy generation in Nigeria with its vast and mostly untapped potential in renewable energy resources.²⁷⁴ It set a target of generating a minimum of 2000 Megawatts of electricity from renewable by 2020 with a feed-in-tariff for solar, wind, Biomass and small hydro and fifty percent (50%) of total projected renewable sourced electricity.²⁷⁵ Also, the commission had approved three windows for good connected renewable energy projects.²⁷⁶ The first window was the net-metering for very small capacities of renewable energy projects, which are typically below 1 MW.²⁷⁷ The second window was for feed-in tariff with capacities up to 5 MW of solar, 10 MW of wind, 10 MW of Biomass and 30MW of small hydro.²⁷⁸ While the third window above the capacities would be procured through the Nigerian Bulk Electricity Trading (NBET).²⁷⁹ Yet, nothing has been achieved with respect to either renewable energy or ORE development despite the targets and aims of the Commission.

²⁷¹ *Ibid.*

²⁷² *Ibid.*

²⁷³ *Ibid.*

²⁷⁴ NERC, "Statistics and Performance", Online: < <https://nerc.gov.ng/resource-category/statistics-and-performance-data/> > accessed 28 February 2024.

²⁷⁵ *Ibid.*

²⁷⁶ *Ibid.*

²⁷⁷ *Ibid.*

²⁷⁸ *Ibid.*

²⁷⁹ *Ibid.*

2.2.3.2.3 Rural Electrification Agency (REA)

The Rural Electrification Agency operates under the mandates of the Nigerian Electricity Regulatory Commission (NERC) and the Ministry of Power, which provide the overarching policy and regulatory frameworks for renewable energy projects.²⁸⁰ Saddled with the responsibility of providing electricity to rural communities in Nigeria, the primary function of the Agency includes the good development of isolated and mini-grid systems and renewable power generation. In promoting renewable power supply, the REA shall carry out those functions, serve as an implementation agency for the policy guidelines and provide a coordinating point for renewable electricity activities among states and federal agencies²⁸¹.

The Agency carries out a lot of projects to achieve these functions through its rural duties as maybe assigned through its rural electrification fund. It further has a target of attaining 30,000 megawatts of power generation by 2030 and prioritized access to energy to boost economic activities in major markets in Nigeria, with part of its off-grid electrification effort aimed to start at Shomolu in Lagos, Sabongari in Kano and Ariaria market in Abia.²⁸² Also, its ongoing projects in different parts of the country aim to allow rural power developers to access between 3.5 million and 106 million Nigerian Naira (NGN) to improve rural electricity²⁸³.

In achieving the Agency's mandate, the federal government of Nigeria allocated funds to the Agency for procurement of goods, works and services for the agency to which experienced and eligible contractors were invited²⁸⁴. The Agency further has policy objectives in terms of achieving rural electrification and connecting 1.1 million rural households yearly.²⁸⁵ To achieve this, it has an energy database which seeks to provide energy, community and grid data to encourage transparency in the Nigerian energy industry by creating a central home for energy statistics and community data collected by government agencies, donors and private entities.²⁸⁶ It is hoped that easily accessible data will reduce the barriers to entry in the Nigerian energy space.²⁸⁷

²⁸⁰ REA, "About", Online: <<https://rea.gov.ng/#>> accessed 26 February 2024.

²⁸¹ *Ibid.*

²⁸² *Ibid.*

²⁸³ REA, "Projects", Online: <<https://rea.gov.ng/rea-projects-within-2017-appropriation-budget/#1527770392527-dc1df11d-8bf3>> accessed 28 February 2024.

²⁸⁴ *Ibid.*

²⁸⁵ REA, "About", Online: <<https://rea.gov.ng/#>> accessed 26 February 2024.

²⁸⁶ REA, "Energy Database", Online: <<https://rea.gov.ng/energydatabase/>> accessed 26 February 2024.

²⁸⁷ REA, "About us-REA" <<http://rea.gov.ng/about-us-z/>; <http://omojuwa.com/2017/04/buhari-appoints-sanusi-ohiare-executive-director-rural-electrification-agency/>>. Accessed 27 February 2024.

In addition, the Agency has a crucial role it would play in the broader renewable energy landscape in Nigeria. This is because its proximity and focus on local communities, might serve as a springboard for local communities' involvement in ORE governance. For instance, its primary focus is on off-grid solutions, the governance frameworks, funding mechanisms, and partnerships it fosters can significantly support the development of offshore renewable energy projects.

However, the Agency has not been set up effectively to cover offshore renewable energy as it also has infrastructural and regulatory challenges that need to be addressed. These challenges can be solved without proper infrastructure development and regulatory support.

2.2.3.2.4 Federal Ministry of Power (FMP)

The FMP has the overall responsibility for formulating electric power policy including the policy on renewable electricity. In its vision statement, its aims to generate, distribute and transmit power (electricity) to all nooks and crannies of the nation. It also intends to facilitate the provision of adequate and affordable housing for all Nigeria in both urban and rural areas in secure, healthy and decent environments.²⁸⁸

The specific functions of the Ministry include proposing policy options and recommendations to the Federal government concerning legislation, policy and investment on power including renewable electricity. It is also involved in monitoring and evaluation of implementation and performance of policies within governmental agencies and in the electricity markets.²⁸⁹ It also establishes, monitors and evaluates the performance of renewable electricity policy towards increasing the access to electricity in rural areas.²⁹⁰ It further facilitates the close coordination of renewable electricity activities among agencies of the federal government, whilst ensuring that Nigeria's renewable electricity policy is consistent with national obligations in regional and international organizations.²⁹¹ Therefore, it liaises with the national assembly on matters relating to renewable electricity production and use²⁹².

The Ministry in striving to promote energy efficient and renewable energy development in Nigeria, has taken steps to implement energy efficiency in Nigeria. This has occurred through

²⁸⁸ Federal Ministry of Power, "About - Federal Ministry of Power" < <https://power.gov.ng/about-nigeria-federal-ministry-of-power/>> accessed 28 February 2024.

²⁸⁹ *Ibid.*

²⁹⁰ *Ibid.*

²⁹¹ *Ibid.*

²⁹² *Ibid.*

approaches such as integrated design process, efficient livable and affordable design, effective compliance and enforcement framework as an implementation support and monitoring and verification through energy certification and operational audit²⁹³.

With reference to building energy efficiency guidelines in Nigeria, the Ministry may work with the Ministry of Works to contribute amongst other things to the process of planning an energy efficient building design, bioclimatic architecture in Nigeria, renewable energy technologies, regional hazards affecting building and systems design, tools for designing energy efficient buildings, energy analysis of buildings in Nigeria, sustainability certification and regulatory frameworks.²⁹⁴ With strategic and comprehensive policy improvements, Nigeria can fully capitalize on its offshore renewable energy potential.

2.3 Current Seascape

The seascape currently occupied by Nigeria is the Atlantic Ocean and part of the Eastern Tropical Atlantic Marine Large Marine Ecosystem (ETAMLME).²⁹⁵ This accounts for the wind energy available at an annual average speed of 0.2m/s near the coast to 4.0m/s at the Northern borders.²⁹⁶ Also, the coastal regions of the south and the Northern part of the country are possible suitable site for wind energy exploitation.²⁹⁷

Despite this potential, Nigeria is however behind on the governance of offshore renewable energy, the country may need to rethink its current governance structure on ORE.²⁹⁸ This section explores the growing need for the use of ORE, alongside the many potential negative impacts of ORE development that makes governance a crucial piece to ORE development.

Rising populations, rapid development in the littoral states and the move towards offshore renewable energy have driven up both human and maritime activities causing increased risk of marine pollution.²⁹⁹ Thus, questions are being raised about the conservation and sustainable use of

²⁹³Energy Platform Nigeria Online: <<http://www.energyplatformnigeria.com/index.php/library/energy-efficiency>> accessed 28 February 2024.

²⁹⁴ Federal Ministry of Works, “Development of the National Building Energy Code: Technical Study” (2017) Online: <https://www.worksandhousing.gov.ng/themes/front_end_themes_01/images/download/1510059611415.pdf> accessed 1 May 2024.

²⁹⁵ Novaglio et al, *supra* note 96.

²⁹⁶ Shaaban & Petinrin, *supra* note 123.

²⁹⁷ *Ibid.*

²⁹⁸ Isah A Dioha, et al “Financing Renewable Energy: Policy Insights from Brazil and Nigeria” (26 January 2023) 13:1 *Energy Sust & Soc* at 1-16 Online: <DOI: 10.1186/s13705-022-00379-9> accessed 1 May 2024.

²⁹⁹ Emilia M Bravo et al, “Insights from the Management of Offshore Energy Resources: Toward an Ecosystem-Services Based Management Approach for Deep-Ocean Industries” (12 January 2023) *Frontiers in Marine Science* Online: <<https://www.frontiersin.org/articles/10.3389/>> accessed 1 May 2024.

migratory fish stocks, with shared health, biosecurity, science technology, and other concerns.³⁰⁰ More than ever, development now especially offshore must be looked at from the lens of ecological integrity, such as the ecosystem approach³⁰¹ It is thus very pivotal that a sustainable governance regime for offshore renewable energy be established that addresses the foregoing queries.

Moreso, the environmental impacts of offshore wind turbines especially at the construction period may have locally negative effects on the marine environment.³⁰² There are potential fish mortalities resulting from fish collisions with the monopile foundations and sub-sea high voltage alternating current with direct current cables.³⁰³ These turbines could further impose adverse impacts on the environment and other coastal users which could include loss of benthic habitats. These impacts may arise from scouring around the base of turbines or other support structures, operational electromagnetic from the use of cables to connect the offshore facility to the shore, and the potential effects of noise generated during installation and operation.³⁰⁴

Apart from the operated offshore facilities, the auxiliary facilities and infrastructure will also impose additional impacts. This may include increase in the sea traffic, need for land use, space to construct process facilities and underground cable corridors.³⁰⁵ Also, impacts from the operational ship traffic will result in the use of energy, generation of wastewater and other waste, oil spills; and increased domestic emission from the service vehicles and equipment.³⁰⁶ It is important for a governance regime that takes all these accompanying impacts into consideration is established, especially with reference to the off takers of the energy, the regulatory authorities and the investors.³⁰⁷ This could potentially improve the environmental performance of offshore clean energy as an alternative to the conventional sources.³⁰⁸

The socio-economic advantages which come with the renewable energy technologies, established their usage in many countries despite their potential negative side effects.³⁰⁹ Thus,

³⁰⁰ *Ibid.*

³⁰¹ A Al Arif & Anchustegui I Herrera, 'Regulatory and Policy Frameworks for Offshore Wind Projects: Spatial and Temporal Considerations in Light of Fisheries Sustainability amid Climate Change' (2022) Online: <<https://osf.io/preprints/socarxiv/d68zy>> accessed 1 May 2024.

³⁰² *Ibid.*

³⁰³ *Ibid.*

³⁰⁴ Emilia M Bravo et al, 'Insights from the management of offshore energy resources: Toward an ecosystem-services based management approach for deep-ocean industries' (12 January 2023) *Frontiers in Marine Science* Online: <<https://www.frontiersin.org/articles/10.3389> > accessed 1 May 2024.

³⁰⁵ Arif & Herrera, *supra* note 301.

³⁰⁶ *Ibid.*

³⁰⁷ *Ibid.*

³⁰⁸ *Ibid.*

³⁰⁹ *Ibid.*

offshore clean energy systems technologies have been developed and deployed globally, making the pioneer technologies rather matured now.³¹⁰ However, the previously enumerated negative side effects may be compacted by the unsustainable governance of ORE. Thus, this research makes a case for the imperative need for sustainable ORE governance with respect to Nigeria's current seascape. Given the potential of ORE in the country, there is a pressing need to fix the lack of appropriate regulation for ORE development.

2.4 Analysis of Existing Laws and Policies in Nigeria's Energy Sector

Nigeria may seem to have embraced energy transition with its updated Nationally Determined Contribution (NDC) of a reduction in its Business as Usual (BAU) emissions by 20% if no external support is received and 47% emissions reduction below BAU by 2030 where international assistance is received.³¹¹ It aims to explore strategic measures such as the installation of 13GW of off-grid renewable energy to effectively limit the global temperature increase to 1.5°C above pre-industrial levels by 2030, to reduce carbon emissions and achieve environment and climate change targets.³¹²

Nigeria's energy sector has undergone significant transformation from a vertically integrated model to a more liberalized and competitive market.³¹³ This shift began with the unbundling of the Nigerian Electricity Power Authority (NEPA) into generation, transmission, and distribution segments, now managed by Independent Power Producers (IPPs), the Transmission Company of Nigeria (TCN), and private distribution companies, respectively.³¹⁴ This restructuring aims to enhance efficiency and service delivery by fostering competition within the power market.³¹⁵

The foundation of Nigeria's current energy policy framework is the Electricity Act 2023 and further reconfirmed the establishment of the Nigerian Electricity Regulatory Commission (NERC) to regulate and oversee the power sector, ensuring a structured development of electricity

³¹⁰ TH Soukissian, FE Karathanasi & DK Zaragkas, "Exploiting Offshore Wind and Solar Resources in the Mediterranean Using ERA5 Reanalysis Data" (2022) Online: <<https://arxiv.org/pdf/2104.00571>> accessed on 6 August 2024.

³¹¹ National Council on Climate Change, "Nigeria's Long-Term Low Emission Development Strategy-2060", *supra* note 217.

³¹² Isah A Dioha, et al 'Financing Renewable Energy: Policy Insights from Brazil and Nigeria' (26 January 2023) 13:1 *Energy Sust & Soc* at 1-16 Online: <DOI: 10.1186/s13705-022-00379-9> accessed 1 May 2024.

³¹³ *Ibid.*

³¹⁴ *Ibid.*

³¹⁵ Charlotte Remteng, et al, 'Policy and Regulatory Framework for Energy in Nigeria', (Energypedia, 2021) Online: <https://energypedia.info/wiki/Policy_and_Regulatory_Framework_for_Energy_in_Nigeria> accessed 15 May 2024.

services.³¹⁶ Furthering the energy policy landscape, the REMP provides some guidance for the exploitation and development of renewable energy. These policies were designed to enhance energy security, ensure sustainable energy utilization, and support the economic development of the country.³¹⁷

The Nigerian government has shown a growing commitment to renewable energy and climate change mitigation, highlighted by the adoption of the Climate Change Act, 2021.³¹⁸ These initiatives set ambitious targets for reducing carbon emissions and achieving net-zero emissions by 2060, reflecting Nigeria's commitment to a sustainable energy future.³¹⁹ The World Bank supports these efforts through significant financing, aimed at boosting renewable energy deployment and enhancing the country's electrification rate.³²⁰

Nigeria has implemented various programs to stimulate renewable energy investments. The National Mass Metering Program (NMMP) and the Solar Connection Facility are key examples, providing financial and operational support to increase energy access and enhance the efficiency of the power sector. These programs are supported by financial mechanisms designed to bridge the gap in energy access and foster the adoption of renewable energy solutions across the country.³²¹

While significant progress has been made, challenges such as regulatory inconsistencies, infrastructure deficits, and financial constraints continue to hinder the full realization of Nigeria's energy potential. Despite reforms, Nigeria's energy infrastructure remains insufficient for the growing demand. Transmission and distribution networks need expansion and modernization, particularly to integrate renewable energy sources.³²²

The current legal and policy framework provides a foundation for Nigeria's energy sector, but continuous updates and reforms will be essential to adapt to emerging challenges and opportunities in the global energy landscape. For instance, existing frameworks lack specific provisions for offshore renewable energy. Policies generally focus on fossil fuels or onshore

³¹⁶ Electricity Act, 2023.

³¹⁷ IEA, "REMP" *supra* note 251.

³¹⁸ Climate Change Act, 2021.

³¹⁹ National Council on Climate Change, "Nigeria's Long-Term Low Emission Development Strategy-2060", *supra* note 217.

³²⁰ Semi Timi-Koleolu & Aderonke Alex-Adedipe, "Renewable Energy Laws and Regulations Nigeria", (ICLG, September 2023) Online: < <https://iclg.com/practice-areas/renewable-energy-laws-and-regulations/nigeria> > accessed 15 May 2024.

³²¹ DentonsACASLaw, "The Importance of Energy Access", (20 June 2022) Online: < <https://www.dentonsacaslaw.com/en/insights/articles/2022/june/20/recent-policies-enabling-energy-investments-in-nigeria> > accessed 15 May 2024.

³²² Kate Nkume, "A Review of the Electricity Act, 2023" (Mondaq, 25 July 2023) Online: < <https://www.mondaq.com/nigeria/renewables/1346714/a-review-of-the-electricity-act-2023> > accessed 25 April 2024.

renewables, leaving offshore wind and tidal energy underrepresented in legislation.³²³ Addressing these challenges requires ongoing reforms, sustained investment, and a clear commitment to regulatory stability and transparency.

2.5 Assessment of Effectiveness and Implementation Challenges

As discussed, Nigeria has high potential to harness energy from renewable sources and cannot be left out as a country that possesses enormous potential to develop and utilize energy from wind for electricity generation. For offshore wind energy, a comprehensive policy and legal framework is necessary to manage the complexities of offshore development. The framework should include clear guidelines on the allocation of rights, supportive policy measures, and a stable regulatory environment to encourage investment and development in this sector. Globally, countries have recognized the importance of these frameworks in driving growth in offshore wind capacity.³²⁴

The potentials of offshore renewable energy notwithstanding, the legal and institutional frameworks as relating to renewable energy in Nigeria are at their beginning stage. This may account for why most of it is still merely policies, guidelines and regulations which lack proper legislative enforceability. Thus, most of those legislations and institutions lack enforceability and strong institutional leadership that will provide direction and coordination for all renewable energy activities in Nigeria.

Furthermore, the laws do not provide for systematic procedures to be followed in being licensed to be a renewable energy investor. No dispute settlement method is prescribed as to how issues that may arise may be resolved from the practice or development of renewable energy. There is also a lack of legally binding long-term power purchase agreements for the developers of renewable energy on the national scene. Overall, Nigeria's legal and regulatory frameworks for offshore energy development are evolving, with a clear shift towards embracing renewable energy. However, continuous improvements and updates to these frameworks are essential to fully harness the potential of renewable resources and achieve sustainable energy development goals.

³²³DentonsACASLaw, "The Importance of Energy Access" (20 June 2022) Online: <<https://www.dentonsacaslaw.com/en/insights/articles/2022/june/20/recent-policies-enabling-energy-investments-in-nigeria>> accessed 15 May 2024.

³²⁴Yelena Shliomenzon, "Mapping Policy and Legal Framework for the Offshore Wind Energy Development", (S&P Global, 5 April 2022) Online: <<https://www.spglobal.com/commodityinsights/en/ci/research-analysis/policy-and-legal-framework-for-the-offshore-wind-energy.html>> accessed 1 June 2024.

Incorporating regional and international principles and tools may be the game changer for the country's development and sustainable governance of offshore renewable energy.

CHAPTER 3: REGIONAL PERSPECTIVES ON OFFSHORE RENEWABLE ENERGY – AFRICAN DYNAMICS

3.1 Introduction

Regional integration has been a core interest for Nigeria as a country. In its action plan for 2015-2030 it seeks to develop measures at regional levels for integrating renewable energy, whilst pushing for greater leadership strategy at Economic Community of West African States (ECOWAS) in tackling climate change.³²⁵ Africa's vast and largely untapped potential for offshore renewable energy (ORE), offers a significant opportunity for addressing the continent's growing energy demands, and promoting sustainable development.³²⁶ This chapter delves into the regional dynamics influencing ORE development in Africa, with a particular focus on the interplay of historical, legal, and policy frameworks that shape the governance landscape. By examining key regional actors and their roles, as well as the challenges and opportunities in fostering collaboration and commitment towards ORE, we gain an understanding of the pathways to harnessing this critical resource.

Section 3.2 begins with an analysis that introduces the Bakassi Peninsula Case and Nigeria's regional relationship. The Bakassi Peninsula dispute between Nigeria and Cameroon, adjudicated by the International Court of Justice (ICJ) in 2002, exemplifies the complexities of territorial jurisdiction and resource control in Africa.³²⁷ The case underscores the importance of peaceful resolution through international law and has implications for offshore resource management and regional stability.³²⁸

Section 3.3 analyzes the role of regional organizations (e.g., African Union (AU) and ECOWAS) in energy governance. Regional organizations such as the AU and the ECOWAS play pivotal roles in shaping energy governance frameworks across Africa.³²⁹ Their efforts in policy harmonization, capacity building, and promoting sustainable energy initiatives are crucial for the

³²⁵ Clean Tech Incubation and Acceleration Foundation, "National Renewable Energy Action Plan (NREAP), 2016 (2015-2030)" (Clean Tech, July 2016) at 12.

³²⁶ Opeyemi Akinyemi et al, "Regional Integration and Energy Sustainability in Africa: Exploring the Challenges and Prospects for Ecowas", (Yaounde, AGDI Working Paper, 2019) at 2- 24 Online: < <https://www.econstor.eu/bitstream/10419/227959/1/1682193527.pdf>> accessed on 20 May 2024.

³²⁷ International Court of Justice (ICJ), "*Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea intervening)*" Online: < <https://www.icj-cij.org/case/94> > accessed 1 June 2024.

³²⁸ *Ibid.*

³²⁹ Akinyemi et al, *supra* note 326.

development of ORE projects.³³⁰ These organizations facilitate regional cooperation, ensuring that member states align their energy policies with broader continental and global sustainability goals.³³¹

Section 3.4 drills down on regional programs that may promote regional ORE policies (e.g., Regional Seas Program and the Abidjan Convention),³³² which also provide structures for the sustainable exploitation of marine resources.³³³ The discussion on the Abidjan Convention as a regional agreement is focused on regional cooperation, protecting the marine and coastal environment of West and Central Africa.³³⁴ This chapter explores how this agreement addresses issues like pollution control and environmental impact assessments (EIA). This could provide a framework for the responsible development of ORE projects by ensuring that such activities do not harm marine ecosystems and promote sustainable use of resources.

Section 3.5 addresses the challenges and opportunities in regional collaboration, cooperation, and commitments towards ORE Development. The development of ORE in Africa faces significant challenges, including inconsistent regulatory frameworks and institutional weaknesses. However, there are substantial opportunities for overcoming these challenges through enhanced regional collaboration, policy harmonization, capacity building, and innovative financing mechanisms.³³⁵ By leveraging the strengths of regional organizations and fostering cooperative initiatives, African nations can unlock the full potential of their offshore renewable energy resources, contributing to sustainable development and energy security.³³⁶

Thus, the chapter aims to provide a detailed exploration of the regional perspectives on offshore renewable energy in Africa and how Nigeria could benefit from the current African stance on ORE. It also highlights the importance of governance frameworks, effective regional collaboration, and the commitment of African nations to harnessing offshore renewable energy.

³³⁰ *Ibid.*

³³¹ *Ibid.*

³³² World Economic Forum, “Why the High Seas Treaty is a Breakthrough for the Ocean and the Planet”, (6 March 2023) Online: < <https://weforum.org/agenda/2023/03/a-seamark-deal-for-the-global-ocean-why-the-high-seas-treaty-matters/> > accessed on 2 June 2024.

³³³ *Ibid.*

³³⁴ United Nations Environment Programme (UNEP), “Abidjan Convention: Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the West and Central African Region” (UNEP, 2024) Online: < <https://www.unep.org/abidjan-convention> > accessed 19 August 2024.

³³⁵ Lisa Cohn, “Regulatory Obstacles and Financing Challenges Throttle Renewable Energy Access in Sub-Saharan Africa” (Power for All, 31 March 2023), Online: < <https://www.powerforall.org/insights/finance/regulatory-obstacles-and-financing-challenges-throttle-renewable-energy-access-sub-saharan-africa> > accessed on 29 May 2024.

³³⁶ *Ibid.*

3.2 An Analysis of the Bakassi Peninsula Case and Nigeria's Regional Relationship

The Bakassi Peninsula, a region rich in oil and gas reserves, has been a point of territorial disputes between Nigeria and Cameroon.³³⁷ This dispute, rooted in colonial-era boundary definitions, escalated due to the area's valuable hydrocarbon resources.³³⁸ Cameroon brought the case to the International Court of Justice (ICJ), seeking resolution over the sovereignty of the peninsula.³³⁹ The case, adjudicated by the ICJ, has significant implications for regional relationships, governance, and the management of offshore resources.³⁴⁰ This is because it shaped the geopolitical and legal landscape of the region, influencing resource management and international cooperation.³⁴¹

The conflict over the Bakassi Peninsula dates to the colonial era, with the boundary between Nigeria and Cameroon being poorly defined.³⁴² As earlier stated the discovery of substantial oil reserves heightened the stakes, leading to intensified territorial claims by both nations.³⁴³ In 1994, Cameroon instituted the proceeding against Nigeria, and filed in the Registry of the Court an application with respect to the question of sovereignty over the Bakassi Peninsula.³⁴⁴ It further requested the Court to determine the course of the maritime frontier between the two States, in so far as that frontier had not been established in 1975.³⁴⁵ As a basis for the jurisdiction of the Court, Cameroon referred to the declarations made by the two States under Article 36, paragraph 2, of the Statute of the Court, by which they accepted that jurisdiction as compulsory.³⁴⁶

In its Application, Cameroon referred to “an aggression by the Federal Republic of Nigeria, whose troops were occupying several Cameroonian localities on the Bakassi Peninsula”, and asked the Court, *inter alia*, to declare that sovereignty over the Peninsula of Bakassi was Cameroonian,

³³⁷ Tim Daniel, “*Bakassi Case: Challenges of Case Management of International Litigation*” In Edwin Egede & Mark Igiehon, “*The Bakassi Dispute and the International Court of Justice: Continuing Challenges*” (Routledge, December 2019) at 15-16.

³³⁸ The New Humanitarian, “Focus on Nigeria's response to ICJ ruling on Bakassi Peninsula” (15 October 2002) Online: < <https://www.thenewhumanitarian.org/feature/2002/10/15/focus-nigerias-response-icj-ruling-bakassi-peninsula> > accessed on 17 March 2024.

³³⁹ Daniel, *supra* note 337.

³⁴⁰ Constance Johnson, “Cameroon; Nigeria: Bakassi Peninsula Transition Completed” (Library of Congress, 23 August 2013) Online: < <https://www.loc.gov/item/global-legal-monitor/2013-08-23/cameroon-nigeria-bakassi-peninsula-transition-completed/> > accessed on 18 March 2024.

³⁴¹ *Ibid.*

³⁴² *Ibid.*

³⁴³ *Ibid.*

³⁴⁴ International Court of Justice (ICJ), “*Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea intervening)*” Online: < <https://www.icj-cij.org/case/94> > accessed 1 June 2024.

³⁴⁵ *Ibid.*

³⁴⁶ *Ibid.*

by virtue of international law.³⁴⁷ It further contended that Nigeria had violated the fundamental principle of respect for frontiers inherited from colonization (*uti possidetis juris*³⁴⁸), as well as other rules of conventional and customary international law, and that Nigeria's international responsibility was invoked.³⁴⁹ Cameroon also requested the Court to proceed to extend the course of its maritime boundary with Nigeria up to the limit of the maritime zone which international law placed under their respective jurisdictions.³⁵⁰

On 6 June 1994, Cameroon filed in the Registry an additional application "for the purpose of extending the subject of the dispute" to a further dispute, described as relating essentially "to the question of sovereignty over part of the territory of Cameroon in the area of Lake Chad".³⁵¹ Whilst it requested the Court to specify definitively the frontier between Cameroon and Nigeria from Lake Chad to the sea and the application was treated as an amendment to the initial Application.³⁵² After Nigeria had raised certain preliminary objections with respect to the Court's jurisdiction amongst other issues, Cameroon referred to the "grave incidents which had taken place between the forces of the Parties in the Bakassi Peninsula since 3 February 1996", it also asked the Court to indicate provisional measures.³⁵³ By an Order dated 15 March 1996, the Court indicated several provisional measures aimed principally at putting an end to the hostilities.³⁵⁴

The Court held hearings from 2 to 11 March 1998 on the preliminary objections on jurisdiction of the Court raised by Nigeria.³⁵⁵ In its Judgment of 11 June 1998, the Court found that it had jurisdiction to adjudicate upon the merits of the dispute and that Cameroon's requests were admissible.³⁵⁶ The Court rejected seven of the preliminary objections raised by Nigeria and declared that, as the eighth did not have an exclusively preliminary character, it should be settled

³⁴⁷ *Ibid.*

³⁴⁸ *Uti possidetis juris* is a principle in international law that ensures the stability of borders by maintaining the territorial boundaries existing at the time of independence. The term, which translates to "as you possess under law," was originally used in Roman law but has been adapted to modern international law to address territorial disputes following decolonization.

³⁴⁹ International Court of Justice (ICJ), "*Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea intervening)*" Online: < <https://www.icj-cij.org/case/94> > accessed 1 June 2024.

³⁵⁰ *Ibid* at para 1.

³⁵¹ *Ibid* at para 1.

³⁵² *Ibid* at para 1.

³⁵³ *Ibid* at para 2.

³⁵⁴ *Ibid* at para 2.

³⁵⁵ *Ibid* at para 2.

³⁵⁶ *Ibid* at para 2.

during the proceedings on the merits.³⁵⁷ Nigeria filed its Counter-Memorial, including counterclaims, within the time-limit extended by the Court.³⁵⁸

On 30 June 1999, the Court adopted an Order declaring Nigeria's counterclaims admissible, and fixing 4 April 2000 as the time-limit for Cameroon's reply and 4 January 2001 Nigeria's rejoinder.³⁵⁹ In its Order, the Court also reserved Cameroon's right to present its views on the Nigerian whilst the reply and the rejoinder were duly filed within the time-limits so fixed. In January 2001, Cameroon informed the Court that it wished to present its views in writing a second time on Nigeria's counterclaims.³⁶⁰ As Nigeria had no objection to that request, the Court authorized the presentation by Cameroon of an additional pleading relating exclusively to the counterclaims submitted by Nigeria.³⁶¹

On 30 June 1999, the Republic of Equatorial Guinea filed an application for permission to intervene in the case.³⁶² Each of the two Parties having filed its written observations on that Application and Equatorial Guinea having informed the Court of its views with respect to them, the Court, by Order of 21 October 1999, authorized Equatorial Guinea to intervene in the case.³⁶³ The authorization was made pursuant to Article 62 of the Statute, to the extent, in the manner and for the purposes set out in its application.³⁶⁴ Equatorial Guinea filed a written statement and each of the Parties filed written observations on the latter within the time-limits fixed by the Court, with public hearings on the merits were held from 18 February to 21 March 2002.³⁶⁵

In its judgment of 10 October 2002, the Court determined as follows the course of the boundary, from north to south, between Cameroon and Nigeria.³⁶⁶ In the Lake Chad area, the Court decided that the boundary was delimited by the Thomson-Marchand Declaration of 1929-1930, as incorporated in the Henderson-Fleuriau Exchange of Notes of 1931 (between Great Britain and France).³⁶⁷ It found that the boundary started in the Lake from the Cameroon-Nigeria-Chad tripoint (whose co-ordinates it defined), and followed a straight line to the mouth of the River Ebeji as it

³⁵⁷ *Ibid* at para 4.

³⁵⁸ *Ibid* at para 4.

³⁵⁹ *Ibid* at para 4.

³⁶⁰ *Ibid* at para 4.

³⁶¹ *Ibid* at para 4.

³⁶² *Ibid* at para 5.

³⁶³ *Ibid* at para 5.

³⁶⁴ *Ibid* at para 5.

³⁶⁵ *Ibid* at para 5.

³⁶⁶ *Ibid* at para 6.

³⁶⁷ *Ibid* at para 6.

was in 1931 (whose coordinates it also defined).³⁶⁸ Between Lake Chad and the Bakassi Peninsula, the Court confirmed that the boundary was delimited by the following instruments.³⁶⁹ From the point where the River Ebeji bifurcated as far as Tamnyar Peak, by the Thomson-Marchand Declaration of 1929-1930 (paras. 2-60), as incorporated in the Henderson-Fleuriau Exchange of Notes of 1931.³⁷⁰ From Tamnyar Peak to pillar 64 referred to in Article XII of the Anglo- German Agreement of 12 April 1913, by the British Order in Council of 2 August 1946; and from pillar 64 to the Bakassi Peninsula, by the Anglo-German Agreements of 11 March and 12 April 1913.³⁷¹

The Court examined point by point seventeen sectors of the land boundary and specified for each one how the above-mentioned instruments were to be interpreted.³⁷² In Bakassi, the Court decided that the boundary was delimited by the Anglo-German Agreement of 11 March 1913 (Arts. XVIII-XX) and that sovereignty over the Bakassi Peninsula lay with Cameroon.³⁷³ It decided that in that area the boundary followed the ‘thalweg’ of the River Akpakorum (Akwayafe), dividing the Mangrove Islands near Ikang in the way shown on map TSGS 2240, as far as a straight line joining Bakassi Point and King Point.³⁷⁴ As regards the maritime boundary, the Court, having established that it had jurisdiction to address that aspect of the case — which Nigeria had disputed —, fixed the course of the boundary between the two States’ maritime areas.³⁷⁵

In its Judgment the Court requested Nigeria, expeditiously and without condition, to withdraw its administration and military or police forces from the area of Lake Chad falling within Cameroonian sovereignty and from the Bakassi Peninsula.³⁷⁶ It also requested Cameroon expeditiously and without condition to withdraw any administration or military or police forces which might be present along the land boundary from Lake Chad to the Bakassi Peninsula on territories which, pursuant to the Judgment, fell within the sovereignty of Nigeria.³⁷⁷ The latter had the same obligation regarding territories in that area which fell within the sovereignty of Cameroon.³⁷⁸ The Court took note of Cameroon’s undertaking, given at the hearings, to “continue

³⁶⁸ *Ibid* at para 6.

³⁶⁹ *Ibid* at para 6.

³⁷⁰ *Ibid* at para 6.

³⁷¹ *Ibid* at para 6.

³⁷² *Ibid* at para 6.

³⁷³ *Ibid* at para 6.

³⁷⁴ *Ibid* at para 6.

³⁷⁵ *Ibid* at para 7.

³⁷⁶ *Ibid* at para 7.

³⁷⁷ *Ibid* at para 7.

³⁷⁸ *Ibid* at para 7.

to afford protection to Nigerians living in the Bakassi peninsula and in the Lake Chad area”. Finally, the Court rejected Cameroon’s submissions regarding the State responsibility of Nigeria, as well as Nigeria’s counterclaims.

Thus, the October 10, 2002, landmark judgment by the ICJ awarding the Bakassi Peninsula to Cameroon³⁷⁹ was based on historical treaties and maps, particularly the Anglo-German Agreement of 1913. The decision underscored the importance of peaceful resolution and adherence to international law in territorial disputes.³⁸⁰ The Court ruled in favor of Cameroon, affirming its sovereignty over the Bakassi Peninsula.³⁸¹ Nigeria was mandated to withdraw its administration, military, and police forces from the region.³⁸² Nigeria initially resisted the ruling, citing the cultural and historical ties of the Bakassi people to Nigeria.³⁸³

Despite initial resistance, Nigeria eventually complied with the ICJ ruling, formally handing over the Bakassi Peninsula to Cameroon on August 14, 2008.³⁸⁴ This compliance was facilitated by the Cameroon-Nigeria Mixed Commission, which oversaw the peaceful transition and demarcation of boundaries.³⁸⁵ As stated earlier this ruling had direct implications for Nigeria’s offshore renewable energy such as providing clear jurisdictional boundaries essential for the exploration and management of offshore energy resources.³⁸⁶ This clarity is crucial for legal and regulatory frameworks governing offshore renewable energy projects. As clear jurisdictional boundaries enable the formulation of precise and effective regulatory frameworks, facilitating smoother implementation of offshore renewable energy projects.

Additionally, the ruling influenced how Nigeria approaches resource management in disputed territories.³⁸⁷ By establishing clear boundaries, Nigeria can now focus on developing offshore renewable energy projects within its delineated maritime zones without legal ambiguities.

³⁷⁹ EE Aloba, John Adoga James & SP Obaji, “The ICJ’s Decision on Bakassi Peninsula in Retrospect: A True Evaluation of the History, Issues and Critique of the Judgement” (October 2016) 6:10 *Intl J Humanities & Social Sciences* at 108 -113.

³⁸⁰ Aloysius-Michaels Okolie, “Nigeria and Her Immediate Neighbours: A Critical Analysis of ICJ Ruling over Bakassi Peninsula” (2004) 2:3 *Afr J Pol & Admin Stud* at 10-30 Online: < <https://www.ajpasebsu.org.ng/2004/05/nigeria-and-her-immediate-neighbours-a-critical-analysis-of-international-court-of-justice-ruling-over-bakassi-peninsula/>> accessed 15 May 2024.

³⁸¹ The New Humanitarian, “Focus on Nigeria’s response to ICJ ruling on Bakassi Peninsula” (15 October 2002) Online:< <https://www.thenewhumanitarian.org/feature/2002/10/15/focus-nigerias-response-icj-ruling-bakassi-peninsula>> accessed on 17 March 2024.

³⁸² *Ibid.*

³⁸³ International Court of Justice (ICJ), “*Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea intervening)*”, Online: < <https://www.icj-cij.org/case/94> > accessed 1 June 2024.

³⁸⁴ *Ibid.*

³⁸⁵ Aloysius-Michaels Okolie, *supra* note 380.

³⁸⁶ *Ibid.*

³⁸⁷ Bayo Ojo, “*Resolution of International Disputes through Preventive Diplomacy by the United Nations: Case Study of the Cameroon v Nigeria case*” In Edwin Egede & Mark Iggehon, “*The Bakassi Dispute and the International Court of Justice: Continuing Challenges*”, (Routledge, December 2019) at 50-100.

It also promoted regional cooperation, which was evident from the resolution and compliance with the ICJ ruling.³⁸⁸ This spirit of cooperation is vital for joint initiatives in offshore renewable energy projects, where shared resources and collaborative efforts can lead to more efficient and sustainable energy solutions.³⁸⁹ Thus, promoting joint exploitation agreements for offshore energy resources to optimize the benefits of shared resources within ORE.

The Bakassi Peninsula case underscores the importance of legal clarity and regional cooperation in managing offshore renewable energy resources. Nigeria's compliance with the ICJ ruling and subsequent regional collaborations provide a framework for sustainable development and governance of offshore energy projects.³⁹⁰ Addressing the challenges of governance and infrastructure development, while leveraging opportunities for joint resource management regionally, will be key to Nigeria's success in the ORE sector.

3.3 Role of Regional Organizations (African Union and ECOWAS) in Energy Governance

Regional organizations such as the African Union (AU) and the Economic Community of West African States (ECOWAS) play a pivotal role in shaping the energy governance landscape in Africa.³⁹¹ Their involvement is crucial in promoting regional cooperation, harmonizing policies, and fostering sustainable development in the energy sector, including offshore renewable energy.³⁹²

3.3.1 African Union (AU)

The AU coordinates efforts among member states to develop and implement policies that promote energy security and sustainability. This includes providing technical assistance, capacity building, and facilitating access to funding for renewable energy projects. Through its various directorates and units, such as the Directorate of Infrastructure and Energy, the AU works to ensure

³⁸⁸ Constance Johnson, "Cameroon; Nigeria: Bakassi Peninsula Transition Completed" (Library of Congress, 23 August 2013) Online: <<https://www.loc.gov/item/global-legal-monitor/2013-08-23/cameroon-nigeria-bakassi-peninsula-transition-completed/>> accessed on 18 March 2024.

³⁸⁹ Edwin Egede & Mark Igiehon, "*The Bakassi Dispute and the International Court of Justice: Continuing Challenges*" (Routledge, December 2019) pp 11-12.

³⁹⁰ Ojo *supra* note 387.

³⁹¹ Opeyemi Akinyemi et al, *supra* note 320.

³⁹² *Ibid.*

that energy policies are aligned with regional and international standards, fostering a cohesive approach to energy governance.

3.3.1.1 Policy Frameworks and Initiatives of the African Union Towards the Promotion of Offshore Renewable Energy

3.3.1.1.1 The AU's Agenda 2063³⁹³

This agenda serves as a framework for transforming Africa into a global powerhouse through sustainable and inclusive development over a 50-year period.³⁹⁴ One of its key goals is to promote the sustainable exploitation of natural resources, including energy resources, to ensure economic growth and environmental sustainability.³⁹⁵ The agenda is driven by seven aspirations, including a prosperous Africa based on inclusive growth and sustainable development, and an Africa of good governance, democracy, respect for human rights, justice, and the rule of law.³⁹⁶

The African Union Commission (AUC) plays a central role in coordinating and implementing Agenda 2063, whilst it works with member states, regional economic communities (RECs), its partnerships and stakeholder engagement initiatives.³⁹⁷ The Member states and RECs are responsible for integrating Agenda 2063 into their national and regional development plans.³⁹⁸ This decentralized approach ensures that the agenda's goals are tailored to the specific contexts of different regions and countries.³⁹⁹ The AU engages with a wide range of partners, including international organizations, civil society, the private sector, and academia.⁴⁰⁰ These partnerships are crucial for mobilizing resources, sharing knowledge, and fostering innovation.⁴⁰¹ Thus, the AU has established these frameworks as monitoring and evaluation mechanisms to track the progress towards the achievement of the Agenda 2063 goals,⁴⁰² through periodic progress reports, a continental results framework and the African Peer Review Mechanism.⁴⁰³

³⁹³ African Union, "Agenda 2063: Overview" Online: < <https://au.int/en/agenda2063/overview> > accessed on 20 May 2024.

³⁹⁴ *Ibid.*

³⁹⁵ African Union, "Agenda 2063: Framework Document, Goals & Priority Areas of Agenda 2063." (September 2015) at 101-107 Online:< https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf > accessed on 20 May 2024.

³⁹⁶ *Ibid.*

³⁹⁷ *Ibid* at 117-129.

³⁹⁸ *Ibid.*

³⁹⁹ *Ibid.*

⁴⁰⁰ *Ibid.*

⁴⁰¹ *Ibid.*

⁴⁰² *Ibid.*

⁴⁰³ *Ibid.*

This Agenda is crucial for the development of offshore renewable energy projects that often span multiple jurisdictions, by promoting regional integration via creating a conducive environment for cross-border offshore renewable energy initiatives.⁴⁰⁴ Especially from initiatives such as the African Continental Free Trade Area (AfCFTA), which aims to create a single continental market for goods and services, allowing free movement of business persons and investments, thereby accelerating intra-African trade.⁴⁰⁵ This may foster harmonized regulatory frameworks and policies across member states to facilitate the development of common standards and best practices for ORE developments, ensuring that projects are sustainable and environmentally friendly.⁴⁰⁶ This is key to addressing the fragmented regulatory landscape that currently hinders ORE development in Africa.⁴⁰⁷ Also, the Agenda fosters international cooperation, which can be leveraged to attract global investments and technical assistance to Nigeria.⁴⁰⁸ Engaging with international development partners and financial institutions can provide Nigeria with access to additional resources and expertise.⁴⁰⁹

Furthermore, the Agenda emphasizes the importance of human capital development, research and innovation which may provide support to Nigeria's ORE development efforts. By providing training and capacity building programs tailored to the needs of the ORE sector such as technical training for local policymakers and local engineers. The attendant collaborative research initiatives can address specific challenges faced by the Nigerian ORE sector, drive technological advancements and provide access to cutting-edge technologies.⁴¹⁰

Additionally, the Agenda promotes environmental and social governance as it aligns with the United Nations Sustainable Development Goals (SDGs), particularly those related to affordable and clean energy (SDG 7) and climate action (SDG 13).⁴¹¹ This alignment could ensure that ORE projects in Nigeria contribute to broader global sustainability efforts.⁴¹² This would emphasize the importance of inclusive development by ensuring that local communities benefit

⁴⁰⁴ *Ibid.*

⁴⁰⁵ *Ibid.*

⁴⁰⁶ *Ibid.*

⁴⁰⁷ *Ibid.*

⁴⁰⁸ African Union, "African Union Climate Change and Resilient Development Strategy and Action Plan (2022-2032)" at 69-73 Online: <https://au.int/sites/default/files/documents/41959-doc-CC_Strategy_and_Action_Plan_2022-2032_08_02_23_Single_Print_Ready.pdf> accessed on 20 May 2024.

⁴⁰⁹ *Ibid.*

⁴¹⁰ African Union, "Agenda 2063: Overview" Online: <<https://au.int/en/agenda2063/overview>> accessed on 20 May 2024.

⁴¹¹ African Union, "African Union Climate Change and Resilient Development Strategy and Action Plan (2022-2032)" at 69-73 Online: <https://au.int/sites/default/files/documents/41959-doc-CC_Strategy_and_Action_Plan_2022-2032_08_02_23_Single_Print_Ready.pdf> accessed on 20 May 2024.

⁴¹² *Ibid.*

from ORE projects is crucial for their success.⁴¹³ The AU can look to providing frameworks for effective community engagement and benefit-sharing mechanisms.⁴¹⁴ This may inform the ORE governance approach of member states like Nigeria to prioritize ecological integrity and public participation.

The AU's Agenda 2063 provides a framework for promoting sustainable development across Africa, whose focus may be enhanced to play a pivotal role in supporting Nigeria's offshore renewable energy governance, by promoting policy harmonization, capacity building, investment mobilization, and environmental governance. Also, leveraging the strengths of Agenda 2063 could help Nigeria overcome existing challenges and fully realize the potential of its offshore renewable energy resources.

However, there were no clear results impacting ORE in the Region that have been published. This is probably because ORE developments might still be at the early development stages in Africa.

3.3.1.1.2 The Africa Renewable Energy Initiative (AREI)⁴¹⁵

This is another significant AU initiative aimed at accelerating the adoption of renewable energy across the continent.⁴¹⁶ AREI seeks to achieve 300 GW of renewable energy capacity by 2030, whilst emphasizing the role of regional cooperation and policy harmonization in achieving this target.⁴¹⁷ Launched at the COP21 climate conference in Paris in 2015, AREI is driven by African countries to accelerate and scale up the continent's renewable energy capacity.⁴¹⁸ The initiative focuses on increasing access to clean energy, improving human well-being, and fostering sustainable development.⁴¹⁹

The initiative is structured in phases, with Phase I (2016-2020) focused on assessments, preparations, and enabling activities.⁴²⁰ Phase II (2021-2030) aims to accelerate the deployment of renewable energy projects to achieve a target of 300 GW of installed capacity by 2030.⁴²¹ AREI

⁴¹³ *Ibid.*

⁴¹⁴ *Ibid.*

⁴¹⁵ Africa Renewable Energy Initiative, "Information and Strategy" Online: < <https://www.arei.info/menusrep1.php?type=rub4&langue=en> > accessed on 25 May 2024.

⁴¹⁶ *Ibid.*

⁴¹⁷ *Ibid.*

⁴¹⁸ African Union, "Energy" Online: <<https://au.int/en/directorates/energy>> accessed on 25 May 2024.

⁴¹⁹ *Ibid.*

⁴²⁰ Africa Renewable Energy Initiative "Information", Online: <<https://www.arei.info/eng>> accessed on 25 May 2024.

⁴²¹ *Ibid.*

has achieved its Phase I goal of installing 10 GW of renewable energy capacity by 2020, whilst it's focused on scaling up to meet the 2030 target of 300 GW.⁴²² The achieved phase I milestone was accomplished through various projects focusing on solar, wind, and other renewable sources spread across multiple countries.⁴²³ Some notable projects include large-scale solar farms and wind power installations in West, East, and Southern Africa.⁴²⁴ Various projects are underway across different regions in Africa, spanning solar and wind power.⁴²⁵ The initiative emphasizes integrated solutions that improve access to clean energy, enhance human well-being, and support sustainable development.⁴²⁶

AREI is led by a vast range of partnerships, board of directors and multilaterals – the board is composed of principal members each representing one of the five sub regions of Africa and participants representing the permanent observers from France, European Union, African Development Bank and African Union.⁴²⁷ The partnerships include the African Union Commission, the New Partnership for Africa's Development (NEPAD) Agency, the African Development Bank (AfDB), the UN Environment Programme (UNEP), and the International Renewable Energy Agency (IRENA).⁴²⁸ This multi-stakeholder leadership ensures diverse and inclusive oversight, whilst it seeks to leverage significant financial resources to support the projects, including \$5 billion in public and concessional finance to catalyze further investments of up to \$15 billion, aiming for a total investment of at least \$20 billion pre-2020.⁴²⁹

As the AREI promotes regional cooperation and policy harmonization across African nations towards renewable energy, for Nigeria, this means aligning its national policies with regional frameworks to create a conducive environment for offshore renewable energy investments.⁴³⁰ Harmonized policies can streamline regulatory processes, reduce investment risks, and facilitate cross-border energy projects.⁴³¹ AREI encourages the formation of Public-Private

⁴²² *Ibid.*

⁴²³ *Ibid.*

⁴²⁴ *Ibid.*

⁴²⁵ *Ibid.*

⁴²⁶ *Ibid.*

⁴²⁷ Africa Renewable Energy Initiative “Board”, Online: <<https://www.arei.info/list1-999.php?type=rub4ssr5&langue=an>> accessed on 25 May 2024.

⁴²⁸ Africa Renewable Energy Initiative, “Institutional Institutions” Online: <<https://www.arei.info/partnerslist.php>> accessed on 25 May 2024.

⁴²⁹ United Nations Climate Change, “Africa Renewable Energy Initiative - Increasing Renewable Energy Capacity on the African Continent” (25 November 2015) Online: <<https://unfccc.int/news/africa-renewable-energy-initiative-increasing-renewable-energy-capacity-on-the-african-continent>> accessed 25 May 2024.

⁴³⁰ Africa Renewable Energy Initiative, “Information and Strategy” Online: <<https://www.arei.info/menusrep1.php?type=rub4&langue=an>> accessed on 25 May 2024.

⁴³¹ *Ibid.*

Partnerships (PPPs) to mobilize resources and expertise for renewable energy projects.⁴³² Nigeria could benefit from these partnerships by attracting investments from international and regional private sector entities, thereby boosting its offshore renewable energy capacity.⁴³³ Moreso, through AREI Nigeria could access international funding and concessional finance needed to develop its offshore renewable energy infrastructure.⁴³⁴ This financial support could help overcome the high initial capital costs and attract private sector investments.⁴³⁵ By aligning with AREI's objectives and leveraging its resources, Nigeria could significantly advance its offshore renewable energy ambitions, contributing to sustainable development and energy security.

3.3.2 Economic Community of West African States (ECOWAS)

ECOWAS plays a critical role in harmonizing energy policies among its member states to create a unified regional energy market, by developing appropriate regional policies with a focus on renewable energy development.⁴³⁶ For instance, the ECOWAS Renewable Energy Policy (EREP) aims to achieve universal access to electricity by 2030 and increase the share of renewable energy in the energy mix to 48% by 2030.⁴³⁷ Whilst the ECOWAS Center for Renewable Energy and Energy Efficiency (ECREEE) is instrumental in promoting renewable energy and energy efficiency.⁴³⁸ ECREEE supports the development and implementation of regional renewable energy policies, provides technical assistance, and facilitates capacity-building programs.⁴³⁹

ECOWAS has also initiated several projects to enhance regional energy infrastructure and integration. These projects include the West African Power Pool (WAPP), which aims to create a unified electricity market by connecting the national grids of member states.⁴⁴⁰ WAPP facilitates the exchange of electricity across borders, improving energy security and access in the region.⁴⁴¹ Whilst the ECOWAS Regional Electricity Regulatory Authority (ERERA) oversees the regional

⁴³² *Ibid.*

⁴³³ *Ibid.*

⁴³⁴ United Nations Climate Change, "Africa Renewable Energy Initiative - Increasing Renewable Energy Capacity on the African Continent" (25 November 2015) Online: <<https://unfccc.int/news/africa-renewable-energy-initiative-increasing-renewable-energy-capacity-on-the-african-continent>> accessed 25 May 2024.

⁴³⁵ *Ibid.*

⁴³⁶ ECOWAS, "ECOWAS Vision 2050" (Abuja: ECOWAS, June 2022) at 30 Online: < <https://www.ecowas.int/wp-content/uploads/2022/09/Vision-2050-EN.pdf> > accessed 26 May 2024.

⁴³⁷ ECOWAS Center for Renewable Energy and Energy Efficiency, "ECOWAS Renewable Energy Policy (EREP)" (ECREEE, September 2012) pp 10-15 Online: < https://www.agora-parl.org/sites/default/files/agora-documents/151012_ecowas_renewable_energy_policy_final.pdf > accessed on 26 May 2024.

⁴³⁸ ECOWAS Center for Renewable Energy and Energy Efficiency, "History" Online: < <https://www.ecreee.org/history/> > accessed on 26 May 2024.

⁴³⁹ *Ibid.*

⁴⁴⁰ ECOWAS, "About West African Power Pool" Online: < <https://www.ecowapp.org/en/content/creation-wapp> > accessed on 26 May 2024.

⁴⁴¹ *Ibid.*

electricity market, ensuring compliance with regulatory frameworks and promoting investments in the energy sector.⁴⁴² This regulatory oversight is essential for fostering a stable and attractive environment for offshore renewable energy investments.⁴⁴³ Apart from these, there are other policies discussed in subsequent sub sections, that may hold significance for offshore renewable energy governance in the region.

3.3.2.1 The ECOWAS Energy Protocol 2003

The ECOWAS Energy Protocol, signed in 2003, aims to promote long-term cooperation in the energy sector among ECOWAS member states.⁴⁴⁴ It is designed to facilitate increased investment, enhance energy trade within the region, and ensure sustainable development of energy resources.⁴⁴⁵ The Protocol incorporates principles of non-discrimination, transparency, and the protection of investments in the energy sector.⁴⁴⁶ The Protocol establishes legal and institutional mechanisms for the harmonization of energy policies and regulations across member states.⁴⁴⁷ This includes provisions for dispute resolution, investment protection, and cooperation in research and development.⁴⁴⁸ The ECOWAS Regional Electricity Regulatory Authority (ERERA) plays a central role in overseeing the implementation of the Protocol, ensuring compliance, and facilitating regional energy trade.⁴⁴⁹

The Protocol ensures the protection of investments in the energy sector by guaranteeing sovereignty over energy resources through fair and equitable treatment, protection against expropriation, and the right to freely transfer investments and returns.⁴⁵⁰ It encourages the creation of a favorable investment climate by promoting transparency and non-discriminatory practices.⁴⁵¹ The Protocol also facilitates the free transit of energy materials and products across borders, reducing barriers to energy trade within the ECOWAS region.⁴⁵² It mandates member states to modernize and develop energy transport facilities, fostering regional interconnectivity and

⁴⁴² Mohammed Ibn Chambas, “The Role of ECOWAS in Achieving the Economic Integration of West Africa” (Washington, D.C: Wilson Center, October 2007) at 2-12. Online: < <https://www.wilsoncenter.org/sites/default/files/media/documents/publication/DrChambas%2527remarks1.pdf> > accessed on 26 May 2024.

⁴⁴³ *Ibid.*

⁴⁴⁴ ECOWAS Energy Protocol, A/P4/1/03, 2003, at art 2.

⁴⁴⁵ *Ibid.*

⁴⁴⁶ *Ibid.*, at Ch III.

⁴⁴⁷ *Ibid.*, at Ch VII.

⁴⁴⁸ *Ibid.*, at Ch III & V.

⁴⁴⁹ ECOWAS, “ECOWAS Regional Electricity Regulatory Authority (ERERA)” Online: < https://www.ecowas.int/special_agency/ecowas-regional-electricity-regulatory-authority-erera/ > accessed on 27 May 2024.

⁴⁵⁰ ECOWAS Energy Protocol, A/P4/1/03, 2003 at art 18.

⁴⁵¹ *Ibid.*

⁴⁵² *Ibid.* at Ch II.

integration.⁴⁵³ Member states are required to alleviate market distortions and barriers to competition in the energy sector.⁴⁵⁴ This includes enforcing laws against anti-competitive conduct and ensuring non-discriminatory access to power generation and transmission facilities.⁴⁵⁵ Whilst also providing for a collaborative framework as the Protocol allows for technology transfer and technical assistance among member states.⁴⁵⁶ Nigeria could benefit from shared expertise, training programs, and technical support to enhance its capabilities in managing and regulating offshore renewable energy projects.⁴⁵⁷

Another key provision of the Protocol is its emphasis on the need for minimizing environmental impacts throughout the energy cycle.⁴⁵⁸ It thereby encourages member states to adopt and enforce regulations that protect the environment and promote sustainable energy practices.⁴⁵⁹ This includes a fuller reflection of environmental costs and benefits throughout the energy cycle, developing and using renewable energy sources as well as environmentally sound and economically efficient energy policies.⁴⁶⁰ This could ensure that offshore renewable energy projects are environmentally sustainable and socially responsible, mitigating potential negative impacts on marine ecosystems and local communities.⁴⁶¹ This as well as the protocol's emphasis on regulatory harmonization could help Nigeria align its policies with regional standards, creating a more predictable and stable regulatory environment for offshore renewable energy projects.⁴⁶² In addition, the protocol's provisions on environmental protection would encourage Nigeria to adopt best practices in environmental impact assessments and sustainable energy development.⁴⁶³

The ECOWAS Energy Protocol is governed by the ECOWAS Commission, which oversees the implementation and monitoring of the Protocol's provisions.⁴⁶⁴ The West African Power Pool (WAPP) also plays a crucial role in operationalizing the Protocol by coordinating the development of regional electricity markets and infrastructure projects.⁴⁶⁵ It also supports integrating national

⁴⁵³ *Ibid.*

⁴⁵⁴ *Ibid.*

⁴⁵⁵ *Ibid.*

⁴⁵⁶ *Ibid.*

⁴⁵⁷ *Ibid.*

⁴⁵⁸ *Ibid* at art 19.

⁴⁵⁹ *Ibid.*

⁴⁶⁰ *Ibid.*

⁴⁶¹ *Ibid.*

⁴⁶² *Ibid.*

⁴⁶³ *Ibid.*

⁴⁶⁴ *Ibid* at art 31.

⁴⁶⁵ *Ibid.*

power systems into a unified regional electricity market.⁴⁶⁶ By facilitating cross-border electricity trade and coordinating the development of power generation and transmission infrastructure, WAPP supports the efficient utilization of renewable energy resources across the region.⁴⁶⁷ This would promote market access and trade through the free transit of energy materials and products, which could help Nigeria integrate its offshore renewable energy projects into the regional energy market.⁴⁶⁸

3.3.2.2 The ECOWAS White Paper on Regional Policy for Increasing Access to Energy Services 2006

The ECOWAS White Paper on Regional Policy for Increasing Access to Energy Services for Populations in Rural and Peri-Urban Areas was adopted in 2006 flowing from the Decision A/DEC.24/01/06.⁴⁶⁹ This policy aims to address the energy access challenges faced by the ECOWAS region, focusing on increasing the availability of modern energy services to support economic development and poverty reduction.⁴⁷⁰

The primary objective is to provide at least half of the rural and peri-urban populations with access to modern energy services by 2015.⁴⁷¹ This includes improving electricity access, clean cooking solutions, and promoting renewable energy sources.⁴⁷² The policy is to further align with the broader goals of the Millennium Development Goals (MDGs), aiming to reduce poverty, improve health, and promote environmental sustainability through better energy access.⁴⁷³ By creating a stable and predictable policy environment, the ECOWAS White Paper helps attract both public and private investments into the energy sector.⁴⁷⁴ This is vital for financing the high capital costs associated with ORE projects.

⁴⁶⁶ *Ibid.*

⁴⁶⁷ *Ibid.*

⁴⁶⁸ *Ibid.*

⁴⁶⁹ Decision A/Dec.24/01/06 Adopting an ECOWAS/UEMOA Regional Policy on Access to Energy Services for Populations in Rural and Peri-Urban Areas for Poverty Reduction in Line with Achieving the MDGS in Member States, 12 January 2006.

⁴⁷⁰ *Ibid* at Art 1.

⁴⁷¹ *Ibid* at art 3.

⁴⁷² ECOWAS, “White Paper for a Regional Policy” (2006) at 26 Online: < <https://www.undp.org/sites/g/files/zskgke326/files/publications/>> accessed on 26 May 2024.

⁴⁷³ *Ibid* at 10.

⁴⁷⁴ *Ibid* at 46-53; Decision A/Dec.24/01/06 Adopting an ECOWAS/UEMOA Regional Policy on Access to Energy Services for Populations in Rural and Peri-Urban Areas for Poverty Reduction in Line with Achieving the MDGS in Member States, 12 January 2006, at art 4.

The governance mechanisms envisaged by the paper cuts across regional coordination, institutional frameworks and stakeholder engagement.⁴⁷⁵ To achieve this, the ECOWAS Commission, along with member states, are responsible for the implementation and monitoring of the policy.⁴⁷⁶ This includes establishing national and regional targets, developing action plans, and coordinating efforts across the region.⁴⁷⁷

For institutional frameworks, the policy promotes the creation of dedicated institutions and mechanisms at both national and regional levels to oversee the implementation of energy projects.⁴⁷⁸ To promote stakeholder engagement it aims to promote active participation from a broad range of stakeholders, including governments, private sector, civil society, and international partners, is emphasized to ensure comprehensive and effective implementation.⁴⁷⁹

The ECOWAS White Paper provides a framework for regional cooperation, which is essential for the development of ORE projects.⁴⁸⁰ By harmonizing policies and regulatory frameworks across member states, the policy facilitates cross-border energy projects and investments.⁴⁸¹ The policy explicitly supports the use of locally available renewable resources for electricity generation as it explores the challenges to its development.⁴⁸² Thus, regional collaboration under the policy encourages knowledge sharing and the dissemination of best practices that would support local development of renewable resources.⁴⁸³ This could help Nigeria adopt advanced technologies and innovative solutions for ORE development by ensuring that Nigeria can leverage its offshore wind, wave, and tidal energy potential as part of the broader regional strategy.⁴⁸⁴ Since the policy also promotes the establishment of regional funding

⁴⁷⁵ECOWAS, “White Paper for a Regional Policy”, (2006) at 36-43 Online: < https://www.undp.org/sites/g/files/zskgke326/files/publications/ECOWAS%20WhitePaper%20for%20a%20RegionalPolicy_2005.pdf> accessed on 26 May 2024.

⁴⁷⁶ *Ibid.*

⁴⁷⁷ *Ibid.*

⁴⁷⁸ *Ibid.*

⁴⁷⁹ *Ibid.*; Decision A/Dec.24/01/06 Adopting an ECOWAS/UEMOA Regional Policy on Access to Energy Services for Populations in Rural and Peri-Urban Areas for Poverty Reduction in Line with Achieving the MDGS in Member States, 12 January 2006 at art 4.

⁴⁸⁰ Decision A/Dec.24/01/06 Adopting an ECOWAS/UEMOA Regional Policy on Access to Energy Services for Populations in Rural and Peri-Urban Areas for Poverty Reduction in Line with Achieving the MDGS in Member States, 12 January 2006 at art 2.

⁴⁸¹ *Ibid.*

⁴⁸²ECOWAS, “White Paper for a Regional Policy”, (2006) at 26 Online: < <https://www.undp.org/sites/g/files/zskgke326/files/publications/>> accessed on 26 May 2024.

⁴⁸³ Decision A/Dec.24/01/06 Adopting an ECOWAS/UEMOA Regional Policy on Access to Energy Services for Populations in Rural and Peri-Urban Areas for Poverty Reduction in Line with Achieving the MDGS in Member States, 12 January 2006, Art 2.

⁴⁸⁴ *Ibid.*

mechanisms and the mobilization of international financial support,⁴⁸⁵ Nigeria might gain access to necessary funds for the development of its offshore renewable energy infrastructure.

Although, the Paper plays a role in shaping the governance landscape for renewable energy in West Africa, through its emphasis on policy harmonization, capacity building, and financial mobilization;⁴⁸⁶ several challenges need to be addressed. Despite the ambitious goals, the actual implementation of the policy has faced several challenges, including limited financial resources, inadequate infrastructure, and bureaucratic hurdles.⁴⁸⁷ It lacks the effective monitoring and evaluation mechanisms that are crucial to track progress and ensure accountability.⁴⁸⁸ Strengthening these mechanisms could help to address implementation gaps and improve policy outcomes.⁴⁸⁹ Ensuring inclusive participation from all stakeholders, particularly local communities and the private sector, is essential for the success of ORE projects.⁴⁹⁰ Nigeria might then leverage this policy to advance its ORE governance and contribute to the sector and its sustainable development.⁴⁹¹

3.3.2.3 ECOWAS Program on Gender Mainstreaming in Energy Access (ECOW-GEN) 2013

The ECOWAS Program on Gender Mainstreaming in Energy Access (ECOW-GEN) is a flagship initiative of the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE).⁴⁹² Established in 2013, ECOW-GEN aims to address gender disparities in energy access and promote gender equality in energy development across the ECOWAS region.⁴⁹³ It led to the adoption of the ECOWAS Policy for Gender Mainstreaming in Energy Access in 2017, which provides a framework for integrating gender considerations into energy policies, legislative processes, and project implementation.⁴⁹⁴ It also emphasized the importance of gender-responsive budgeting, capacity building, and inclusive participation in energy decision-making.⁴⁹⁵ As the

⁴⁸⁵ *Ibid* at art 4.

⁴⁸⁶ *Ibid.*

⁴⁸⁷ ECOWAS, “White Paper for a Regional Policy”, (2006) at 24-28 Online: < <https://www.undp.org/sites/g/files/zskgke326/files/publications/>> accessed on 26 May 2024.

⁴⁸⁸ *Ibid* at 36-43.

⁴⁸⁹ *Ibid.*

⁴⁹⁰ *Ibid* at 42-43.

⁴⁹¹ *Ibid.*

⁴⁹² ECREEE, “ECOWAS Programme on Gender Mainstreaming in Energy Access (ECOW-GEN): Programme Document 2015-2019” at 7 Online: < http://www.ecowrex.org/fr/system/files/ecow-gen_programme_document_2015-2019_final_vf_en.pdf> accessed 27 May 2024.

⁴⁹³ *Ibid.*

⁴⁹⁴ *Ibid* at 10.

⁴⁹⁵ *Ibid.*

implementing body, ECREEE oversees the strategic planning, execution, and monitoring of ECOW-GEN activities.⁴⁹⁶

It collaborates with various stakeholders, including national governments, international organizations, and non-governmental organizations (NGOs).⁴⁹⁷ ECOW-GEN partners with the United Nations Industrial Development Organization (UNIDO), the African Development Bank (AfDB), and the ENERGIA International Network on Gender and Sustainable Energy, among others.⁴⁹⁸ These partnerships enhance the program's capacity to deliver on its objectives by leveraging resources, expertise, and networks.⁴⁹⁹ ECOW-GEN conducts workshops, training sessions, and seminars to build the capacity of stakeholders, including policymakers, project developers, and community leaders, on gender mainstreaming in energy access.⁵⁰⁰ The program provides technical assistance and small grants to projects that promote gender equality and improve energy access.⁵⁰¹ This includes support for the development of gender-sensitive energy policies and the implementation of gender-inclusive energy projects.⁵⁰²

By promoting the integration of gender considerations into energy policies, ECOW-GEN could ensure that Nigeria's offshore renewable energy policies are inclusive and equitable.⁵⁰³ This involves advocating for policies that address the specific needs and contributions of both women and men in the energy sector.⁵⁰⁴ The program's emphasis on gender-sensitive legislative drafting could help create a legal environment that supports the participation of women in offshore renewable energy projects, from planning to implementation and management.⁵⁰⁵ ECOW-GEN's capacity-building initiatives could enhance the knowledge and skills of Nigerian policymakers and regulators in gender mainstreaming.⁵⁰⁶ This could lead to more effective and inclusive governance of offshore renewable energy resources.⁵⁰⁷

By supporting the development of institutional frameworks that promote gender equality, ECOW-GEN could contribute to more robust and inclusive energy governance structures in

⁴⁹⁶ *Ibid* at 21.

⁴⁹⁷ *Ibid* at 18.

⁴⁹⁸ *Ibid*.

⁴⁹⁹ *Ibid*.

⁵⁰⁰ *Ibid* at 22-44.

⁵⁰¹ *Ibid*.

⁵⁰² *Ibid*.

⁵⁰³ *Ibid* at 37-40.

⁵⁰⁴ *Ibid*.

⁵⁰⁵ *Ibid*.

⁵⁰⁶ *Ibid* at 41.

⁵⁰⁷ *Ibid*.

Nigeria.⁵⁰⁸ ECOW-GEN’s technical and financial support for gender-inclusive energy projects could empower women entrepreneurs and stakeholders in the offshore renewable energy sector.⁵⁰⁹ This could lead to increased participation of women in the development and management of offshore energy projects.⁵¹⁰ The program’s focus on inclusive participation ensures that the voices and needs of women and marginalized groups are considered in the planning and implementation of offshore renewable energy projects.⁵¹¹ This could enhance community support and sustainability of such projects.

Despite its successes, ECOW-GEN faces challenges, they include limited funding, cultural barriers, and resistance to gender mainstreaming in traditionally male-dominated sectors.⁵¹² Addressing these challenges requires sustained advocacy, resource mobilization, and strategic partnerships.

However, the program presents opportunities to leverage international support for gender equality and energy access.⁵¹³ By addressing gender disparities and empowering women, the program enhances the sustainability and effectiveness of energy governance in Nigeria and the broader ECOWAS region.⁵¹⁴

3.3.2.4 ECOWAS Renewable Energy Policy 2015

The ECOWAS Renewable Energy Policy (EREP), adopted in 2015, is a framework aimed at increasing the adoption and integration of renewable energy across the ECOWAS member states.⁵¹⁵ This policy plays a significant role in promoting renewable energy, including offshore renewable energy (ORE), in Nigeria.⁵¹⁶ This is because each member state, including Nigeria, is required to develop National Renewable Energy Policy (NREPs) outlining specific actions,

⁵⁰⁸ *Ibid.*

⁵⁰⁹ *Ibid* at 21-44.

⁵¹⁰ *Ibid.*

⁵¹¹ *Ibid.*

⁵¹² Monica Maduekwe et al, “*Gender Equity and Mainstreaming in Renewable Energy Policies: Empowering Women in the Energy Value Chain in the Economic Community of West African States (ECOWAS)*” In D Arent & N Lee eds, “*Regional Renewable Energy – Africa*” (15 February 2019) 6 *Curr Sustainable Renewable Energy Reports* at 13–21 Online: <<https://doi.org/10.1007/s40518-019-00127-2>> accessed 28 May 2024.

⁵¹³ *Ibid.*

⁵¹⁴ *Ibid.*

⁵¹⁵ ECREEE, “ECOWAS Renewable Energy Policy (EREP)” (2012) at 10-11 Online: < https://www.agora-parl.org/sites/default/files/agora-documents/151012_ecowas_renewable_energy_policy_final.pdf> accessed on 29 May 2024.

⁵¹⁶ *Ibid.*

timelines, and resource allocations to meet the renewable energy targets.⁵¹⁷ These plans are reviewed periodically to assess progress and make necessary adjustments.⁵¹⁸

The EREP aims to achieve a minimum renewable energy share of 48% of the total electricity generation mix by 2030, with specific sub-targets for each member state.⁵¹⁹ For Nigeria, this includes significant contributions from offshore wind and other marine-based renewable energy sources.⁵²⁰ The policy is implemented through ECREEE, which provides technical support, capacity building, and policy guidance to member states.⁵²¹ ECREEE acts as the central coordinating body, ensuring that national policies align with regional goals and facilitating cross-border cooperation.⁵²² ECREEE conducts regular monitoring and evaluation of the policy's implementation which includes tracking the progress of NREPs, providing feedback, and offering technical assistance where needed to ensure that member states remain on track to achieve their targets.⁵²³

EREP also seeks to promote the harmonization of renewable energy regulations across the ECOWAS region, which has hitherto been absent.⁵²⁴ For Nigeria, this means adopting standardized regulatory frameworks through the ratification of treaties (where available) within ECOWAS that facilitate the development of offshore renewable energy projects.⁵²⁵ EREP also encourages the adoption of supportive policies such as feed-in tariffs, tax incentives, and subsidies for renewable energy projects.⁵²⁶ These policies are crucial for making offshore renewable energy projects financially viable in Nigeria.⁵²⁷ More so, harmonized policies reduce regulatory uncertainty and create a more attractive environment for investors.⁵²⁸

Furthermore, EREP supports the development of cross-border renewable energy projects, promoting regional integration and energy security.⁵²⁹ For Nigeria, this could mean collaboration

⁵¹⁷ *Ibid* at 12.

⁵¹⁸ *Ibid.*

⁵¹⁹ *Ibid* at 13.

⁵²⁰ *Ibid.*

⁵²¹ *Ibid* at 14-15.

⁵²² *Ibid.*

⁵²³ *Ibid* at 16.

⁵²⁴ *Ibid* at 39-44.

⁵²⁵ *Ibid.*

⁵²⁶ *Ibid.*

⁵²⁷ *Ibid.*

⁵²⁸ Cohn, *supra* note 335.

⁵²⁹ ECREEE, "ECOWAS Renewable Energy Policy (EREP)" (2012) at 36-37 Online: < https://www.agora-parl.org/sites/default/files/agora-documents/151012_ecowas_renewable_energy_policy_final.pdf> accessed on 29 May 2024.

with neighboring countries on large offshore wind farms or shared marine energy resources.⁵³⁰ The policy aims to create integrated regional energy markets, facilitating the trade of renewable energy across borders.⁵³¹ This integration helps optimize resource use and ensures a stable supply of renewable energy amongst member states.

By providing a framework that fosters regional cooperation and encourages NREPs, EREP addresses challenges and creates opportunities for the development of offshore renewable energy. The successful implementation of this policy could significantly contribute to Nigeria's energy security, economic development, and environmental sustainability.⁵³²

3.3.2.5 ECOWAS Masterplan for the Development of Regional Power Generation and Transmission Infrastructure 2019-2033

The ECOWAS Masterplan for the Development of Regional Power Generation and Transmission (2019-2033) represents a comprehensive strategic framework designed to enhance the power generation and transmission capabilities within the West African region.⁵³³ This master plan aims to address the increasing energy demands, facilitate regional integration, and promote the development of sustainable and renewable energy sources, including ORE.⁵³⁴ The Masterplan emphasizes the importance of a harmonized framework for the regional electricity market.⁵³⁵ This unified regulation helps in creating a predictable and stable environment for investments in renewable energy projects, including ORE.⁵³⁶

The Masterplan outlines 75 regional priority projects, including 28 transmission line projects covering approximately 22,932 km.⁵³⁷ These projects aim to enhance the regional grid's capacity to integrate renewable energy sources, including offshore wind and other ORE technologies.⁵³⁸ Thus, the total investment required for the implementation of the master plan is estimated at \$36.39 billion, with significant portions allocated for transmission infrastructure.⁵³⁹

⁵³⁰ *Ibid* at 40.

⁵³¹ *Ibid* at 49.

⁵³² Cohn, *supra* note 335.

⁵³³ ECOWAS, "ECOWAS Masterplan for the Development of Regional Power Generation and Transmission Infrastructure 2019-2033: Final Report Synthesis" (December 2018) at 4-18 Online: < https://www.ecowapp.org/sites/default/files/volume_0.pdf > accessed on 1 June 2024.

⁵³⁴ *Ibid.*

⁵³⁵ *Ibid.*

⁵³⁶ *Ibid* at 19-20.

⁵³⁷ *Ibid.*

⁵³⁸ *Ibid.*

⁵³⁹ *Ibid.*

This investment is critical for upgrading and expanding the regional grid to support the integration of renewable energy projects.⁵⁴⁰

The Masterplan includes initiatives for capacity building and technical assistance to strengthen the capabilities of regional energy stakeholders.⁵⁴¹ This includes training programs for WAPP member companies and regulatory authorities to ensure they have the necessary skills and knowledge to manage and regulate ORE projects effectively.⁵⁴² The plan also promotes the development of autonomous and local renewable energy systems, such as mini-grids and solar kits, which can complement large-scale ORE projects.⁵⁴³ Technical assistance facilities are available to support project developers in navigating regulatory requirements and securing financing.⁵⁴⁴

The emphasis on regional cooperation and integrated projects allows Nigeria to collaborate with neighboring countries on large-scale ORE initiatives.⁵⁴⁵ One example of such cooperation is the Electricity Authority of Benin and Nigerian Electric Power Authority power interconnection project, jointly financed by the African Development Bank, West African Development Bank, and ECOWAS.⁵⁴⁶ The interconnection project connected the Benin's power grid to that of Nigeria, lighting up vast areas of rural communities that were once in economic darkness.⁵⁴⁷ This kind of joint projects can leverage shared resources, reduce costs, and enhance the overall effectiveness of renewable energy developments in the region.⁵⁴⁸ Moreso, the Masterplan's focus on capacity building helps Nigerian institutions develop the technical expertise needed to manage and regulate offshore renewable energy projects.⁵⁴⁹ Training programs and technical assistance enhance the capabilities of regulatory bodies and energy companies, ensuring effective governance and project implementation.⁵⁵⁰

⁵⁴⁰ *Ibid* at 22.

⁵⁴¹ *Ibid.*

⁵⁴² *Ibid.*

⁵⁴³ *Ibid* at 21.

⁵⁴⁴ *Ibid.*

⁵⁴⁵ *Ibid* at 23.

⁵⁴⁶ Mensah Andoh Obed, "Benin–Nigeria Power Interconnection Project: Sharing Energy in West Africa" (2013) Online: <<https://www.afdb.org/ar/news-and-events/benin-nigeria-power-interconnection-project-sharing-energy-in-west-africa-11791>> accessed on 20 August 2024.

⁵⁴⁷ *Ibid.*

⁵⁴⁸ *Ibid.*

⁵⁴⁹ *Ibid.*

⁵⁵⁰ *Ibid.*

3.4 Regional Program and Agreement Towards Promoting Regional Offshore Renewable Energy Policies

The governance of offshore renewable energy in Africa may be influenced by programs such as the Regional Seas Program, and agreements like the Abidjan Convention. This may contribute to promoting sustainable exploitation of marine resources, enhancing regional cooperation, and ensuring environmental protection.

3.4.1 UNEP Regional Seas Program

The Regional Seas Program, initiated by the United Nations Environment Program (UNEP) in 1974, aims to address the degradation of the world's oceans and coastal areas through regional cooperation.⁵⁵¹ It includes various regional agreements tailored to specific geographical areas, such as the Abidjan Convention for West Africa, the Nairobi Convention for Eastern Africa, and the Jeddah Convention for the Red Sea and Gulf of Aden.⁵⁵² These agreements focus on pollution control, conservation of marine and coastal ecosystems, and the sustainable use of marine resources.⁵⁵³ The agreements also promote the harmonization of national policies and regulatory frameworks.⁵⁵⁴ This ensures that offshore renewable energy projects comply with regional environmental standards and contribute to broader conservation goals.⁵⁵⁵

These agreements also facilitate collaborative research and monitoring efforts, which are essential for assessing the environmental impacts of offshore renewable energy projects. Sharing data and best practices can improve the design and implementation of such projects.⁵⁵⁶ Thus, encouraging regional cooperation in securing funding for large-scale environmental and energy projects.⁵⁵⁷ This can help African countries attract international investments and technical assistance for developing their offshore renewable energy capacities.⁵⁵⁸

⁵⁵¹ UNEP, “UNEP Regional Seas Programme”, Online: < <https://www.unep.org/topics/ocean-seas-and-coasts/regional-seas-programme> > accessed on 10 June 2024.

⁵⁵² United Nations, “Regional Seas Programme for Ocean Related SDGs” Online:< <https://sdgs.un.org/partnerships/regional-seas-programme-ocean-related-sdgs>> accessed on 10 June 2024.

⁵⁵³ *Ibid.*

⁵⁵⁴ *Ibid.*

⁵⁵⁵ *Ibid.*

⁵⁵⁶ *Ibid.*

⁵⁵⁷ *Ibid.*

⁵⁵⁸ *Ibid.*

3.4.2 Abidjan Convention⁵⁵⁹

The Abidjan Convention, (also known as the Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the West and Central African Region) is a regional agreement that was adopted in 1981 and entered into force in 1984.⁵⁶⁰ It covers the marine environment, coastal zones, and related inland waters of West, Central, stretching from Mauritania to Namibia.⁵⁶¹ The Convention is designed to protect the marine and coastal environment of these countries from pollution and unsustainable practices.⁵⁶²

To wit it has accompanying protocols which includes Protocol on Integrated Coastal Zone Management adopted in 2018; Protocol on Sustainable Mangrove Management adopted in 2017; Protocol on Environmental Norms and Standards for Offshore Oil And Gas Exploration and Exploitation Activities adopted in 2013; Protocol Concerning the Cooperation in the Protection and Development of the Marine and Coastal Environment from Land-Based Sources and the Activities (LBSA) in the Western and Central African Region was signed and officially adopted in 2012; and Protocol Concerning Co-operation in Combating Pollution in Cases of Emergency in the Western and Central African Region adopted in 1985.⁵⁶³ The Convention also places importance on its protocols such that the protocols are automatically binding on the contracting Parties.⁵⁶⁴

While the original text of the Abidjan Convention primarily focused on pollution control and the sustainable management of marine and coastal resources, its relevance to ORE has grown with the increasing interest in renewable energy projects in the region.⁵⁶⁵ The Convention's framework provides a basis for the regulation and management of activities that could impact the

⁵⁵⁹ Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the West and Central African Region, 23 March 1981, 16 ILM 1299 (entered into force 5 August 1984) [Abidjan Convention] Online: <<https://www.unep.org/abidjan-convention>> accessed 19 August 2024.

⁵⁶⁰ United Nations Environment Programme (UNEP), “Abidjan Convention: Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the West and Central African Region” (UNEP, 2024) Online: <<https://www.unep.org/abidjan-convention>> accessed 19 August 2024.

⁵⁶¹ *Ibid*; Abidjan Convention at art 1.

⁵⁶² *Ibid*.

⁵⁶³ *Ibid*.

⁵⁶⁴ Abidjan Convention, Art 25.

⁵⁶⁵ UNEP, Pollution Control and Management in the Marine Environment under the Abidjan Convention (Nairobi: United Nations Environment Programme, 2015) Online: <<https://www.unep.org/resources/report/pollution-control-marine-environment-abidjan-convention>> accessed on 19 July 2024.

marine environment, including ORE projects such as offshore wind farms, tidal energy installations, and wave energy converters.⁵⁶⁶

The Convention requires that contracting Parties undertake environmental impact assessments for any activity that is likely to cause significant harm to the marine and coastal environment.⁵⁶⁷ In fact, contracting Parties as part of their environmental management policies are expected to develop technical and other guidelines to assist the planning of their development projects in such a way as to minimize their impact on the Convention area.⁵⁶⁸ This provision is directly relevant to ORE projects, as these installations can have various impacts on marine ecosystems, such as noise pollution, habitat disruption, and potential risks to marine life.⁵⁶⁹ Before any ORE project can proceed, it must undergo an EIA to assess its potential environmental impacts and to identify mitigation measures.⁵⁷⁰ This ensures that renewable energy projects are developed in a way that minimizes harm to the environment.

The Abidjan Convention promotes regional cooperation among member states, especially scientific and technological co-operation, in sharing data and best practices for managing and protecting the marine environment.⁵⁷¹ This cooperative approach is crucial for ORE projects, which may span large areas and affect multiple jurisdictions.⁵⁷² Cooperation under the Convention can facilitate the harmonization of regulations and standards for ORE projects across the region, ensuring a consistent approach to environmental protection and resource management.⁵⁷³

The Convention includes provisions for controlling pollution from marine emergencies,⁵⁷⁴ ships,⁵⁷⁵ land-based⁵⁷⁶ and sea-based sources.⁵⁷⁷ The contracting Parties are responsible for taking appropriate measures to prevent, reduce, control and combat pollution from activities relating to the exploration and exploitation of the seabed.⁵⁷⁸ These include artificial islands, installations and

⁵⁶⁶ *Ibid.*

⁵⁶⁷ Abidjan Convention, Art 13.

⁵⁶⁸ *Ibid.*

⁵⁶⁹ *Ibid.*

⁵⁷⁰ *Ibid.*

⁵⁷¹ Abidjan Convention, art 14.

⁵⁷² *Ibid.*

⁵⁷³ *Ibid.*

⁵⁷⁴ “Protocol Concerning Co-operation in Combating Pollution in Cases of Emergency in the Western and Central African Region”, 23 March 1981, 20 ILM 746 adopted 23 March 1981 (entered into force 5 August 1984).

⁵⁷⁵ Abidjan Convention, art 6.

⁵⁷⁶ Abidjan Convention, art 7.

⁵⁷⁷ Abidjan Convention, art 8.

⁵⁷⁸ *Ibid.*

structures and subsoil subject to their jurisdiction.⁵⁷⁹ Although ORE projects are generally considered low-pollution activities, the construction and maintenance phases can still contribute to pollution, such as through the release of construction debris or accidental oil spills from maintenance vessels.⁵⁸⁰ Compliance with the Convention's pollution control measures is essential to minimize the environmental footprint of ORE projects in Nigeria.⁵⁸¹

The Additional Protocol to the Abidjan Convention on Integrated Coastal Zone Management⁵⁸² emphasize the need for integrated, sustainable, and adaptive management of coastal and marine resources. These principles may be relevant to the governance of Offshore Renewable Energy (ORE) projects, which requires a framework that prioritizes environmental protection, biodiversity conservation, and sustainable socio-economic development. The protocol provides some basis for ensuring that ORE activities are conducted in a manner that minimizes environmental impacts and supports the long-term health of marine and coastal ecosystems.

Article 2(f) of the Protocol defines "coastal zone" as the geomorphological area on either side of the seashore in which the seaward side and the landward side interact through complex ecological and resource systems, including biotic and abiotic components, coexisting and interacting with human communities and relevant socio-economic activities. The definition of the coastal zone is relevant for Offshore Renewable Energy (ORE) governance, as it emphasizes the interdependence between the landward and seaward sides of the coastal area. ORE projects often operate within these zones, and understanding the complex ecological interactions is essential for sustainable development. The definition also highlights the need to consider both natural ecosystems and human socio-economic activities, ensuring that ORE projects do not disrupt these delicate balances.

Article 8 of the Protocol also emphasizes that when exploiting water resources considered as common natural resources, Parties should observe the principles of integrated water resources management, including ecosystem management and the conservation of biodiversity. Integrated water resources management is essential for ORE projects, particularly those that may impact water resources shared by multiple jurisdictions. This may mean that ORE developments must be

⁵⁷⁹ *Ibid.*

⁵⁸⁰ *Ibid.*

⁵⁸¹ *Ibid.*

⁵⁸² Additional Protocol to the Abidjan Convention on Integrated Coastal Zone Management, adopted 2018.

managed within a framework that prioritizes ecosystem health and biodiversity conservation, ensuring that water resources are not over-exploited or degraded by energy activities.

Article 10 of the Protocol mandates that Parties continually adjust their coastal zone development activities, integrating legal, institutional, environmental, socio-economic, and cultural dimensions, while ensuring control, surveillance, monitoring, and evaluation of coastal zone modifications. Effective management of coastal zones is critical for the success of ORE projects. This suggests that ORE activities must be adaptive and responsive to changing environmental conditions, integrating various dimensions of governance to ensure that coastal developments are sustainable. Regular monitoring and evaluation are necessary to mitigate negative impacts on the coastal environment and to refine management practices.

Article 11 of the Protocol also requires Parties to ensure the enforcement of laws and regulations for maintaining healthy ecosystems and restoring degraded ones. ORE projects must operate within a framework that prioritizes the conservation of marine and coastal ecosystems. This article highlights the obligation of governments to enforce environmental laws that protect ecosystems from the potentially harmful effects of ORE installations. Furthermore, it stresses the importance of rehabilitating any ecosystems that may be damaged during the development and operation of these projects.

Under Article 12 of the Protocol Parties must ensure that coastal areas are used and managed sustainably to conserve biodiversity, natural habitats, landscapes, natural resources, and ecosystems, aligning with national, regional, and international legal instruments. Sustainable management of coastal zones is relevant to ORE, as these projects must be developed in a way that conserves biodiversity and natural habitats. This article reinforces the need for ORE projects to align with broader environmental goals and legal frameworks, ensuring that their implementation does not compromise the long-term health of coastal ecosystems.

Article 13 of the Protocol outlines the need for Parties to ensure that socio-economic activities, particularly those requiring proximity to the sea, are conducted sustainably. It emphasizes the sustainable use of natural resources, adaptation of coastal economies to the fragile nature of coastal zones, and the development of indicators for sustainable development. ORE projects, which often require proximity to the sea, must be developed with careful consideration of their socio-economic impacts. This article underscores the importance of balancing economic

development with environmental sustainability, ensuring that ORE activities do not exceed the carrying capacity of coastal zones. The article also advocates for the use of sustainable development indicators to monitor the impact of economic activities, including ORE, on coastal environments.

The Abidjan Convention with its accompanying Protocols may provide a framework for ensuring that ORE projects in West Africa are developed in an environmentally sustainable manner. By requiring environmental impact assessments, promoting the sustainable use of marine resources, encouraging regional cooperation, and controlling pollution, the Convention could help to mitigate potential environmental impacts associated with ORE. As interest in renewable energy grows in the region, the provisions of the Abidjan Convention will be increasingly important in guiding the responsible development of these projects.

3.5 Challenges and Opportunities in Regional Collaboration, Co-operation and Commitments towards ORE development

ORE offers a significant opportunity for sustainable development in Africa. The development of ORE projects, including wind, wave, and tidal energy, hinges significantly on regional collaboration, cooperation, and strong commitments from all stakeholders.

3.5.1 Challenges

3.5.1.1 Fragmented Regulatory Frameworks

One of the primary challenges is the inconsistency and fragmentation of regulatory frameworks across African nations.⁵⁸³ This is because many African countries lack the necessary infrastructure to support large-scale ORE projects and often lack access to the latest technological advancements and expertise needed for efficient offshore energy exploitation.⁵⁸⁴ This includes underdeveloped port facilities, insufficient grid connections, limited offshore platforms and a substantial technology gap in the deployment of advanced ORE technologies.⁵⁸⁵ Developing the required infrastructure demands significant investment and coordinated regional planning.⁵⁸⁶

⁵⁸³ RES4Africa Foundation, “Africa’s Renewable Energy Future” at 98 -112 Online: < <https://res4africa.org/wp-content/uploads/2023/06/Africas-Energy-Future-is-Renewables-Flagship2023.pdf> > accessed on 10 June 2024.

⁵⁸⁴ *Ibid.*

⁵⁸⁵ *Ibid.*

⁵⁸⁶ International Renewable Energy Agency (IRENA), “Renewable Energy Market Analysis: Africa and Its Regions” (2022) at 14-29 Online:< https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA_Market_Africa_2022.pdf? > accessed on 11 June 2024.

While the high initial capital costs associated with ORE projects pose a significant barrier, investors are often deterred by the perceived financial risks and the long payback periods required for these projects.⁵⁸⁷ This financial hesitation is exacerbated by the absence of strong regulatory frameworks that can provide guarantees and reduce investment risks, whereas African countries often face difficulties in accessing international funding for renewable energy projects.⁵⁸⁸ The limited availability of domestic financial resources and the lack of innovative financing mechanisms tailored to the African context further constrain the development of ORE projects.⁵⁸⁹

Many African countries lack specific, comprehensive policies dedicated to offshore renewable energy, as different countries have varying regulations and standards for energy projects, which complicates regional collaboration and the seamless implementation of cross-border ORE projects.⁵⁹⁰ This inconsistency creates an unpredictable environment for investors and developers, who prefer stable and harmonized regulations to mitigate risks.⁵⁹¹ The lack of clear guidelines, inconsistent enforcement, and frequent policy changes can deter investment and slow down project implementation.⁵⁹²

This absence results in a lack of clear guidelines and incentives necessary to attract investments and ensure the sustainable development of ORE projects.⁵⁹³ Without these policies, it is challenging to establish a coherent and supportive regulatory environment.⁵⁹⁴ This fragmentation creates barriers for regional cooperation and the seamless implementation of cross-border ORE projects.⁵⁹⁵

Each country's regulatory environment varies significantly in terms of permitting processes, environmental regulations, and incentives for renewable energy investments.⁵⁹⁶ In Nigeria, the regulatory framework for renewable energy is still evolving, with various policies that

⁵⁸⁷ *Ibid.*

⁵⁸⁸ RES4Africa Foundation, "Africa's Renewable Energy Future" at 98 -112 Online: < <https://res4africa.org/wp-content/uploads/2023/06/Africas-Energy-Future-is-Renewables-Flagship2023.pdf> > accessed on 10 June 2024.

⁵⁸⁹ International Renewable Energy Agency (IRENA), "Renewable Energy Market Analysis: Africa and Its Regions" (2022) at 14-29 Online:< https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA_Market_Africa_2022.pdf? > accessed on 11 June 2024.

⁵⁹⁰ RES4Africa Foundation, "Africa's Renewable Energy Future" at pp 98 -112 Online: < <https://res4africa.org/wp-content/uploads/2023/06/Africas-Energy-Future-is-Renewables-Flagship2023.pdf> > accessed on 10 June 2024.

⁵⁹¹ *Ibid.*

⁵⁹² *Ibid.*

⁵⁹³ International Renewable Energy Agency (IRENA), "Renewable Energy Market Analysis: Africa and Its Regions" (2022) at 14-29 Online:< https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA_Market_Africa_2022.pdf? > accessed on 11 June 2024.

⁵⁹⁴ *Ibid.*

⁵⁹⁵ *Ibid.*

⁵⁹⁶ RES4Africa Foundation, 'Africa's Renewable Energy Future', pp 98 -112 Online: < <https://res4africa.org/wp-content/uploads/2023/06/Africas-Energy-Future-is-Renewables-Flagship2023.pdf> > accessed on 10 June 2024.

sometimes overlap, causing confusion among investors and developers.⁵⁹⁷ In contrast, South Africa has a more developed regulatory framework, but it still faces challenges related to policy stability and implementation consistency.⁵⁹⁸

Closely related to the issue of proper regulatory governance is environmental and social regulatory challenges which includes aspects such as EIAs alongside community engagement.⁵⁹⁹ ORE projects can have significant environmental impacts, particularly on marine ecosystems.⁶⁰⁰ Comprehensive EIAs are crucial to identify and mitigate potential adverse effects.⁶⁰¹ However, the regulatory requirements for EIAs vary widely across African countries, and enforcement is often weak.⁶⁰² Moreover, effective governance of ORE projects requires active engagement with local communities to address their concerns and ensure that the projects provide socio-economic benefits.⁶⁰³ Lack of community involvement can lead to resistance and conflicts.⁶⁰⁴ Thus, effective governance is critical to addressing the challenges and unlocking the potential of ORE.

3.5.1.2 Institutional Weaknesses

Institutional weakness are a significant hurdle in the governance of ORE projects and many African countries have limited institutional capacity to manage and regulate ORE projects effectively.⁶⁰⁵ Most African regulatory bodies do not possess the expertise or administrative capacity to effectively manage and regulate these projects.⁶⁰⁶ This inadequacy hampers the enforcement of regulations and the implementation of best practices in project management.⁶⁰⁷ This includes insufficient technical expertise, inadequate administrative frameworks, and lack of coordination among relevant agencies.⁶⁰⁸ Institutional weaknesses can result in delays in project approvals, poor regulatory oversight, and ineffective enforcement of environmental and safety standards.⁶⁰⁹

⁵⁹⁷ Olusola Johnson Jegede & Winifred Idiaru, 'Legal Frameworks for Renewable Energy in Nigeria' (Mondaq, 6 July 2021) Online: <<https://www.mondaq.com/nigeria/energy-and-natural-resources/1088088/legal-frameworks-for-renewable-energy-in-nigeria>> accessed 12 June 2024.

⁵⁹⁸ Cohn, *supra* note 335.

⁵⁹⁹ UNESCO, 'With the 'High Seas Treaty' on Biodiversity Signed, What Do We Need to Do Next?', (26 October 2023) Online: <<https://www.unesco.org/en/articles/high-seas-treaty-biodiversity-signed-what-do-we-need-do-next>> accessed on 2 June 2024.

⁶⁰⁰ *Ibid.*

⁶⁰¹ *Ibid.*

⁶⁰² *Ibid.*

⁶⁰³ *Ibid.*

⁶⁰⁴ *Ibid.*

⁶⁰⁵ Cohn, *supra* note 335.

⁶⁰⁶ *Ibid.*

⁶⁰⁷ *Ibid.*

⁶⁰⁸ *Ibid.*

⁶⁰⁹ *Ibid.*

Regulatory bodies often lack the resources and expertise needed to handle the complexities of ORE projects.⁶¹⁰ This includes technical knowledge about offshore technologies, environmental impact assessments, and financial modeling for large-scale investments.⁶¹¹ The absence of specialized regulatory agencies dedicated to renewable energy further complicates governance.⁶¹² In many countries, existing energy regulators are stretched thin and unable to focus adequately on the nuances of offshore renewable energy.⁶¹³

Weak enforcement mechanisms further complicate the regulatory landscape as effective governance requires robust institutions capable of enforcing laws and ensuring compliance.⁶¹⁴ However, many countries struggle with insufficient resources and institutional inefficiencies, leading to gaps in enforcement and regulatory oversight.⁶¹⁵ This includes technical knowledge about offshore technologies, environmental impact assessments, and financial modeling for large-scale investments.⁶¹⁶

In fact, both AU and ECOWAS face challenges related to inadequate infrastructure, which hampers the development and integration of renewable energy projects.⁶¹⁷ Significant investments are needed to upgrade and expand energy infrastructure, particularly for offshore renewable energy.

3.5.2 Opportunity for Regional Cooperation and Integration

ORE presents a significant opportunity for sustainable development by providing clean and renewable energy, reducing carbon emissions, and promoting economic growth.⁶¹⁸ It aligns with global sustainability goals and contributes to environmental protection through joint initiatives and projects which leverage the strengths of member states, optimizing the use of available

⁶¹⁰ *Ibid.*

⁶¹¹ *Ibid.*

⁶¹² *Ibid.*

⁶¹³ *Ibid.*

⁶¹⁴ International Renewable Energy Agency (IRENA), 'Renewable Energy Market Analysis: Africa and Its Regions', (2022) pp 14-29 Online:<https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA_Market_Africa_2022.pdf?rev=bb73e285a0974bc996a1f942635ca556 > accessed on 11 June 2024.

⁶¹⁵ *Ibid.*

⁶¹⁶ *Ibid.*

⁶¹⁷ *Ibid.*

⁶¹⁸ RES4Africa Foundation, "Africa's Renewable Energy Future" at 98 -112 Online: < <https://res4africa.org/wp-content/uploads/2023/06/Africas-Energy-Future-is-Renewables-Flagship2023.pdf> > accessed on 10 June 2024.

resources.⁶¹⁹ By fostering regional integration, AU and ECOWAS could enhance energy security, improve access to electricity, and promote sustainable development.⁶²⁰

Harmonizing energy policies and regulatory frameworks across African nations could create a more stable and attractive environment for ORE investments.⁶²¹ Regional bodies like the AU and the ECOWAS play a crucial role in promoting policy alignment and facilitating cooperation.⁶²² This would extend to the development regional energy markets which could enhance energy security and efficiency. For example, initiatives like WAPP aim to create integrated electricity markets, which can support the development and distribution of ORE.⁶²³ This may lead to more partnerships between the African region and international organizations as well as developed countries, which could facilitate the transfer of knowledge and technology to African nations through investment in capacity building programs.⁶²⁴

Collaborative research initiatives are another benefit that harmonizing energy policies can bring to help address specific challenges and optimize the deployment of ORE in Africa.⁶²⁵ Promoting research and development in ORE technologies could drive innovation and adaptation to local conditions. This may be by encouraging Public-Private Partnerships to mobilize the necessary capital and expertise for ORE projects. These partnerships can share risks and benefits, making investments more attractive to the private sector.⁶²⁶ Leveraging green bonds and climate funds could provide additional financial resources for ORE projects. These instruments could attract international investors interested in sustainable energy projects.⁶²⁷

The development of ORE projects could create jobs and stimulate local economies which includes opportunities in construction, maintenance, and related industries, contributing to

⁶¹⁹ *Ibid.*

⁶²⁰ *Ibid.*

⁶²¹ ECOWAS, 'White Paper for a Regional Policy', (2006) at 26 Online: < https://www.undp.org/sites/g/files/zskgke326/files/publications/ECOWAS%20WhitePaper%20for%20a%20RegionalPolicy_2005.pdf > accessed on 26 May 2024.

⁶²² ECREEE, 'ECOWAS Renewable Energy Policy (EREP)' (2012) at 36-37,40, 49 Online: < https://www.agora-parl.org/sites/default/files/agora-documents/151012_ecowas_renewable_energy_policy_final.pdf > accessed on 29 May 2024.

⁶²³ *Ibid.*

⁶²⁴ Parliamentarians for Global Action, "United Nations High Seas Treaty: A Historic Agreement to Protect the Ocean – Factsheet for Parliamentarians" at 2-4 Online: < https://www.pgaction.org/pdf/2023/factsheet-united-nations-high-seas-treaty_en.pdf > accessed on 2 June 2024.

⁶²⁵ International Renewable Energy Agency (IRENA), "Renewable Energy Market Analysis: Africa and Its Regions" (2022) at 14-29 Online:< https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA_Market_Africa_2022.pdf? > accessed on 11 June 2024.

⁶²⁶ RES4Africa Foundation, "Africa's Renewable Energy Future" at 98 -112 Online: < <https://res4africa.org/wp-content/uploads/2023/06/Africas-Energy-Future-is-Renewables-Flagship2023.pdf> > accessed on 10 June 2024.

⁶²⁷ International Renewable Energy Agency (IRENA), "Renewable Energy Market Analysis: Africa and Its Regions" (2022) at 14-29 Online:< https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA_Market_Africa_2022.pdf? > accessed on 11 June 2024.

improved livelihoods and economic development.⁶²⁸ However, the development of offshore renewable energy in Africa is shaped by both significant challenges and opportunities.⁶²⁹ Breaking infrastructural, financial, and regulatory barriers through enhanced regional collaboration and innovative solutions is crucial.⁶³⁰ By utilizing the strengths of regional bodies like the AU and ECOWAS, fostering capacity building, and securing sustainable financing, Africa could unlock the full potential of its offshore renewable energy resources, contributing to a sustainable and prosperous future.

The governance of offshore renewable energy in Africa is supported not just by regional policies but also agreements such as the Regional Seas agreement, specifically the Abidjan Convention for West Africa. This agreement could provide frameworks for sustainable development, environmental protection, and regional cooperation in ORE development.

⁶²⁸ *Ibid.*

⁶²⁹ *Ibid.*

⁶³⁰ *Ibid.*

CHAPTER 4: INTERNATIONAL APPROACHES

4.1 Introduction

In the face of global climate challenges and the urgent need for sustainable energy solutions, Offshore Renewable Energy (ORE) has emerged as a vital component for energy transition. This chapter delves into the international approaches to ORE, highlighting the legal frameworks, principles, and case studies that shape its development worldwide. By examining key international conventions, the roles of influential organizations, and the best practices from various countries, this chapter provides an understanding of how ORE can be effectively harnessed and regulated in Nigeria.

The chapter explores the cornerstone of international marine and maritime law, the United Nations Convention on the Law of the Sea (UNCLOS),⁶³¹ which provides the foundational legal framework for ORE activities. This is because UNCLOS delineates the rights and responsibilities of states in exploiting ocean resources within their Exclusive Economic Zones (EEZs), territorial seas, and on the continental shelf, ensuring sustainable and equitable use of these resources.⁶³² Complementing UNCLOS, the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (High Seas Treaty)⁶³³ and the Convention on Biological Diversity (CBD)⁶³⁴ emphasize the conservation of marine biodiversity, and call for Environmental Impact Assessments (EIAs) for ORE projects to mitigate adverse environmental impacts. The UNFCCC and the Paris Agreement provide a comprehensive framework for global efforts to combat climate change, emphasizing the reduction of greenhouse gas emissions through mechanisms like Nationally Determined Contributions (NDCs), technology transfer, and market mechanisms. These frameworks are explored to determine their support to the development and governance of ORE governance in Nigeria.

⁶³¹ United Nations Convention on the Law of the Sea, 10 December 1982, 1833 United Nations Treaty Series 397 (entered into force 16 November 1994) [UNCLOS 1982].

⁶³² *Ibid.*

⁶³³ Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction, 19 June 2023, United Nations General Assembly Document A/CONF.232/2023/4 [BBNJ 2003].

⁶³⁴ Convention on Biological Diversity, 5 June 1992, 1760 United Nations Treaty Series 79 [CBD 1992].

Furthermore, international organizations like the International Renewable Energy Agency (IRENA)⁶³⁵ and the International Maritime Organization (IMO)⁶³⁶ which play a role in advancing the global ORE agenda are examined. IRENA's initiatives, such as the Collaborative Framework on Ocean Energy and the G20 Offshore Renewables Action Agenda, provide strategic guidance, policy advice, and technical support to member states, fostering international cooperation and accelerating the deployment of ORE.⁶³⁷

The chapter also explores emerging international law principles relevant to ORE, including the Precautionary Principle,⁶³⁸ Public Participation,⁶³⁹ the Ecosystem Approach,⁶⁴⁰ and Social Equity and Adaptive Management.⁶⁴¹ These principles could ensure that ORE development is not only environmentally sustainable but also socially inclusive and responsive to changing conditions.

Examining the experiences of jurisdictions like Netherlands, Canada, New Jersey, United Kingdom and Scotland, the chapter illustrates diverse regulatory frameworks and stakeholder engagement strategies in ORE development. These case studies provide some lessons on balancing energy development with environmental and social considerations.

Drawing from these international experiences, the chapter concludes with insights and lessons learned for Nigeria. Emphasizing the need for clear regulatory frameworks, inclusive stakeholder engagement and robust EIAs, the chapter outlines a roadmap for Nigeria to harness its offshore renewable energy potential sustainably.

4.2 International Law on Offshore Renewable Energy

4.2.1 Legal Frameworks

International legal frameworks such as UNCLOS, CBD, UNFCCC, Paris Agreement and the BBNJ provide the foundation for the governance of offshore renewable energy resources.

⁶³⁵ IRENA, "Creation of IRENA" Online: < <https://www.irena.org/About/History/Creation-of-IRENA> > accessed 20 June 2024.

⁶³⁶ "IMO" Online: <<https://www.imo.org>> accessed 7 March 2024.

⁶³⁷ IRENA, "Offshore Renewables: An Action Agenda for Deployment" (Abu Dhabi: International Renewable Energy Agency, 2021) at 10-25 Online: < https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2021/Jul/IRENA_G20_Offshore_renewables_2021.pdf? > accessed on 20 June 2024.

⁶³⁸ Jonathan B Weiner, *Precaution and Climate Change* (Oxford: Oxford University Press, 2016) at 164.

⁶³⁹ Jennifer Hanna Collado, *Education, Training, Public Awareness, Participation, and Access to Information (Article 12)* In David Klein et al eds, *The Paris Agreement on Climate Change: Analysis and Commentary* (Oxford: Oxford University Press, 2017) at 293-300.

⁶⁴⁰ Shepherd, G. and Union mondiale pour la nature, "The Ecosystem Approach: Five Steps to Implementation" (Gland: IUCN Commission on Ecosystem Management, 2004) at 30.

⁶⁴¹ Andres M Cisneros-Montemayor et al, "Social Equity and Benefits as the Nexus of a Transformative Blue Economy: A Sectoral Review of Implications" (Elsevier, November 2019) 109 Marine Policy at 103702.

However, they do not actively promote renewable energy development but only provide a foundational governance framework, that indirectly affects offshore renewable energy activities by addressing safety, environmental, and navigational concerns. To actively promote renewable energy, a more specific international legal framework tailored comprehensively towards offshore renewable energy governance is required.

4.2.1.1 United Nations Convention on the Law of the Sea (UNCLOS)⁶⁴²

At the forefront of ORE governance is UNCLOS,⁶⁴³ a treaty that establishes the overall governance for the use and management of marine resources. UNCLOS delineates the rights and responsibilities of coastal States, regulates activities in the exclusive economic zone (EEZ), territorial seas, and continental shelf, and provides a framework for resolving disputes related to maritime boundaries and resource exploitation.⁶⁴⁴ It is an important treaty for offshore renewable energy especially with respect to its provisions on responsibilities of states in the use and management of marine resources and transfer of marine technology.

4.2.1.1.1 Rights, Duties and Responsibilities of States with respect to the Exclusive Economic Zone under UNCLOS

UNCLOS outlines the rights, duties, and responsibilities of states as well as other incidental matters in the use and management of marine resources in the Exclusive Economic Zone (EEZ).⁶⁴⁵ These articles address various aspects related to the conservation and management of living resources in the Exclusive Economic Zone (EEZ).⁶⁴⁶

UNCLOS establishes the rights of coastal States to explore, exploit, conserve and manage marine resources within their EEZs.⁶⁴⁷ This includes the sovereign right to manage and exploit the production of marine energy, and energy from water, currents and winds.⁶⁴⁸ For offshore renewable energy, this implies that coastal States have the authority to regulate and manage the development

⁶⁴²UNCLOS 1982.

⁶⁴³ *Ibid.*

⁶⁴⁴ McDonald & David L VanderZwaag, *supra* note 137.

⁶⁴⁵ UNCLOS 1982 at arts 55-75.

⁶⁴⁶ Philippe Sands et al, *Principles of International Environmental Law* 3rd eds, (United Kingdom: Cambridge University Press, 2012) at 349-352.

⁶⁴⁷ UNCLOS 1982 at art 56.

⁶⁴⁸ McDonald & VanderZwaag, *supra* note 137.

and exploitation of renewable energy resources, such as offshore wind, wave, and tidal energy, within their EEZs.⁶⁴⁹

This includes the jurisdiction of coastal States over the EEZ, with respect to marine scientific research, and the establishment and use of artificial islands and structures.⁶⁵⁰ Offshore renewable energy projects often involve installations on the EEZ, so this article is directly relevant to the legal framework governing the placement and operation of such infrastructure.⁶⁵¹

The Convention further provides that coastal States have the exclusive right to construct, authorize and regulate the construction and operation of artificial islands, installations, and structures within the Exclusive Economic Zone (EEZ).⁶⁵² Thus coastal States have the exclusive right to construct, authorize, and regulate artificial islands, installations, and structures, including those related to ORE (e.g., wind farms, wave energy converters, and floating platforms).⁶⁵³

Coastal States may establish safety zones around these artificial islands and installations to ensure navigation safety and protect the installations.⁶⁵⁴ Therefore, floating platforms used for ORE projects or other maritime activities in the EEZ are under the coastal State's jurisdiction. The coastal State regulates their positioning and operation, ensuring they do not interfere with navigation.⁶⁵⁵

However, states do not have complete sovereignty over their EEZ.⁶⁵⁶ As all States whether coastal or landlocked subject to the provisions of UNCLOS, enjoy freedoms of navigation, overflight, laying of submarines cables and pipelines.⁶⁵⁷ These freedoms also includes other internationally lawful use of the sea, such as those associated with the operations of ships, aircraft, submarine cables and pipelines as far as they are compatible with the other provisions of the Convention.⁶⁵⁸

⁶⁴⁹ *Ibid.*

⁶⁵⁰ UNCLOS 1982 at art 56(1)(b).

⁶⁵¹ *Ibid.*

⁶⁵² *Ibid* at art 60(1).

⁶⁵³ *Ibid.*

⁶⁵⁴ *Ibid* at art 60(4)-(6).

⁶⁵⁵ *Ibid.*

⁶⁵⁶ McDonald & VanderZwaag *supra* note 137.

⁶⁵⁷ UNCLOS 1982 at art 58.

⁶⁵⁸ *Ibid.*

4.2.1.1.2 Rights, Duties and Responsibilities of States with respect to the Continental Shelf under UNCLOS

The United Nations Convention on the Law of the Sea (UNCLOS) establishes a framework governing the rights, duties, and responsibilities of states concerning the continental shelf.⁶⁵⁹ The continental shelf, as defined by UNCLOS, refers to the seabed and subsoil of the submarine areas extending beyond a coastal State's territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, where the outer edge of the continental margin does not extend up to that distance.⁶⁶⁰

Coastal States have sovereign rights over the continental shelf for the purpose of exploring it and exploiting its natural resources, including mineral and non-living resources of the seabed and subsoil, as well as sedentary species.⁶⁶¹ These rights are exclusive, meaning no other state can undertake such activities on a state's continental shelf without its express consent. Coastal States have jurisdiction over the development of offshore renewable energy (ORE) projects, such as wind, wave, and tidal energy, on their continental shelf. This includes the exclusive right to authorize and regulate the construction, operation, and decommissioning of ORE installations.

For extended continental shelf, which is if the continental shelf extends beyond 200 nautical miles, the coastal State can claim an extended continental shelf.⁶⁶² The state must submit information on the limits of its extended continental shelf to the Commission on the Limits of the Continental Shelf (CLCS) for validation.⁶⁶³ Upon approval, the state gains the same rights over this area as it has over the continental shelf within 200 nautical miles.⁶⁶⁴ For states with an extended continental shelf, the jurisdiction over ORE projects extends to this area as well, pursuant to Article 80 of UNCLOS at least where a project has connections to the seabed.⁶⁶⁵ However, they must adhere to the obligations outlined by UNCLOS, including environmental protection and sustainable use of resources.⁶⁶⁶

⁶⁵⁹ UNCLOS 1982 at arts 76-77.

⁶⁶⁰ *Ibid* at 76.

⁶⁶¹ *Ibid* at art 77.

⁶⁶² *Ibid* at art 76.

⁶⁶³ *Ibid*.

⁶⁶⁴ *Ibid*.

⁶⁶⁵ McDonald & VanderZwaag, *supra* note 137 at 303.

⁶⁶⁶ *Ibid*.

These rights however come with corresponding duties and responsibilities, including environmental protection, and sustainable use of resources. States are obligated to protect the marine environment, including the continental shelf, and must prevent, reduce, and control pollution from all sources.⁶⁶⁷ They must also take measures to avoid significant harm to other states' marine environments.⁶⁶⁸ Coastal States are responsible for ensuring that the exploitation of the resources on the continental shelf is conducted sustainably, considering the long-term health of the marine environment.⁶⁶⁹

While states have rights over their continental shelf, the high seas, which are areas beyond national jurisdiction, remain open to all states.⁶⁷⁰ ORE installations on the high seas are subject to different regulatory frameworks, where UNCLOS provisions related to freedom of the high seas, including navigation and laying of cables and pipelines, apply.⁶⁷¹ However, ORE activities on the high seas are generally less developed compared to those on continental shelves due to technological and legal complexities.

4.2.1.1.3 Jurisdiction, Powers and Limits of Coastal States on Territorial Seas and Right of Innocent Passage under UNCLOS

The territorial sea extends up to 12 nautical miles from the baseline of a coastal State's land territory.⁶⁷² Within this zone, the coastal State exercises sovereignty, which extends to the airspace over the territorial sea as well as its bed and subsoil.⁶⁷³ Moreso, the coastal State can regulate all activities within its territorial sea, including navigation, fishing, marine scientific research, and the laying of cables and pipelines.⁶⁷⁴ This also encompasses the construction, operation, and decommissioning of ORE installations. Thus, coastal States here have exclusive rights over the exploration, exploitation, conservation, and management of natural resources, including the development of Offshore Renewable Energy (ORE), such as wind, wave, and tidal energy.

Innocent passage allows foreign vessels to traverse the territorial sea of a coastal State without entering internal waters or calling at a port, provided the passage is not prejudicial to the

⁶⁶⁷ UNCLOS 1982 at art 192.

⁶⁶⁸ *Ibid* at art 193.

⁶⁶⁹ *Ibid*.

⁶⁷⁰ *Ibid* at art 87.

⁶⁷¹ *Ibid*.

⁶⁷² *Ibid* at art 3.

⁶⁷³ Francesca Galea, "A Legal Regime for the Exploration and Exploitation of Offshore Renewable Energy Governance", In Aldo Chircop et al, "Ocean Yearbook 25" (Martinus Nijhoff Publishers, 2011) at 110.

⁶⁷⁴ *Ibid*.

peace, good order, or security of the coastal State.⁶⁷⁵ There are certain conditions for innocent passage, the passage must be continuous, expeditious, and non-prejudicial, avoiding activities that could threaten the coastal State's security.⁶⁷⁶

Thus, coastal States may regulate innocent passage through laws and can temporarily suspend passage for security reasons, provided the suspension is non-discriminatory and publicly announced.⁶⁷⁷ However, the coastal State's sovereignty over the territorial sea is subject to the right of innocent passage for foreign vessels.⁶⁷⁸ This right limit the coastal State's ability to unilaterally restrict passage, though conditions apply. Thus, the coastal State cannot impede the innocent passage of foreign vessels and cannot impose arbitrary restrictions or excessive charges that would violate international law.⁶⁷⁹

With respect to fishing activities, it could be inferred that coastal States have the authority to regulate fishing activities within their territorial sea.⁶⁸⁰ This includes the management of fish stocks, enforcement of conservation measures, and regulation of foreign fishing vessels. Coastal States must also ensure that fishing activities and ORE installations are managed in a way that minimizes conflicts.⁶⁸¹ For example, fishing may be restricted in safety zones established around ORE installations to protect both the installations and the marine environment.⁶⁸²

Coastal States may install ocean energy facilities in their territorial seas, provided they do not preclude or unreasonably interfere with the right of innocent passage.⁶⁸³ These installations must be sited and managed to avoid hindering the right of innocent passage for foreign vessels. To support this, UNCLOS also empowers coastal States to establish regulations aimed at protecting their offshore facilities, installations, and cables.⁶⁸⁴ Additionally, it permits coastal States to designate specific sea lanes and traffic separation schemes for foreign ships exercising the right of innocent passage through their territorial waters, to ensure safe navigation.⁶⁸⁵ In implementing these measures, coastal States must consider recommendations from the International Maritime

⁶⁷⁵ UNCLOS 1982 at art 18

⁶⁷⁶ *Ibid.*

⁶⁷⁷ *Ibid* at art 25

⁶⁷⁸ *Ibid* at art 17.

⁶⁷⁹ *Ibid.*

⁶⁸⁰ *Ibid* at art 2(1).

⁶⁸¹ *Ibid.*

⁶⁸² *Ibid.*

⁶⁸³ McDonald & VanderZwaag, *supra* note 137.

⁶⁸⁴ UNCLOS 1982 at art 21.

⁶⁸⁵ *Ibid* at art 22(1).

Organization (IMO), the customary channels used for international navigation, the unique characteristics of ships and channels, and the traffic density in the area.⁶⁸⁶ States must also ensure that these designated sea lanes and traffic separation schemes are clearly marked on navigational charts.⁶⁸⁷

4.2.1.1.4 Protection of the Marine Environment Under UNCLOS

The protection of the marine environment is a central component of the United Nations Convention on the Law of the Sea (UNCLOS). It outlines obligations for states to prevent, reduce, and control pollution of the marine environment and to conserve marine resources.⁶⁸⁸ Part XII of UNCLOS is specifically dedicated to these issues, and its provisions are critical for ensuring the sustainable use and protection of the world's oceans. It establishes the general framework for the protection and preservation of the marine environment, including specific obligations and measures that states must take to prevent, reduce, and control pollution from various sources, including land-based activities, seabed activities, and vessel-based pollution. States have the obligation to protect and preserve the marine environment. This is a fundamental principle that underpins all other provisions in Part XII.⁶⁸⁹

States are required to take all necessary measures to prevent, reduce, and control pollution of the marine environment from any source. This includes ensuring that activities under their jurisdiction or control do not cause damage to other states or to areas beyond national jurisdiction.⁶⁹⁰ States are encouraged to cooperate on a global and regional basis to formulate and elaborate international rules, standards, and recommended practices and procedures for the protection and preservation of the marine environment.⁶⁹¹ States must monitor the environmental effects of activities that may affect the marine environment and must undertake environmental impact assessments (EIAs) for planned activities that may cause significant harm to the

⁶⁸⁶ McDonald & VanderZwaag, *supra* note 137.

⁶⁸⁷ *Ibid.*

⁶⁸⁸ UNCLOS 1982 at art 1(4), "Pollution of the marine environment" means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities."

⁶⁸⁹ UNCLOS 1982 at art 192.

⁶⁹⁰ UNCLOS 1982 at art 194.

⁶⁹¹ UNCLOS 1982 at arts 197 - 201.

environment.⁶⁹² States are responsible for enforcing international rules and national laws regarding the protection of the marine environment, including through the prosecution of violations.⁶⁹³

Environmental Impact Assessments (EIAs) are a crucial tool under UNCLOS for preventing significant environmental harm. Article 206 specifically requires states to assess the potential effects of activities under their jurisdiction or control that may cause substantial pollution or significant harm to the marine environment.⁶⁹⁴ States are required to conduct EIAs before engaging in any activity that is likely to have a significant adverse impact on the marine environment. This includes activities such as offshore drilling, seabed mining, and large-scale fishing operations. While UNCLOS does not explicitly mandate public participation in the EIA process, the general principles of international environmental law suggest that transparency and public involvement are essential components of an effective EIA process.

The *Philippines v. China* case (also known as the South China Sea Arbitration) is particularly relevant to this discourse.⁶⁹⁵ The case speaks to the accountability for environmental harm, as the tribunal found that China's activities in the South China Sea, particularly the construction of artificial islands and other infrastructure on coral reefs, had caused significant environmental damage, violating its obligations under UNCLOS.⁶⁹⁶ Thus, the tribunal underscored the importance of EIAs, stating that China had failed to conduct proper EIAs before undertaking activities that significantly impacted the marine environment.⁶⁹⁷

The tribunal's findings demonstrate the importance of conducting thorough EIAs, exercising due diligence, and ensuring that states comply with their obligations to protect and preserve marine ecosystems.⁶⁹⁸ The tribunal reaffirmed that states have a general obligation to protect and preserve the marine environment under UNCLOS, including the duty to conduct EIAs for activities that may have a significant impact on the marine environment.⁶⁹⁹ The decision also emphasized that states must exercise due diligence in ensuring that activities within their

⁶⁹² UNCLOS 1982 at arts 204-206.

⁶⁹³ UNCLOS 1982 at arts 213-222.

⁶⁹⁴ *Ibid* at art 206.

⁶⁹⁵ *Philippines v China*, Award, PCA Case No 2013-19, (12 July 2016), Online: <https://pca-cpa.org/en/cases/7/>, accessed 12 August 2024.

⁶⁹⁶ *Ibid*.

⁶⁹⁷ *Ibid*.

⁶⁹⁸ *Ibid*.

⁶⁹⁹ *Ibid*.

jurisdiction do not harm the marine environment.⁷⁰⁰ This includes preventing damage to coral reefs and other sensitive marine ecosystems.⁷⁰¹

Part XII of UNCLOS provides a framework for the protection and preservation of the marine environment, with specific provisions addressing pollution control, conservation of marine resources, and the requirement for environmental impact assessments.⁷⁰² The Tribunal in the *Philippines v. China* case further clarified the obligations of states under UNCLOS, particularly the need for due diligence and proper environmental assessments to prevent harm to the marine environment.⁷⁰³ These principles are crucial for ensuring that the exploitation of marine resources is conducted sustainably, protecting marine ecosystems for future generations.

Summarily, UNCLOS provides a framework for the governance of offshore renewable energy by establishing the rights and responsibilities of coastal States in the exploration, exploitation, and conservation of marine resources within their jurisdiction. It promotes cooperation among states in the sustainable management of marine resources and provides mechanisms for resolving disputes related to the use of offshore renewable energy resources. Overall, UNCLOS serves as a cornerstone of international law in governing offshore renewable energy and ensuring the sustainable development of marine resources for the benefit of present and future generations.

4.2.1.1.5 Development and Transfer of Marine Technology under UNCLOS

Part XIV of the United Nations Convention on the Law of the Sea (UNCLOS) addresses the areas of development and transfer of marine science and marine technology. This Part introduces the importance of promoting international cooperation in the development and transfer of marine technology.⁷⁰⁴ States are encouraged to facilitate the exchange of scientific and technical knowledge and to collaborate on research and development projects aimed at advancing marine science and marine technology.⁷⁰⁵ In fact, States in the bid to promote the development of marine

⁷⁰⁰ *Ibid.*

⁷⁰¹ *Ibid.*

⁷⁰² UNCLOS 1982 at pt XII

⁷⁰³ *Ibid.*

⁷⁰⁴ UNCLOS 1982 at art 266.

⁷⁰⁵ UNCLOS 1982 at art 266 (1).

scientific and technological capacity should provide technical assistance particularly to developing States, including land locked and geographically disadvantaged States on an equitable basis.⁷⁰⁶

Further to this, States are required to respect all legitimate interests including that of the rights and duties of holders, suppliers, and recipients of marine technology.⁷⁰⁷ States are encouraged to share data, research findings, and technical information to facilitate the transfer of marine technology on a global scale. The foregoing is crucial for the success of ORE development which is heavily dependent on technology.

The Convention underscores the importance of capacity building and training programs in enhancing the capabilities of developing countries in the field of marine technology. As States in the actualization of the basic objectives of technology transfer are encouraged to support capacity building initiatives and to provide technical assistance and training opportunities to developing countries to promote the effective utilization of marine technology.⁷⁰⁸ The Convention further calls for the establishment of international mechanisms to facilitate the transfer of marine technology, particularly to developing countries. States are encouraged to cooperate in the creation of such mechanisms, which may include technology transfer centers, seminars, symposiums, conferences, joint research institutions, and collaborative projects aimed at promoting the development and transfer of marine technology.⁷⁰⁹

4.2.1.1.6 International Cooperation Under UNCLOS

International cooperation is also heralded by UNCLOS. States are encouraged to collaborate with each other, as well as with relevant international organizations and institutions, to advance scientific research, technological innovation, and knowledge sharing in the field of marine technology.⁷¹⁰ To facilitate this, UNCLOS emphasizes the need for states to promote the establishment of cooperation mechanisms such as guidelines, criteria, and standards. This is to facilitate the exchange of scientific and technical knowledge, expertise, and resources related to transfer of marine technology on bilateral basis or other fora.⁷¹¹ These mechanisms may include joint research projects, technology transfer agreements, and collaborative initiatives aimed at

⁷⁰⁶ UNCLOS 1982 at art 266(2).

⁷⁰⁷ UNCLOS 1982 at art 267.

⁷⁰⁸ UNCLOS 1982 at art 268.

⁷⁰⁹ UNCLOS 1982 at art 269.

⁷¹⁰ UNCLOS 1982 at art 270.

⁷¹¹ UNCLOS 1982 at art 271.

addressing common challenges and promoting sustainable development.⁷¹² A key consideration for the effectiveness of the cooperation envisaged under the treaty is the focus on the interests and needs of developing States.⁷¹³ Hence, States are encouraged to work together to provide technical assistance, training programs, and educational opportunities to developing countries, helping them build their capabilities and infrastructure in marine technology.⁷¹⁴

In addition to the Convention's efforts at smoothing the path for international cooperation, it promotes joint research and development activities among states to enhance cooperation in the field of marine technology. States are encouraged to engage in collaborative projects, share research facilities, skilled nationals, and pool resources to advance scientific understanding, technological innovation, and the sustainable management of marine resources.⁷¹⁵ This is done with the objectives of making sufficient provision of technical assistance in the area of marine technology to developing countries who need them amongst other objectives.⁷¹⁶ Thus, States are encouraged to support multilateral efforts, such as research partnerships, technology transfer schemes, and capacity-building projects, aimed at addressing common challenges and achieving shared goals in marine science and technology.

This may explain the Treaty's proposed establishment of national and regional marine scientific and technology centres to stimulate the sharing of information, expertise, and best practices among states to promote international cooperation in marine technology.⁷¹⁷ States are encouraged to exchange data, research findings, and technical know-how through cooperative arrangements, collaborative networks, and knowledge-sharing platforms.⁷¹⁸ Highlighting the apparent gap in technological advancement, States are encouraged to offer technical expertise, financial resources, and capacity-building programs to help developing countries improve their capabilities and infrastructure in marine science and technology. It motivates States to collaborate with specialized agencies and international organizations to promote international cooperation in marine technology.⁷¹⁹

⁷¹² *Ibid.*

⁷¹³ UNCLOS 1982 at arts 272 & 273.

⁷¹⁴ *Ibid.*

⁷¹⁵ UNCLOS 1982 at arts 273.

⁷¹⁶ UNCLOS 1982 at art 274.

⁷¹⁷ UNCLOS 1982 at art 275.

⁷¹⁸ UNCLOS 1982 at arts 276 & 277.

⁷¹⁹ UNCLOS 1982 at art 278.

In addition, States are encouraged to work closely with relevant entities, such as the International Maritime Organization (IMO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the International Seabed Authority (ISA), to coordinate efforts and enhance cooperation in the field of marine technology. Strengthening of partnerships and alliances among states, international organizations, and other stakeholders to promote international cooperation in marine technology are called for. States are encouraged to forge strategic alliances, build collaborative networks, and foster synergies to address global challenges and achieve common objectives in marine science and technology.⁷²⁰

In summary, UNCLOS provides a framework for the governance of offshore renewable energy by establishing the rights and responsibilities of coastal States in the exploration, exploitation, and conservation of marine resources within their jurisdiction. It promotes cooperation among states in the sustainable management of marine resources and provides mechanisms for resolving disputes related to the use of offshore renewable energy resources. Overall, UNCLOS serves as a start point for international law in governing offshore renewable energy and ensuring the sustainable development of marine resources for the benefit of present and future generations.

4.2.1.2 The Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Agreement)⁷²¹

The BBNJ Agreement (often referred to as the “High Seas Treaty”), is an agreement under UNCLOS which was formally adopted by the United Nations in June 2023, as a landmark agreement aimed at protecting marine biodiversity in areas beyond national jurisdiction (ABNJ).⁷²² It covers nearly two-thirds of the world’s oceans, areas that were previously under minimal regulatory oversight⁷²³ and not governed by any specific national regulations.⁷²⁴ The BBNJ Agreement applies specifically to activities in areas beyond national jurisdiction (ABNJ), which include the high seas and the Area (the seabed and ocean floor beyond national jurisdiction).⁷²⁵ Its

⁷²⁰ *Ibid.*

⁷²¹ BBNJ 2003.

⁷²² *Ibid.*, preamble.

⁷²³ UNESCO, “With the ‘High Seas Treaty’ on Biodiversity Signed, What Do We Need to Do Next?” (26 October 2023) Online: <<https://www.unesco.org/en/articles/high-seas-treaty-biodiversity-signed-what-do-we-need-do-next>> accessed on 2 June 2024.

⁷²⁴ United Nations News, “Beyond Borders: Why New ‘High Seas’ Treaty is Critical for the World” (19 June 2023) Online: <<https://news.un.org/en/story/2023/06/1137857>> accessed on 2 June 2024.

⁷²⁵ *BBNJ 2003*, preamble & art 4.

recognition for the need for legislative, administrative or policy measures to ensure the approval and involvement of Indigenous Peoples and local communities for access prior to the use of marine genetic resources, may also inform the governance of ORE.⁷²⁶ The Agreement also seeks to ensure the sustainable use of marine resources and includes provisions for environmental impact assessments (EIAs), marine protected areas (MPAs), and capacity building for developing nations with ABNJ.⁷²⁷

The Agreement mandates EIAs for activities in international waters specifically ABNJ, ensuring that offshore renewable energy projects do not harm and adversely affect marine ecosystems.⁷²⁸ Parties are to determine if a planned activity to be conducted in marine areas within national jurisdiction which it has jurisdiction or control over would cause substantial pollution of or significant harmful changes to the marine environment in ABNJ.⁷²⁹ Where that is determined that Party is to ensure that an EIA of such activity, must be conducted in line with the provisions of the BBNJ.⁷³⁰ If an ORE project is planned in these areas, the BBNJ Agreement would apply. Moreso, the BBNJ sets specific non-exhaustive factors that would be used to consider whether a planned activity exceed or meet the threshold of more than a minor or transitory effect on the marine environment, or the effects of the activity are unknown or poorly understood.⁷³¹ , This includes “the type of and technology used for the activity and the manner in which it is to be conducted; the duration of the activity; the location of the activity; the characteristics and ecosystem of the location (including areas of particular ecological or biological significance or vulnerability); the potential impacts of the activity, including the potential cumulative impacts and the potential impacts in areas within national jurisdiction; the extent to which the effects of the activity are unknown or poorly understood; and other relevant ecological or biological criteria.”⁷³²

Thus, any ORE project that has the potential to cause substantial pollution of or significant harmful changes to the marine environment in ABNJ would likely trigger the need for an EIA and potentially other provisions of the BBNJ Agreement.⁷³³ This could include large-scale wind farms,

⁷²⁶ BBNJ 2003, art 13.

⁷²⁷ Nature, “UN High Seas Treaty is a Landmark – But Science Needs to Fill the Gaps” (20 March 2023) Online: <<https://www.nature.com/articles/d41586-023-00757-z>> accessed on 2 June 2024.

⁷²⁸ BBNJ 2003, art 28(1).

⁷²⁹ *Ibid* at arts 28(2) & 30(1)(b).

⁷³⁰ *Ibid*.

⁷³¹ *Ibid* at art 30(1).

⁷³² *Ibid* at art 30(2).

⁷³³ *Ibid* at art 28(2).

extensive wave or tidal energy projects, or other substantial offshore infrastructure. This makes the BBNJ important for projects like offshore wind farms, which can have significant environmental impacts if not properly managed.⁷³⁴

The BBNJ aims to conserve and sustainably use areas requiring protection, through the establishment of a comprehensive system of area-based management tools, with ecologically representative and well-connected networks of marine protected areas.⁷³⁵ To promote the establishment of MPAs, the BBNJ provides a streamlined process for the establishment of MPAs.⁷³⁶ Parties may submit proposals individually or collectively for the establishment of MPAs to the secretariat, upon receipt the secretariat will make it publicly available and transmit for a preliminary review of the proposal.⁷³⁷ After consultations and assessment of the proposals,⁷³⁸ the Conference of the Parties would take decisions on the establishment of area-based management tools, including marine protected areas, and related measures on the basis of the final proposal and the draft management plan.⁷³⁹ It would also consider the contributions and scientific input received during the consultation process.⁷⁴⁰ It may also take decisions on measures compatible with those adopted by relevant legal instruments and frameworks and relevant global, regional, subregional and sectoral bodies.⁷⁴¹ A properly managed MPA process could ensure that renewable energy developments are sustainable and do not disrupt key ecological processes in ABNJ.

The BBNJ also seeks to support developing states Parties, in particular the least developed countries, landlocked developing countries, geographically disadvantaged states, small island developing states, coastal African states, archipelagic states and developing middle-income countries, through capacity-building and the development and transfer of marine technology.⁷⁴² It aims to develop the marine scientific and technological capacity to support developing states Parties in particular, with regard to the conservation and sustainable use of marine biological diversity of ABNJ.⁷⁴³ This would be through access to marine technology by, and the transfer of

⁷³⁴ Parliamentarians for Global Action, 'United Nations High Seas Treaty: A Historic Agreement to Protect the Ocean – Factsheet for Parliamentarians' Online: < https://www.pgaction.org/pdf/2023/factsheet-united-nations-high-seas-treaty_en.pdf> accessed on 2 June 2024.

⁷³⁵ BBNJ 2003, art 17(a).

⁷³⁶ *Ibid* at pt III.

⁷³⁷ *Ibid*.

⁷³⁸ *Ibid* at art 21.

⁷³⁹ *Ibid* at art 22.

⁷⁴⁰ *Ibid*.

⁷⁴¹ *Ibid*.

⁷⁴² *Ibid* at pt V.

⁷⁴³ *Ibid* at art 40

marine technology to, developing states Parties.⁷⁴⁴ It would also increase, disseminate and share knowledge on the conservation and sustainable use of marine biological diversity of ABNJ.⁷⁴⁵ This could support African nations in developing their offshore renewable energy sectors by providing access to advanced technologies and best practices.⁷⁴⁶

The implication for offshore renewable energy especially regionally includes facilitating enhanced governance and supporting developing nations.⁷⁴⁷ The Agreement, though not in force yet, may provide a framework for governing activities in the high seas, including the development of offshore renewable energy.⁷⁴⁸ This could help in mitigating environmental impacts and promoting sustainable practices.⁷⁴⁹ By focusing on capacity building and technology transfer, the treaty may support African nations in developing their offshore renewable energy sectors, ensuring they have access to the latest technologies and practices, though it is limited to the high seas.⁷⁵⁰

4.2.1.3 Convention on Biological Diversity (CBD)⁷⁵¹

The CBD, adopted at the Earth Summit in Rio de Janeiro in 1992, is another pivotal international treaty that may significantly influence ORE development.⁷⁵² The CBD's objectives are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from genetic resources.⁷⁵³ It emphasizes the importance of protecting marine and coastal biodiversity, which is highly relevant to ORE projects. Its focus on biodiversity and ecosystem health is integral to the responsible development of ORE, ensuring that such activities do not compromise marine biodiversity.⁷⁵⁴

The CBD promotes public awareness and participation in conservation and sustainable use efforts.⁷⁵⁵ For ORE, this means involving local communities and stakeholders in the planning and

⁷⁴⁴ *Ibid.*

⁷⁴⁵ *Ibid* at Art 40-44.

⁷⁴⁶ Nature, “UN High Seas Treaty is a Landmark – But Science Needs to Fill the Gaps” (20 March 2023) Online: < <https://www.nature.com/articles/d41586-023-00757-z>> accessed on 2 June 2024.

⁷⁴⁷ United Nations News, “Beyond Borders: Why New 'High Seas' Treaty is Critical for the World” (19 June 2023) Online: < <https://news.un.org/en/story/2023/06/1137857>> accessed on 2 June 2024.

⁷⁴⁸ *Ibid.*

⁷⁴⁹ UNESCO, “With the 'High Seas Treaty' on Biodiversity Signed, What Do We Need to Do Next?” (26 October 2023) Online: < <https://www.unesco.org/en/articles/high-seas-treaty-biodiversity-signed-what-do-we-need-do-next>> accessed on 2 June 2024.

⁷⁵⁰ Offshore Energy, “UN adopts historic High Seas Treaty” (20 June 2023) Online: < <https://www.offshore-energy.biz/un-adopts-historic-high-seas-treaty/>> accessed on 2 June 2024.

⁷⁵¹ CBD 1992.

⁷⁵² Kachelriess D, ‘The High Seas Biodiversity Treaty: An Introduction to the Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction’, (IUCN, November 2023) at 2 Online: < <https://www.iucn.org/sites/default/files/2024-01/iucn-bbnj-treaty-policy-brief.pdf>> accessed 3 March 2024.

⁷⁵³ *Ibid*

⁷⁵⁴ *Ibid.*

⁷⁵⁵ CBD 1992, art 13.

implementation stages to ensure that environmental and social impacts are adequately addressed.⁷⁵⁶ CBD refers to protected areas, these are areas that require special management and protection to conserve biological diversity due to their importance in the marine ecosystem.⁷⁵⁷ States are further required to respect, preserve and maintain the knowledge, practices and lifestyles of indigenous and local communities in these areas.⁷⁵⁸ These areas may also be considered in marine spatial planning to avoid significant adverse impacts from ORE activities.⁷⁵⁹

Other key provisions relevant to ORE includes the provision on conservation and sustainable use, where Parties are required to develop national strategies for the conservation and sustainable use of biological diversity, which includes the management of marine resources impacted by ORE activities.⁷⁶⁰ Parties must also introduce appropriate procedures requiring environmental impact assessments (EIAs) of proposed projects that are likely to have significant adverse effects on biological diversity, including ORE projects.⁷⁶¹

Additionally, the CBD's Programme of Work provides guidance on the sustainable management of marine and coastal areas, addressing issues such as habitat protection and the sustainable use of marine resources.⁷⁶² The programme of work consists of four interlinked elements intended to be mutually reinforcing and cross-cutting in their implementation.⁷⁶³ The interlinked elements include first, direct actions for planning, selecting, establishing, strengthening, and managing, protected area systems and sites.⁷⁶⁴ The second element covers governance, participation, equity and benefit sharing, whilst the third element entails enabling activities such as identifying legislative and institutional gaps, that may impeded the effective establishment and management of protected areas.⁷⁶⁵ The fourth element seeks to map out standards, assessment and monitoring towards best practices for national and regional protected area systems amongst other goals.⁷⁶⁶

⁷⁵⁶ *Ibid.*

⁷⁵⁷ CBD 1992, art 8.

⁷⁵⁸ *Ibid.*

⁷⁵⁹ *Ibid.*

⁷⁶⁰ CBD 1992 art 6 & 10.

⁷⁶¹ CBD 1992, art 14.

⁷⁶² Convention on Biological Diversity, 'Programme of Work' Online: < <https://www.cbd.int/> > accessed on 16 June 2024.

⁷⁶³ *Ibid.*

⁷⁶⁴ *Ibid.*

⁷⁶⁵ *Ibid.*

⁷⁶⁶ *Ibid.*

It was developed bearing in mind the need to avoid unnecessary duplication with existing thematic work programmes and other ongoing initiatives of the CBD, and to promote synergy and coordination with relevant programmes of various international organizations.⁷⁶⁷ Parties are encouraged to apply where appropriate the objectives and activities from these thematic work programmes and the work on cross-cutting issues.⁷⁶⁸

Another contribution of the CBD is the Kunming-Montreal Global Biodiversity Framework, an offshoot of the CBD which has certain implications for capacity building, touching on various aspects of global biodiversity management and conservation. Adopted during the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 15), the Framework aims to transform society's relationship with biodiversity and to ensure that by 2050, the shared vision of living in harmony with nature is fulfilled.⁷⁶⁹

One of the primary implications of the Framework for capacity building is the explicit commitment to enhancing the implementation capabilities of countries, especially those in the developing world.⁷⁷⁰ It recommends the promotion or development platforms, partnerships and action agendas, including with media, civil society and educational institutions, including academia, to share information on successes, lessons learned and experiences and to allow for adaptive learning and participation in acting for biodiversity.⁷⁷¹ The Framework acknowledges the gap in resources and skills between developed and developing nations and aims to bridge this gap through targeted capacity-building initiatives. This involves training personnel, improving technological infrastructures, and increasing access to financial resources.⁷⁷² These efforts are intended to empower countries to better manage and conserve their natural resources, implement effective biodiversity policies, and participate fully in international biodiversity governance.

Moreover, the Framework emphasizes the importance of traditional knowledge and the role of indigenous peoples and local communities in biodiversity conservation.⁷⁷³ Capacity-building programs under the Framework are likely to support these groups in safeguarding their knowledge

⁷⁶⁷ *Ibid.*

⁷⁶⁸ *Ibid.*

⁷⁶⁹ Convention on Biological Diversity, "Fact Sheets" <<https://www.cbd.int/abs/doc/protocol/factsheets/all-factsheets-en.pdf>> (accessed 20 April 2024).

⁷⁷⁰ Kunming-Montreal Global Biodiversity Framework 2022 at preamble, sec K.

⁷⁷¹ *Ibid* at art 22(c).

⁷⁷² *Ibid.*

⁷⁷³ *Ibid* at art 22(a).

and integrating it into broader national and international conservation strategies. This includes formal recognition of their rights, enhanced participation in decision-making processes, and support for their sustainable practices that have been proven to conserve biodiversity effectively.⁷⁷⁴

Another key aspect is the Framework's goal to expand the global area of land and sea under conservation.⁷⁷⁵ This includes its four overarching goals to be achieved by 2050 which focus on ecosystem and species health, including to halt human-induced species extinction, the sustainable use of biodiversity, equitable sharing of benefits, alongside implementation and finance to include closing the biodiversity finance gap of \$700 billion per year.⁷⁷⁶

Furthermore, the Framework's first target is to ensure that all areas are under participatory, integrated and biodiversity inclusive spatial planning and effective management processes addressing land and sea-use change, to bring the loss of areas of high biodiversity, including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of indigenous peoples and local communities.⁷⁷⁷ The twenty-three targets to be achieved by 2030 include 30 per cent conservation of land, sea and inland waters (Target 3); 30 per cent restoration of degraded ecosystems (Target 2); halving the introduction of invasive species (Target 6); and \$500 billion/year reduction in harmful subsidies (Target 18).⁷⁷⁸ The \$500 billion/year reduction in harmful subsidies could potentially be explored in Nigeria, towards redirecting subsidies from conventional energy sources to support the growth of ORE. The Framework's ambitious targets, such as reducing the rate of introduction and establishment of invasive alien species by 50%, could also necessitate enhanced technical and scientific capacity to monitor ecosystems, implement biosecurity measures, and engage in restoration activities.⁷⁷⁹ This highlights the need for a multidisciplinary approach in capacity-building efforts, encompassing ecological, technological, and managerial skills.

In summary, the Kunming-Montreal Global Biodiversity Framework sets an agenda for capacity building aimed at empowering all nations to manage and conserve biodiversity more

⁷⁷⁴ Elli Louka, *Biodiversity & Human Rights: The International Rules for the Protection of Biodiversity* (New York: Transnational Publishers, 2002) at 143-145.

⁷⁷⁵ UNEP, "International Agreements: Kunming-Montreal Global Biodiversity Framework" (19 December 2022) Online: <<https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>> accessed on 19 August 2024.

⁷⁷⁶ Kunming-Montreal Global Biodiversity Framework 2022 at section G

⁷⁷⁷ *Ibid* at section H.

⁷⁷⁸ *Ibid.*

⁷⁷⁹ *Ibid.*

effectively. This agenda is critical for achieving the framework's goals and ensuring that biodiversity conservation becomes an integral part of sustainable development strategies worldwide.

4.2.1.4 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)⁷⁸⁰

CITES plays a crucial role in the protection of endangered species by regulating international trade in specimens of wild animals and plants.⁷⁸¹ It does so by categorizing species into three appendices, each offering different levels of protection based on the species' conservation status.⁷⁸² Appendix I include species that are threatened with extinction and are subject to the strictest trade regulations.⁷⁸³ Appendix II list species that are not necessarily threatened with extinction but may become so unless trade is closely controlled.⁷⁸⁴ Appendix III mentions species protected in at least one country, which has asked other CITES Parties for assistance in controlling the trade.⁷⁸⁵

CITES operates through a system of permits and certificates that regulate the import, export, and re-export of species covered by the convention. It requires countries (Parties to CITES) to implement national legislation to enforce these regulations.⁷⁸⁶ An example of how this mechanism works is reflected in the *United States v. 1,800 Metric Tons of Brazilian Mahogany*.⁷⁸⁷ This case involved the illegal importation of Brazilian mahogany into the United States. Brazilian mahogany (*Swietenia macrophylla*) is listed under CITES Appendix II, which requires that international trade in this species be accompanied by permits ensuring that the trade does not harm the species' survival in the wild.⁷⁸⁸ The U.S. government seized the shipment, arguing that it lacked the necessary CITES permits.⁷⁸⁹ The court upheld the seizure, emphasizing the importance of CITES in regulating trade in endangered species and preventing illegal trade.⁷⁹⁰ This case also

⁷⁸⁰ Convention on International Trade in Endangered Species of Wild Fauna and Flora, 3 March 1973, 993 UNTS 243, arts II, III, IV, V (entered into force 1 July 1975).

⁷⁸¹ *Ibid.*

⁷⁸² *Ibid.*

⁷⁸³ *Ibid.*

⁷⁸⁴ *Ibid.*

⁷⁸⁵ *Ibid.*

⁷⁸⁶ *Ibid.*

⁷⁸⁷ *United States v 1,800 Metric Tons of Brazilian Mahogany*, 2002 WL 1798232 (SD Fla 2002).

⁷⁸⁸ *Ibid.*

⁷⁸⁹ *Ibid.*

⁷⁹⁰ *Ibid.*

highlighted the role of national courts in enforcing CITES regulations and demonstrated the importance of proper documentation and permits for species listed under CITES.⁷⁹¹

While CITES primarily focuses on controlling and monitoring trade to prevent over-exploitation of endangered species, its relevance to Offshore Renewable Energy (ORE) projects lies in the potential impact these projects can have on marine and coastal ecosystems, which may include species listed under CITES. ORE installations can directly affect marine species through physical disturbances, such as construction activities, noise pollution, and habitat alteration. For example, the construction of offshore wind farms can disturb marine habitats that are crucial for species listed under CITES, such as certain species of sharks, rays, and marine turtles. The operation of ORE projects can lead to changes in marine ecosystems, which may indirectly impact species listed under CITES. For example, changes in water flow or sedimentation patterns due to tidal energy installations could affect the habitats of marine species protected by CITES.

ORE projects may be located near or within critical habitats of species listed under CITES. The disruption or alteration of these habitats could threaten the survival of these species, particularly if they are already vulnerable due to other factors like climate change or overfishing. Many marine species covered by CITES, such as whales, dolphins, and certain fish, rely on migratory routes that could be disrupted by ORE installations. Ensuring that these projects do not obstruct or negatively impact these routes is essential for the conservation of these species.

The consideration of CITES-listed species should be an integral part of Environmental Impact Assessments (EIAs) for ORE projects. EIAs can help identify potential impacts on endangered species and propose mitigation measures to minimize harm. This is especially important in areas known to be habitats for CITES-listed species. ORE activities, particularly those involving seabed exploration, might inadvertently result in the capture or disturbance of CITES-listed species. The trade in any by-products of these species, such as shells or coral fragments, would be regulated under CITES, requiring permits and adherence to strict guidelines.

The *Southern Bluefin Tuna Cases (Australia and New Zealand v. Japan)* exemplifies how this may play out.⁷⁹² Although not directly under CITES, the Southern Bluefin Tuna Cases

⁷⁹¹ *Ibid.*

⁷⁹² *Southern Bluefin Tuna Cases (New Zealand v. Japan; Australia v. Japan)*, Provisional Measures, Order of 27 August 1999, ITLOS Reports 1999, 280.

involved disputes over the conservation of Southern Bluefin Tuna, a species listed under CITES Appendix II.⁷⁹³ Australia and New Zealand accused Japan of overfishing and violating their obligations to conserve the species under international law.⁷⁹⁴ The International Tribunal for the Law of the Sea (ITLOS) issued provisional measures urging Japan to adhere to catch limits to prevent further harm to the species.⁷⁹⁵ While the case primarily focused on the Convention for the Conservation of Southern Bluefin Tuna, it has implications for CITES because of the species' status under the Convention.⁷⁹⁶ This case further underscores the intersection of international conservation agreements and the enforcement of CITES-listed species' protection.⁷⁹⁷

The obligations under CITES extend beyond regulating international trade in endangered species to include broader responsibilities for the protection and conservation of these species in their natural habitats. These general obligations include the protection of species listed under CITES through conservation efforts, habitat protection, and other measures aimed at ensuring the long-term survival of these species in the wild. *The South China Sea Arbitration* and the ITLOS Advisory Opinion on Climate Change illustrate how international jurisprudence reinforces the need for states to protect biodiversity and prevent harm to ecosystems that support endangered species. They highlight the importance of integrating environmental protection into all aspects of national and international decision-making, consistent with the obligations under CITES.

In the *South China Sea Arbitration*⁷⁹⁸, the Philippines challenged China's actions in the South China Sea, particularly the construction of artificial islands and activities that caused significant harm to coral reefs and marine life. The tribunal's findings on the destruction of coral reefs, which serve as habitats for various species, illustrates how states' actions can violate their duty to protect the environment and species under international law, even outside the direct context of trade. The decision underscored the broader obligations of states to protect the marine environment, which can be analogized to the obligations under CITES. Although CITES was not directly invoked, the principles applied in the tribunal's decision reinforce the need for states to prevent harm to species and habitats listed under international conventions like CITES.

⁷⁹³ *Ibid.*

⁷⁹⁴ *Ibid.*

⁷⁹⁵ *Ibid.*

⁷⁹⁶ *Ibid.*

⁷⁹⁷ *Ibid.*

⁷⁹⁸ *The South China Sea Arbitration (The Republic of Philippines v. The People's Republic of China)*, Award of 12 July 2016, PCA Case No. 2013-19, paras 945-947, 991-992.

The ITLOS Advisory Opinion on Climate Change addressed the responsibilities of states regarding the protection of the marine environment in the context of climate change.⁷⁹⁹ The ITLOS opinion emphasized that states have a duty to prevent significant harm to the marine environment, including the protection of biodiversity.⁸⁰⁰ The Tribunal considered the species in the appendices to CITES as guidance as to what species are endangered or threatened, and thus subject to the obligation under Article 194(5) of UNCLOS, to protect the habitat of depleted threatened or endangered species. The opinion reinforces the obligation of states to take proactive measures to protect species from threats such as habitat loss due to climate change.⁸⁰¹ The advisory opinion posits that states must consider the broader implications of their actions on endangered species, even when those actions are not directly related to trade.⁸⁰²

CITES could also be relevant to the planning, implementation, and operation of Offshore Renewable Energy projects due to the potential impacts these projects can have on endangered species and their habitats. By incorporating the principles of CITES into the regulatory and assessment frameworks for ORE, countries can ensure that these projects contribute to sustainable energy development without compromising the conservation of marine biodiversity. This requires careful planning, comprehensive EIAs, and the implementation of effective mitigation strategies to protect species listed under CITES.

4.2.1.5 United Nations Framework Convention on Climate Change (UNFCCC)⁸⁰³

The United Nations Framework Convention on Climate Change (UNFCCC) plays a significant role in the global governance of climate-related issues, including the development and regulation of Offshore Renewable Energy (ORE) projects.⁸⁰⁴ The UNFCCC's focus on reducing greenhouse gas emissions and promoting sustainable energy solutions directly aligns with the goals of ORE, which includes technologies like offshore wind, wave, and tidal energy.⁸⁰⁵

⁷⁹⁹ ITLOS, “*Case no 31: Request for an Advisory Opinion Submitted by the Commission of Small Island States on Climate Change and International Law*”, (21 May 2024) at 135 Online: < https://www.itlos.org/fileadmin/itlos/documents/cases/31/Advisory_Opinion/C31 > accessed on 21 August 2024.

⁸⁰⁰ *Ibid.*

⁸⁰¹ *Ibid.*

⁸⁰² *Ibid.*

⁸⁰³ United Nations Framework Convention on Climate Change, 9 May 1992, 1771 UNTS 1087 (entered into force 21 March 1994) [UNFCCC].

⁸⁰⁴ United Nations, “United Nations Framework Convention on Climate Change?” Online:< <https://unfccc.int/process-and-meetings/what-is-the-united-nations-framework-convention-on-climate-change>> accessed on 18 August 2024.

⁸⁰⁵ *Ibid.*

The UNFCCC encourages the adoption of renewable energy sources as part of global efforts to mitigate climate change.⁸⁰⁶ UNFCCC is closely linked with the Sustainable Development Goals (SDGs), particularly SDG 7, which focuses on ensuring access to affordable, reliable, sustainable, and modern energy for all.⁸⁰⁷ ORE projects are pivotal in achieving this goal by providing clean energy options that do not rely on fossil fuels.⁸⁰⁸ In this context, UNFCCC promotes ORE as they provide substantial opportunities to reduce carbon emissions and transition towards a low-carbon economy.⁸⁰⁹

The UNFCCC, through its provisions for technology transfer and capacity building, offers a framework for international collaboration. It emphasizes the importance of technology transfer to developing countries, by emphasizing the need for developed countries to assist the developing countries with access to environmentally sound technologies and know how.⁸¹⁰

To carry out the implementation of this provision with respect to Technology Needs Assessment (TNAs), the Expert Group on Technology Transfer (EGTT) was formed.⁸¹¹ The Expert Group on Technology Transfer (EGTT) was tasked with identifying barriers to technology transfer and recommending actions to overcome them.⁸¹² It worked on developing technology needs assessments (TNAs), technology information sharing, and capacity-building programs to help developing countries identify and implement technologies that align with their climate goals.⁸¹³

However, this was replaced by the Technology Mechanism (TM) and Climate Technology Centre and Network (CTCN) in 2010 due to several issues.⁸¹⁴ These issues include the EGTT's top-down planning of technology transfer, assumption of technology needs through individual consultants rather than stakeholders' views, and the domination of conflicting interests between the developing and developed countries amongst other issues.⁸¹⁵

⁸⁰⁶ *Ibid.*

⁸⁰⁷ *Ibid.*

⁸⁰⁸ *Ibid.*

⁸⁰⁹ *Ibid.*

⁸¹⁰ UNFCCC 1992 at art 4.5.

⁸¹¹ UNFCCC, "EGTT: Five Years of Work" at 3-12 Online: < https://unfccc.int/resource/docs/publications/egtt_eng.pdf> accessed on 18 August 2024.

⁸¹² *Ibid.*

⁸¹³ *Ibid.*

⁸¹⁴ Helen de Coninck & Ambuj Sugar, *Technology Transfer and Development* In Daniel Klein et al, eds, "*The Paris Agreement on Climate Change: Analysis and Commentary*" (United Kingdom: Oxford University Press, 2017) at 260.

⁸¹⁵ *Ibid.*

Hence, the TM was also tasked with accelerating technology development and transfer, in support of action on adaptation and mitigation guided by a country driven approach, circumstances and priorities.⁸¹⁶ In 2023, the Technology Mechanism launched its Initiative on Artificial Intelligence for Climate Action (#AI4ClimateAction) to explore the role of AI as a powerful technological tool for advancing, and scaling up transformative climate solutions for mitigation and adaptation action in developing countries.⁸¹⁷

The CTCN has flagged its third programme of work for the period 2023-2027, aimed at enhancing transformational impact through proven technology enablers and system transformations.⁸¹⁸ The Programme of the Technology Mechanism (2023–2027) is composed of the joint activities and common areas of work of the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN), the rolling workplan of the TEC and the Programme of Work of the CTCN.⁸¹⁹ The Programme brings together, for the first time, the long-term strategies of the TEC and the CTCN and defines areas of focus for the mechanism as a whole, to elevate its performance and increase its impact.⁸²⁰

Thus, both the TEC and CTCN focus on supporting developing countries in enhancing their capacities to adopt and implement climate technologies.⁸²¹ While the TEC provides policy guidance and strategic direction, the CTCN translates these into actionable projects and initiatives on the ground, often working directly with national governments, institutions, and other stakeholders.⁸²² An example of how their interaction could promote ORE in developing countries like Nigeria could involve the TEC identifying a need for improved ORE technology frameworks in a region. The CTCN could then provide technical assistance to countries in that region to develop and implement the necessary policies, conduct training, or set up pilot projects in line with the TEC's recommendations.

However, due to funding constraints which was based on donor contributions rather than on structural funding, implementing such pilot projects currently is unclear.⁸²³ Therefore, the

⁸¹⁶ UNFCCC, “*Decision 2/CP.15, Copenhagen Accord, FCCC/CP/2009/11/Add.1*” (Copenhagen Accord, 30 March 2010), at para 11.

⁸¹⁷ *Ibid.*

⁸¹⁸ United Nations Climate Technology Centre and Network, “Our Activities: The CTCN’s Third Programme of Work 2023-2027” < <https://ctcn.org/> > accessed 19 April 2024.

⁸¹⁹ United Nations Climate Change, “What is Technology Development and Transfer?” Online: < <https://unfccc.int/topics/what-is-technology-development-and-transfer> > accessed 20 April 2024.

⁸²⁰ *Ibid.*

⁸²¹ UNFCCC 1982.

⁸²² *Ibid.*

⁸²³ *Ibid.*

commitment to support developing countries in implementing technology transfer without a well-designed, well-functioning, and responsive financial mechanism would be almost impossible.

4.2.1.6 Paris Agreement⁸²⁴

The Paris Agreement, adopted in 2015 under the United Nations Framework Convention on Climate Change (UNFCCC), is an international treaty aimed at addressing climate change by reducing greenhouse gas emissions and limiting global temperature rise. The agreement sets out provisions that could be relevant to the governance of Offshore Renewable Energy (ORE), particularly in the context of reducing carbon emissions and promoting sustainable energy development, which are crucial for countries like Nigeria.

The Paris Agreement requires each party to prepare, communicate, and maintain successive Nationally Determined Contributions (NDCs) that it intends to achieve.⁸²⁵ NDCs represent each country's efforts to reduce national emissions and adapt to the impacts of climate change.⁸²⁶ Nigeria's current Nationally Determined Contribution (NDC), updated in 2021, reaffirms its commitment to reducing greenhouse gas emissions by 20% below the business-as-usual (BAU) scenario by 2030, unconditionally. Additionally, Nigeria aims for a conditional target of 47% below BAU by 2030, contingent on international support in terms of finance, technology, and capacity building.⁸²⁷ ORE projects could be a critical component of achieving NDCs as they contribute to reducing reliance on fossil fuels, thus lowering greenhouse gas emissions. For Nigeria, expanding ORE would be aligned with its NDC commitments to increase renewable energy sources and reduce carbon emissions.⁸²⁸

The Paris Agreement highlights the global goal of enhancing adaptive capacity, strengthening resilience, and reducing vulnerability to climate change.⁸²⁹ It also promotes sustainable development and the integration of adaptation into national policies. ORE can play a dual role in both mitigation and adaptation. For Nigeria, ORE projects may not only help mitigate climate change by reducing emissions but also enhance resilience by providing a reliable and sustainable energy source that is less vulnerable to climate impacts than traditional energy systems.

⁸²⁴ *Paris Agreement*, 12 December 2015, 3156 UNTS 79 (entered into force 4 November 2016) [Paris Agreement 2015].

⁸²⁵ Paris Agreement 2015 at art 4

⁸²⁶ *Ibid.*

⁸²⁷ National Council on Climate Change, "Nigeria's Long-Term Low Emission Development Strategy-2060" *supra* note 217.

⁸²⁸ *Ibid.*

⁸²⁹ Paris Agreement 2015 at art 7.

The Agreement also emphasizes the need for technology development and transfer to improve resilience to climate change and reduce greenhouse gas emissions.⁸³⁰ The Agreement encourages cooperative action on technology development and transfer, particularly to developing countries.⁸³¹ The development and deployment of ORE technologies, such as offshore wind, wave, and tidal energy, can be facilitated through international cooperation and technology transfer. For Nigeria, access to advanced ORE technologies and expertise is crucial for scaling up renewable energy production and achieving its climate goals.

To provide support to the technology related goals of the Paris Agreement -which is to promote technology transfer and development in developing countries to build resilience to climate change and reduce greenhouse gas emissions- the Decision 1/CP.21 was established.⁸³² The Decision provided more information on what the Technology Framework should facilitate, such as the undertaking, implementation and updating of TNAs and their results, especially project ideas and technology action plans.⁸³³ It further calls for the assessment of technologies that are ready for transfer, provision of enabling environments for and addressing barriers to the development and transfer of sound technologies.⁸³⁴ The Decision also takes into consideration the significance of facilitating enhanced financial and technical support for the implementation of the results of the TNAs.⁸³⁵

The Agreement further stresses the importance of capacity-building efforts to enhance the ability of developing countries to implement climate actions.⁸³⁶ This includes the development of institutional frameworks, skills, and knowledge necessary for sustainable energy development.⁸³⁷ Building capacity in Nigeria to manage and develop ORE projects is vital for the successful implementation of its NDCs. Capacity-building initiatives can include training programs, workshops, and partnerships that focus on the technical and regulatory aspects of ORE governance.

The Paris Agreement calls for developed countries to provide financial resources to assist developing countries in implementing mitigation and adaptation strategies.⁸³⁸ This financial

⁸³⁰ Paris Agreement 2015 at art 10.

⁸³¹ *Ibid.*

⁸³² Decision 1/CP.21, Adoption of the Paris Agreement, FCCC/CP/2015/10/Add.1,12 December 2015.

⁸³³ *Ibid* at para 67(a).

⁸³⁴ *Ibid* at paras 67(c) & (d).

⁸³⁵ *Ibid* at para 67(b).

⁸³⁶ Paris Agreement 2015 at art 11.

⁸³⁷ *Ibid.*

⁸³⁸ Paris Agreement 2015 at art 9.

support is essential for enabling the transition to low-carbon energy sources. Financial assistance under the Paris Agreement can be used to fund ORE projects in Nigeria, which may require significant investment for infrastructure development, research, and capacity building. This support helps bridge the gap between the high upfront costs of ORE projects and the long-term benefits of sustainable energy production.

The Paris Agreement introduced several market mechanisms to support the reduction of greenhouse gas emissions through international cooperation. These mechanisms are designed to enhance flexibility, cost-effectiveness, and global participation in achieving climate targets. The primary market mechanisms under the Paris Agreement are outlined in Article 6 and include Internationally Transferred Mitigation Outcomes (ITMOs), Sustainable Development Mechanism (SDM) and Non-Market Approaches (NMAs).

ITMOs allow countries to trade emissions reductions across borders. This mechanism facilitates the transfer of carbon credits between countries, which could be used to meet their Nationally Determined Contributions (NDCs).⁸³⁹ It enables cooperation between countries to achieve greater emissions reductions than they could independently. ORE projects can generate carbon credits by reducing reliance on fossil fuels and increasing clean energy production. Countries investing in ORE could use the resulting emissions reductions as ITMOs, trading them on the international carbon market. This could incentivize the development of ORE projects, as they could contribute to both national climate goals and international market-based emissions reductions.

The SDM is designed to generate emissions reductions through specific projects, which could then be traded or used by countries to meet their NDCs.⁸⁴⁰ The SDM aims to ensure environmental integrity and promote sustainable development while supporting emissions reduction efforts. ORE projects could be registered under the SDM to generate carbon credits that could be sold or used to meet NDC targets. By linking ORE projects to the SDM, countries could attract investment and finance for renewable energy infrastructure, fostering the expansion of ORE in both developed and developing nations.

⁸³⁹ Paris Agreement 2015 at art 6.2.

⁸⁴⁰ Paris Agreement 2015 at art 6.4

The Agreement encourages non-market approaches to mitigate climate change and promote sustainable development.⁸⁴¹ These approaches may include cooperative actions between countries that do not involve the direct trading of carbon credits but still contribute to emissions reductions and climate resilience. NMAs could support the development of ORE by promoting knowledge sharing, capacity building, and technology transfer without the need for a formal market mechanism. For example, bilateral or multilateral partnerships focused on ORE development could be classified as NMAs, facilitating international cooperation and support for renewable energy projects.

Nigeria, as a party to the Paris Agreement, has committed to reducing its greenhouse gas emissions and increasing the share of renewable energy in its energy mix through its NDCs. The provisions of the Paris Agreement provide a framework for Nigeria to pursue ORE as part of its strategy to meet its climate commitments. By leveraging international support for technology transfer, financial resources, and capacity building, Nigeria can advance its ORE projects, contributing to both its economic development and its climate goals.

4.2.2 Institutional Frameworks

4.2.2.1 The International Maritime Organization (IMO)

Overall, the IMO's regulatory framework is primarily focused on shipping, however its activities indirectly influence offshore renewable energy development by promoting safety, environmental protection, and international cooperation in maritime activities.⁸⁴² This has become more obvious with the location of a high percentage of offshore wind energy projects within the exclusive economic zone of a coastal state or territorial sea⁸⁴³ falling within the purview of the International Maritime Organization (IMO). This is because the IMO plays a vital role in regulating maritime activities, which would include offshore renewable energy projects. IMO conventions and regulations address safety, navigation, pollution prevention, and liability issues relevant to offshore energy installations, ensuring the protection of marine ecosystems and safety of maritime traffic.⁸⁴⁴ For instance, the IMO issued a resolution in 1989 whose focus is on safety zones and

⁸⁴¹ Paris Agreement 2015 at art 6.8

⁸⁴² "IMO" Online: <<https://www.imo.org>> accessed 7 March 2024.

⁸⁴³ Paul Elsner & Suzette Suarez, "Renewable Energy from The High Seas: Geo-Spatial Modelling of Resource Potential and Legal Implications for Developing Offshore Wind Projects beyond the National Jurisdiction of Coastal States" (2019) 128 *Energy Policy* at 919-929.

⁸⁴⁴ *Ibid.*

safety navigations around offshore installations, intended for offshore extractive industries in the exclusive economic zone or the continental shelf.⁸⁴⁵ This resolution in its preamble recognized the need for ensuring unencumbered exploitation of natural resources and the need to maintain a balance in the light of congestion on navigable waters by offshore installations or structures that could result in ships collision.⁸⁴⁶ It recommends that Governments study the pattern of shipping traffic through offshore resource exploration areas at an early stage, to assess potential interference with marine traffic passing close to or through such areas at all stages of exploitation.⁸⁴⁷ Further to the study and where traffic warrants, Governments should consider, amongst other things, the establishment of safety zones around offshore installations or structures.⁸⁴⁸

Furthermore, IMO plays a role in ensuring the safety and sustainability of maritime activities, which indirectly impacts offshore renewable energy development, especially where the IMO sets safety standards for vessels and offshore structures that are relevant to offshore renewable energy installations.⁸⁴⁹ For example, regulations related to vessel design, construction, and operation help ensure the safety of personnel and equipment involved in offshore wind farms, wave energy converters, and other renewable energy projects.⁸⁵⁰ Thus, while not directly regulating offshore renewable energy, the IMO may consider the safety implications of offshore energy projects when assessing navigational risks and hazards to maritime traffic.⁸⁵¹ This may involve consultations with relevant stakeholders to ensure that offshore renewable energy projects are implemented safely and do not pose undue risks to navigation.

The IMO also establishes rules and guidelines for safe navigation and traffic management at sea.⁸⁵² These regulations help prevent collisions and other accidents involving vessels operating near offshore renewable energy sites. This guidance on routing and traffic separation schemes may also consider the presence of offshore installations.⁸⁵³ Routing and Traffic Separation Schemes (TSS) under SOLAS are established to organize the flow of maritime traffic, reducing the risk of

⁸⁴⁵ IMO, “Resolution A 671(16): Safety Zones and Safety of Navigation around Offshore Installations and Structures” adopted on 19 October 1989.

⁸⁴⁶ *Ibid.*

⁸⁴⁷ *Ibid* at art 1(a).

⁸⁴⁸ *Ibid* at art 1(c).

⁸⁴⁹ Ole K Fauchald, David Hunter & Xi Wang eds, “Yearbook on International Environmental Law” (United Kingdom: Oxford University Press, 2006) 221 at 228.

⁸⁵⁰ IMO, “Ship Design and Stability” Online: <<https://www.imo.org/en/OurWork/Safety/Pages/ShipDesignAndStability-default.aspx>> accessed 1 April 2024.

⁸⁵¹ Olav F Knudsen & Hassler Björn, “IMO Legislation and Its Implementation: Accident Risk, Vessel Deficiencies and National Administrative Practices” (2011) 35:2 *Marine Policy* at 201-207 Online: <<https://www.sciencedirect.com/science/article/pii/S0308597X10001673>> accessed 10 March 2024.

⁸⁵² *Ibid.*

⁸⁵³ International Convention for the Safety of Life at Sea (SOLAS), 1974, Ch V, regulation 10.

collisions and other accidents.⁸⁵⁴ These measures are particularly important in congested or hazardous areas, such as straits, narrow passages, and areas with heavy shipping traffic.

Additionally, while the IMO's primary focus is on preventing marine pollution from ships, its regulations indirectly contribute to environmental protection around offshore renewable energy installations.⁸⁵⁵ For instance, regulations on ballast water management and anti-fouling systems aim to minimize the environmental impact of vessels operating in offshore areas.⁸⁵⁶

Furthermore, the IMO collaborates with other international organizations and stakeholders to address maritime challenges, including those related to offshore renewable energy.⁸⁵⁷ While the IMO does not have specific regulations for renewable energy, it participates in initiatives aimed at promoting sustainable maritime development, which could include offshore renewable energy projects.⁸⁵⁸

4.2.2.2 International Renewable Energy Agency (IRENA)

IRENA, established in 2009, plays a pivotal role in promoting the global adoption and sustainable use of renewable energy, including ORE.⁸⁵⁹ IRENA provides policy advice, technical support, and capacity-building initiatives to its member states, facilitating the deployment of renewable energy technologies.⁸⁶⁰ IRENA's activities relevant to ORE include developing action agendas and policy recommendations to support the commercialization and large-scale deployment of offshore renewable technologies such as wind, wave, tidal, and floating photovoltaic systems.⁸⁶¹ For instance, IRENA has been involved in advising countries like Nigeria, Indonesia and the Philippines on regulatory frameworks and infrastructure planning for offshore wind projects.⁸⁶²

⁸⁵⁴ *Ibid.*

⁸⁵⁵ Tony Walker et al, "Environmental Effects of Marine Transportation" (2019) 3:2 *Ecological Issues and Envtl Impacts* at 505-530.

⁸⁵⁶ Stephan Gollasch et al, "Critical Review of the IMO International Convention on the Management of Ships' Ballast Water and Sediments" (2007) 6:4 *Harmful Algae* at 585-600.

⁸⁵⁷ Oleg Khalimonov, "Framework for Co-operation and Recent IMO Activities in Preventing and Managing Marine Pollution" (1999) 3:2 *Sing J Int'l & Com L* at 370-387.

⁸⁵⁸ Tae-Hwan Joung et al, "The IMO Initial Strategy for Reducing Greenhouse Gas (GHG) Emissions, and Its Follow-up Actions towards 2050." (2020) 4:1 *J Intl Maritime Safety Envtl Affairs & Shipping* at 1-7 Online: <<https://doi.org/10.1080/25725084.2019.1707938>> accessed on 15 March 2024.

⁸⁵⁹ IRENA, "Creation of IRENA" Online: <<https://www.irena.org/About/History/Creation-of-IRENA>> accessed 20 June 2024.

⁸⁶⁰ IRENA, "About IRENA" Online: <<https://www.irena.org/About>> accessed on 20 June 2024.

⁸⁶¹ *Ibid.*

⁸⁶² IRENA, "Renewable Energy Roadmap Nigeria" Online: <<https://www.irena.org/Publications/2023/Jan/Renewable-Energy-Roadmap-Nigeria>> accessed 20 June 2024; IRENA, "Renewable Energy in the Philippines" Online: <<https://www.irena.org/-/media/Files/IRENA/Agency/Events/2016/Dec/12/Philippines-presentation.pdf>> accessed on 20 June 2024; IRENA, "Indonesia Energy Transition Outlook", Online: <<https://www.irena.org/Publications/2022/Oct/Indonesia-Energy-Transition-Outlook>> accessed 20 June 2024.

The Agency is also involved in conducting research and publishing reports on the potential and benefits of ORE, including its role in achieving Sustainable Development Goals (SDGs), particularly SDG 7 (Affordable and Clean Energy).⁸⁶³ The Agency also fosters international cooperation and dialogue among stakeholders to address challenges and share best practices in ORE development.⁸⁶⁴ IRENA's approach ensures that the growth of ORE is aligned with global climate goals and contributes to a sustainable blue economy.⁸⁶⁵

IRENA has actively supported the growth of ORE through several initiatives. For example, the G20 Offshore Renewables Action Agenda -IRENA's report for the G20 outlines 50 actions to support the deployment of offshore renewables, emphasizing the need for robust policy frameworks, international cooperation, and investment in research and development (R&D).⁸⁶⁶ Through this IRENA promotes blue economy initiatives through the integration of ORE within the broader blue economy, which includes sectors like fisheries, shipping, and tourism.⁸⁶⁷ This integration aims to create socio-economic opportunities, such as job creation and local value chain development, particularly for coastal and island communities.⁸⁶⁸

4.3 Evolving International Law Principles

This section examines some international law principles which have informed environmental law and climate change law and policy, which may also inform ORE governance.

4.3.1 Precautionary Principle

The core idea of the precautionary principle is to take proactive action in the face of scientific uncertainty to prevent harm to the environment and human health.⁸⁶⁹ This principle is particularly relevant in the context of ORE projects, where the long-term impacts on marine ecosystems are not fully understood.⁸⁷⁰ The precautionary approach mandates that policymakers

⁸⁶³ IRENA, "Tracking SDG 7: The Energy Progress Report 2024" Online: < <https://www.irena.org/Publications/2024/Jun/Tracking-SDG-7-The-Energy-Progress-Report-2024>> accessed 20 June 2024.

⁸⁶⁴ IRENA, "About IRENA" Online: < <https://www.irena.org/About>> accessed 20 June 2024.

⁸⁶⁵ IRENA, "Offshore Renewables: Powering the Blue Economy" (Abu Dhabi: International Renewable Energy Agency, 2020) at 8-48 Online: < https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Dec/IRENA_Offshore_renewables_2020.pdf> accessed on 20 June 2024.

⁸⁶⁶ IRENA, "Offshore Renewables: An Action Agenda for Deployment" (Abu Dhabi: International Renewable Energy Agency, 2021) at 10-25 Online: < https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2021/Jul/IRENA_G20_Offshore_renewables_2021.pdf> accessed 20 June 2024.

⁸⁶⁷ IRENA, "Fostering a Blue Economy: Offshore Renewable Energy" (Abu Dhabi: International Renewable Energy Agency, 2020) at 8-48 Online: < https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Dec/IRENA_Fostering_Blue_Economy_2020.pdf> accessed June 2024.

⁸⁶⁸ *Ibid.*

⁸⁶⁹ Jonathan B Weiner, *Precaution and Climate Change* (Oxford: Oxford University Press, 2016) at 164.

⁸⁷⁰ *Ibid.*

and developers err on the side of caution, implementing preventive measures even when complete scientific data is lacking.⁸⁷¹ This principle is regarded as a fundamental approach in climate change policy, because climate change poses serious risks with latent effects, hence precautionary action is urged as necessary to prevent future disastrous climate change effects.⁸⁷²

The precautionary principle encourages proactive actions and opposes waiting to act after the damage is done which makes addressing the cause too late. The most widely recognized definition of this principle is contained in the Rio Declaration which states; “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”⁸⁷³

The historical development of this principle however is traced back to various public health and environmental policies in the 1960s and 1970s, being the derivative of the lay term ‘in dubio pro natura (if in doubt decide in favor of the environment) or the maxim, ‘better safe than sorry’ and the subject of growing scholarship⁸⁷⁴. In the early 1980s the principle began to emerge in the sphere of international law, significantly in the 1982 World Charter for Nature⁸⁷⁵, the 1985 Vienna Convention for the Protection of the Ozone Layer, the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, marine environmental treaties, the 1991 Bamako Convention on the Ban of Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa. The 1987 Our Common Future United Nations report known as the Brundtland Report⁸⁷⁶, highlighted the need for policies that anticipate and prevent environmental harm as part of sustainable development. The precautionary principle is also reputed to have been adopted in other international agreements, with earlier versions found in the German Vorsorgeprinzip, Swiss and Swedish law.⁸⁷⁷ In the United States, the Federal Court of Appeal, held

⁸⁷¹ *Ibid.*

⁸⁷² *Ibid.*

⁸⁷³ Rio Declaration on Environment and Development, 1992, Principle 15.

⁸⁷⁴ Tollefson Chris, “A Precautionary Tale: Trials and Tribulations of the Precautionary Principle” (Calgary: University of Calgary Press, 2019) 4411 Env Courtroom at 18 Online: <<https://canlii.ca/t/t1n4>> accessed on 13 December 2023.

⁸⁷⁵ UN General Assembly, “World Charter for Nature” 28 October 1982, A/RES/37/7 Online: <<https://www.refworld.org/docid/3b00f22a10.html>> accessed on 13 December 2023.

⁸⁷⁶ World Commission on Environment and Development, “Our Common Future (Brundtland Report)” (United Nations, 1987) Online: <<https://www.are.admin.ch/are/en/home/media/publications/sustainable-development/brundtland-report.html>> accessed 12 December 2023.

⁸⁷⁷ Jonathan B Weiner, *Precaution and Climate Change* (Oxford: Oxford University Press, 2016) at 164.

in *Ethyl Corp. v EPA*⁸⁷⁸, that the US Clean Air Act is a precautionary law, authorizing the US EPA to take regulatory decisions to prevent anticipated but uncertain future harms.

The 1992 Rio Declaration, however, marked an important stride for the precautionary principle as it gained international recognition and became formally introduced to the international community. Since the Rio Declaration, it has been incorporated into numerous treaties and agreements, such as the 1992 Convention on the Law of the Non-Navigational Uses of International Watercourses,⁸⁷⁹ the 1992 Convention on Biological Diversity⁸⁸⁰ (Preamble), United Nations Framework Convention on Climate Change (UNFCCC)⁸⁸¹, Kyoto Protocol⁸⁸² and the Paris Agreement.⁸⁸³ Under Article 3.3 of the UNFCCC Parties are mandated to take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects.⁸⁸⁴ Where there are threats of serious or irreversible damage, lack of full scientific certainty must not be the reason measures are postponed, these measures should consider policies and measures to combat climate change which should be cost effective so as to ensure global benefits to the lowest possible cost.⁸⁸⁵

Several international legal cases have highlighted the application of the precautionary principle. In the Southern Bluefin Tuna cases, the International Tribunal for the Law of the Sea (ITLOS) underscored the importance of acting with "prudence and caution," aligning closely with the precautionary approach.⁸⁸⁶ Although the tribunal did not explicitly reference the principle in its decisions, the implied necessity for precautionary measures was evident.⁸⁸⁷ In another significant case, the Gabčíkovo-Nagymaros Project, the International Court of Justice (ICJ) considered the precautionary principle within the broader context of sustainable development and environmental protection.⁸⁸⁸ The court's emphasis on integrating precaution into environmental

⁸⁷⁸ 541 F.2d 1 (D.C Cir. 1976).

⁸⁷⁹ Convention on the Law of the Non-Navigational Uses of International Watercourses, 21 May 1997, 36 ILM 700 (entered into force 17 August 2014).

⁸⁸⁰ CBD 1992.

⁸⁸¹ UNFCCC 1992.

⁸⁸² Kyoto Protocol to the United Nations Framework Convention on Climate Change, 11 December 1997, 2303 UNTS 148 (entered into force 16 February 2005).

⁸⁸³ Paris Agreement 2015.

⁸⁸⁴ UNFCCC 1992, Art 3.3.

⁸⁸⁵ *Ibid.*

⁸⁸⁶ *Southern Bluefin Tuna Cases (New Zealand v Japan; Australia v Japan)*, Provisional Measures, Order of 27 August 1999, ITLOS Reports 1999, 280. Online: < <https://itlos.org/en/main/cases/list-of-cases/case-no-3-4/> > accessed 20 July 2024.

⁸⁸⁷ *Ibid.*

⁸⁸⁸ *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)* (Judgment of 25 September 1997) Online: < <https://www.icj-cij.org/case/92/judgments> > accessed 20 July 2024.

decision-making reflects its growing importance in international jurisprudence.⁸⁸⁹ Additionally, the ITLOS Advisory Opinion on Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area, underscored the precautionary principle as a general obligation for states.⁸⁹⁰ This advisory opinion reinforced the idea that states must take precautionary actions when engaging in activities that could have significant environmental impacts.⁸⁹¹ The principle applies to climate change, where the potential for harm is significant, and precautionary measures are essential to mitigate or prevent adverse effects on the environment.⁸⁹² This advisory opinion also addressed the responsibilities and obligations of states under UNCLOS when sponsoring activities in the deep seabed, known as "the Area."⁸⁹³

The 2007 IUCN Guidelines for Applying the Precautionary Principle to Biodiversity Conservation and Natural Resource Management have made a substantial contribution to the development and practical application of the precautionary principle.⁸⁹⁴ By providing clear guidance, promoting early and adaptive action, and encouraging inclusive and transparent decision-making, the guidelines have strengthened the use of the precautionary principle in conservation and natural resource management.⁸⁹⁵ This has helped ensure that decisions are made in a way that protects biodiversity, even in the face of scientific uncertainty, thereby supporting the broader goals of environmental sustainability and conservation.⁸⁹⁶

The Guidelines also contribute to clarifying the role of adaptive management in relation to precaution.⁸⁹⁷ It contributes to this relationship by clarifying that applying the precautionary principle may sometimes require strict prohibition of activities which is particularly pertinent in situations where urgent measures are required to avert imminent potential threats.⁸⁹⁸ These instances include where the potential damage is likely to be immediately irreversible (such as the spread of an invasive species), where particularly vulnerable species or ecosystems are concerned,

⁸⁸⁹ *Ibid.*

⁸⁹⁰ ITLOS, "ITLOS Advisory Opinion on Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area" Online: < <https://www.itlos.org/index.php?id=109> > accessed on 10 August 2024.

⁸⁹¹ *Ibid.*

⁸⁹² *Ibid.*

⁸⁹³ *Ibid.*

⁸⁹⁴ IUCN, *Guidelines for Applying the Precautionary Principle to Biodiversity Conservation and Natural Resource Management* (Gland, Switzerland: IUCN, 2007) at 1-10.

⁸⁹⁵ *Ibid.*

⁸⁹⁶ *Ibid.*

⁸⁹⁷ *Ibid.* at 9-10.

⁸⁹⁸ *Ibid.* at Guideline 12.

and where other measures are likely to be ineffective.⁸⁹⁹ It reiterates that these situations are often the result of a failure to apply more moderate measures at an earlier stage.⁹⁰⁰

The Guidelines further suggests that adaptive management is a practical method for dealing with the inherent uncertainties in managing natural resources and biodiversity.⁹⁰¹ It allows for the continuous refinement of management practices, reducing the likelihood of negative impacts and ensuring that conservation efforts are both effective and precautionary.⁹⁰² Rather than waiting for full scientific certainty before taking action, adaptive management enables the implementation of precautionary measures that can be adjusted as new information becomes available.⁹⁰³ In the context of ORE, the application of the precautionary principle through adaptive management might be beneficial. ORE projects often involve new technologies and operate in sensitive marine environments, where potential impacts may not be fully understood. Adaptive management could allow for ongoing monitoring and adjustment of ORE activities to mitigate unforeseen environmental consequences, ensuring that the development of renewable energy is both precautionary and sustainable.

The precautionary principle could provide a framework for policymakers to base decisions that anticipate environmental degradation, rather than merely responding to its consequences. This is especially important to ORE activities since ORE effects may be far-reaching and irreversible.⁹⁰⁴ Hence, the precautionary principle supports the adoption of forward-thinking policies that prioritize risk mitigation and sustainability. Especially as biodiversity loss, extreme weather events and melting polar ice caps are already aggravated by climate change with long-term impacts on the global ecosystem.⁹⁰⁵

The principle's application has also expanded beyond preventing harm to human health, encompassing broader environmental concerns, including biodiversity conservation, natural resource management, and most importantly, climate change mitigation and adaptation. Thus, the significance of the precautionary principle may not be overstated, as the IPCC 2023 Report states

⁸⁹⁹ *Ibid.*

⁹⁰⁰ *Ibid.*

⁹⁰¹ *Ibid.*

⁹⁰² *Ibid* at 10.

⁹⁰³ *Ibid.*

⁹⁰⁴ Jonathan B Weiner, *Precaution and Climate Change* (Oxford: Oxford University Press, 2016) at 165.

⁹⁰⁵ NRDC, "What are the Effects of Climate Change?" (24 October 2022) Online: < <https://www.nrdc.org/stories/what-are-effects-climate-change> > accessed 12 December 2023.

that climate change is more concerning with risks increasing at every corresponding increment of warming.⁹⁰⁶ The current realities on climate change are characterized by complex systems and uncertainties which present risks that are not fully understood yet potentially catastrophic.⁹⁰⁷

Other significant contributions of the principle in the ORE policy landscape include underscoring the ethical responsibility towards future generations by ensuring current actions are without compromising on sustainability and enhances climate resilience.⁹⁰⁸ This could also lead to the promotion of strategies aimed at reducing greenhouse gas emissions, adaptive management and promoting renewable energy.

4.3.1.1 Case Studies Illustrating the Application of the Precautionary Principle

This Section illustrates the application of the precautionary principle in several jurisdictions to draw out key conclusions regarding the influence levels of this principle globally in policy. One illustration is the European Union's Emission Trading Scheme (ETS), acclaimed as the world's first major carbon market, a cornerstone of the EU's policy to combat climate change and represents a proactive approach to reduce greenhouse gas emissions.⁹⁰⁹ Despite uncertainties regarding the best methods for reducing emissions and their economic impacts, the EU implemented this cap-and-trade system to limit and reduce emissions effectively by around 10%.⁹¹⁰

The system works by putting a limit on overall emissions from covered installations. Here companies enjoy the flexibility to cut their emissions in the most effective way as they can buy or sell emission allowances within the overall limit.⁹¹¹ This case highlights how the precautionary principle can lead to innovative policy solutions in climate change mitigation.

Germany's Energiewende (Energy Transition) which was Germany's commitment to phasing out nuclear energy and investing heavily in renewable energy sources like wind and solar

⁹⁰⁶ Intergovernmental Panel on Climate Change, "AR6 Synthesis Report: Climate Change 2023" (Geneva, Switzerland: IPCC, 2023) Online: < https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf> accessed on 12 October 2023.

⁹⁰⁷ *Ibid.*

⁹⁰⁸ *Ibid.*

⁹⁰⁹ European Commission, "EU Emissions Trading System (EU ETS)" Online:< https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en#:~:text=The%20EU%20ETS%20is%20a, and%20remains%20the%20biggest%20one.> accessed 12 December 2023.

⁹¹⁰ A Dechezleprêtre, D Nachtigall & F Venmans, "The Joint Impact of the European Union Emissions Trading System on Carbon Emissions and Economic Performance" (2003) 118 *J Envtl Econ & Management* at 102758.

⁹¹¹ Climate Action, "The EU Emissions Trading System (EU ETS)" (2013) Online: < https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en > accessed 15 December 2023.

power is also a prime example of the precautionary principle in action.⁹¹² Following the Fukushima nuclear disaster in 2011, Germany accelerated its energy transition, prioritizing renewable energy over nuclear power to prevent potential environmental and health risks associated with nuclear energy.⁹¹³

Australia's approach to managing the Great Barrier Reef showcases another example of the precautionary principle in conserving biodiversity. Faced with threats like coral bleaching due to climate change, the Australian government has implemented policies to reduce water pollution and manage fishing activities, even though the full impact of these activities on the reef's health is not entirely clear⁹¹⁴. This approach reflects a commitment to protect the reef from potential irreversible damage.

The Netherlands, a country largely below sea level, has implemented extensive flood defense systems as a precaution against sea-level rise and extreme weather events exacerbated by climate change.⁹¹⁵ The Delta Works, a massive system of dams, sluices, locks, dikes, and storm surge barriers, exemplifies a proactive approach in climate adaptation, showcasing the principle of 'preparing for the worst while hoping for the best.'⁹¹⁶

4.3.1.2 Assessment of the Effectiveness of Precautionary Measures

Over the years, the precautionary principle has been the subject of debate and critics have argued that it can lead to overly cautious policies that hinder technological and economic development.⁹¹⁷ Proponents, however, advocate for its necessity in dealing with the uncertainties and potential risks of climate change.⁹¹⁸ This ongoing debate has led to a more nuanced understanding of the effectiveness of the principle, emphasizing the need for balance between precaution and progress.⁹¹⁹ The effectiveness of precautionary measures in policy can be assessed

⁹¹² Craig Morris et al, "The German Energiewende: Community-Driven Since the 1970s" (2014) at 105-113 Online: <<https://doi.org/10.1016/B978-0-12-397914-8.00007-2>> accessed 15 December 2023.

⁹¹³ D Smyrgala, "Fukushima and Energiewende: Impact on Structure of Power Generation" (2017) 12:4 *Energy Sources Part B: Econ Planning & Pol'y* at 332-337.

⁹¹⁴ K Vella & A Dale, "An Approach for Adaptive and Integrated Environmental Planning to Deal with Uncertainty in a Great Barrier Reef Catchment" (2014) 51(3) *Australian Planner* at 243-259 Online: <<https://www.tandfonline.com/doi/epdf>> accessed 15 December 2023.

⁹¹⁵ R Slomp, "Implementing Risk- Based Flood Defence Standards" (Rotterdam, The Netherlands: Rijkswaterstaat, 2016) at 6-83 Online: <aandeslagmetdeomgevingswet.nl> accessed on 15 December 2023.

⁹¹⁶ *Ibid.*

⁹¹⁷ M Ahteensuu & MP Sandin, "The Precautionary Principle", In S Roeser, R Hillerbrand, et al (eds), "*Handbook of Risk Theory*" (2012) at 961-978 Online: <https://doi.org/10.1007/978-94-007-1433-5_38> accessed 15 December 2023.

⁹¹⁸ *Ibid.*

⁹¹⁹ *Ibid.*

by examining various dimensions of their impact, including environmental, social, economic, and political outcomes.

Precautionary measures have had notable successes in reducing greenhouse gas emissions, preserving biodiversity, and promoting sustainable resource management. For instance, policies aimed at reducing emissions in the EU have led to a significant decrease in greenhouse gases, demonstrating the environmental effectiveness of these measures.⁹²⁰ Similarly, conservation efforts in regions like the Amazon have helped in preserving crucial ecosystems.⁹²¹ Also, precautionary measures often lead to improved public health and social well-being.⁹²² For example, the shift towards renewable energy sources not only addresses climate change but also reduces air pollution, which has direct benefits for public health.⁹²³ Additionally, policies like the Payment for Ecosystem Services program in Costa Rica have provided financial incentives to landowners, promoting social equity and economic sustainability.⁹²⁴

While the immediate economic impact of precautionary measures can be a concern, particularly in terms of costs and resource allocation, these measures often lead to long-term economic benefits. Investment in renewable energy technologies, for instance, has created new industries and job opportunities.⁹²⁵ Precautionary measures have also fostered greater political cooperation on climate issues, as seen in international agreements like the Paris Agreement.⁹²⁶

Despite these successes, there are challenges in implementing precautionary measures. These include resistance from certain economic sectors, the difficulty in balancing short-term costs with long-term benefits, and the complexities of translating precautionary policies into effective action.⁹²⁷ Additionally, there is a risk of over-caution, where excessively conservative measures might hinder technological innovation or economic development.⁹²⁸ The effectiveness of

⁹²⁰ European Commission, “EU Emissions Trading System (EU ETS)” Online: < https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en#:~:text=The%20EU%20ETS%20is%20a,and%20remains%20the%20biggest%20one.> accessed on 12 December 2023.

⁹²¹ BS Soares-Filho et al, “Modelling Conservation in the Amazon Basin” (2006) 440:7083 *Nature* at 520-523 Online: < <https://www.nature.com/articles/nature04389>> accessed on 12 December 2023.

⁹²² JA Wardekker et al, “Health Risks of Climate Change: An Assessment of Uncertainties and its Implications for Adaptation Policies” (2012) 11:1 *Envtl Health* at 1-16 Online: < <https://link.springer.com/article/10.1186/1476-069X-11-67>> accessed on 12 December 2023.

⁹²³ *Ibid.*

⁹²⁴ RA Arriagada et al, “Do payments pay off? Evidence from participation in Costa Rica’s PES program” (2015)10:8 *PloS One* at 1-17 Online: < <https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0131544&type=printable>> accessed 15 December 2023

⁹²⁵ International Labour Association, “Renewable Energy Jobs Hit 12.7 Million Globally” (22 September 2022) Online: < https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_856515/lang--en/index.htm> accessed 15 December 2023.

⁹²⁶ UNFCCC, “First Global Stocktake Under the Paris Agreement” Online: < https://unfccc.int/sites/default/files/resource/GST_2.pdf> accessed 15 December 2023.

⁹²⁷ Weiner, Jonathan B, “Precaution and Climate Change” (2016, *The Oxford Handbook of International Climate Law*, Oxford University Press) at 164-180.

⁹²⁸ *Ibid.*

precautionary measures is enhanced when coupled with adaptive management strategies.⁹²⁹ This approach involves continuous monitoring, evaluation, and adjustment of policies based on new scientific information and changing environmental conditions.⁹³⁰ It allows for learning from past experiences and adjusting strategies accordingly.⁹³¹

Another aspect that affects the effectiveness of precautionary measures is the debate over precautionary principle and precautionary approach.⁹³² Some interpretations of the precautionary principle call for strong, preemptive measures, even if the probability of harm is uncertain.⁹³³ This strong form can lead to stringent regulations or even bans on activities perceived as risky, often criticized for being overly cautious and hindering technological innovation and economic development.⁹³⁴ The precautionary approach, while similar in intent, is generally seen as a more flexible and pragmatic application of precautionary measures.⁹³⁵ It often involves a case-by-case evaluation where precautionary actions are tailored to specific risks, considering the broader context, including socio-economic factors and the feasibility of precautionary measures.⁹³⁶

The debate between the precautionary principle and the precautionary approach affects the effectiveness of precautionary measures in several ways such as regulatory ambiguity, policy implications and effectiveness in addressing environmental issues.⁹³⁷ For regulatory ambiguity, the lack of a universally accepted definition of the precautionary principle versus the precautionary approach can lead to inconsistent application in environmental regulation.⁹³⁸ For instance, some jurisdictions might adopt a stringent interpretation that hampers innovation, while others might take a more flexible approach that could fail to adequately protect the environment.⁹³⁹ The debate influences legal interpretations and policy formulations.⁹⁴⁰ Courts and regulators may interpret the precautionary principle differently, leading to varied outcomes in environmental litigation and policy enforcement. This can create uncertainty for businesses and other stakeholders,

⁹²⁹ *Ibid*

⁹³⁰ *Ibid*

⁹³¹ *Ibid*

⁹³² Nathan Dinneen, "Precautionary Discourse: Thinking Through the Distinction Between the Precautionary Principle and the Precautionary Approach in Theory and Practice" (April 2013) 32:1 *Pol & Life Sciences* at 2-21 Online: <<https://pubmed.ncbi.nlm.nih.gov/24047088/>> accessed on 21 August 2024.

⁹³³ *Ibid.*

⁹³⁴ *Ibid.*

⁹³⁵ *Ibid.*

⁹³⁶ *Ibid.*

⁹³⁷ Lauren Hartzell-Nichols, "From 'The' Precautionary Principle to Precautionary Principles", (1 October 2013) 16:3 *Ethics Pol'y & Envt* at 308-320 Online: <<https://www.tandfonline.com/doi/full/10.1080/21550085.2013.844569>> accessed on 21 August 2024

⁹³⁸ *Ibid.*

⁹³⁹ *Ibid.*

⁹⁴⁰ *Ibid.*

complicating compliance and planning.⁹⁴¹ The effectiveness of precautionary measures depends on how well they are implemented and enforced.⁹⁴² A precautionary principle that is too rigid may prevent necessary developments or innovations that could contribute to solving environmental problems.⁹⁴³ Conversely, an overly flexible precautionary approach might not provide sufficient protection, leading to environmental degradation.⁹⁴⁴

Thus, the debate between the precautionary principle and the precautionary approach is critical to understanding how precautionary measures are implemented in environmental governance. The choice between these two concepts can significantly influence the stringency, flexibility, and ultimately, the effectiveness of environmental protection efforts.⁹⁴⁵ Policymakers, regulators, and stakeholders must carefully consider how to apply precautionary measures in a way that balances environmental protection with economic and social realities.⁹⁴⁶

Quantifying the effectiveness of precautionary measures is complex. It often requires a multidisciplinary approach, incorporating environmental science, economics, sociology, and political science. Indicators such as emission levels, biodiversity indices, and economic growth can provide insights, but they must be contextualized within the broader goals of sustainable development and climate resilience.⁹⁴⁷ The effectiveness of precautionary measures in policy is multifaceted and context dependent, while there are notable successes and benefits, challenges remain in ensuring these measures are balanced, economically viable, and politically feasible. Continuous evaluation and adaptive management are key to enhancing their effectiveness and achieving long-term sustainability goals.

4.3.2 Public Participation

Public participation in environmental law making is a democratic process that involves engaging the general public in the decision-making processes related to environmental policies and climate change initiatives.⁹⁴⁸ This concept is founded on the belief that those affected by

⁹⁴¹ John S Applegate, “The Taming of the Precautionary Principle” (2002) 27 *Wm & Mary Envtl. L & Pol’y Rev* at 13 Online: <<https://heinonline.org/HOL/LandingPage?handle=hein.journals/wmelpr27&div=8&id=&page=>> accessed 21 August 2024.

⁹⁴² *Ibid.*

⁹⁴³ *Ibid.*

⁹⁴⁴ *Ibid.*

⁹⁴⁵ Carl Smith, “The Precautionary Principle and Environmental Policy” (2000) 6:3 *Int J Occupational & Envtl Health* at 263-330 Online: <<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=d08d5f5e5a341ef6f4b375d22e09ea7a5260c454>> accessed 21 August 2024.

⁹⁴⁶ *Ibid.*

⁹⁴⁷ *Ibid.*

⁹⁴⁸ Collado, *supra* note 639.

environmental decisions should have a voice in making those decisions.⁹⁴⁹ The importance of public participation in this context can be understood through several key dimensions such as ensuring that environmental decision making involves input from a broader range of stakeholders and not solely in the hands of a few policymakers.⁹⁵⁰ Also, incorporating diverse perspectives is another key dimension as climate change affects various groups differently for which public participation accommodates the inclusion of all these diversity.⁹⁵¹ Which makes for better governance, as policies developed with public input are often more efficient, effective and easier to implement. For instance, the Nova Scotia Environment Act enjoyed a high-level public engagement which made it still relevant years later.⁹⁵² This showcases how diversity of viewpoints can lead to more comprehensive and inclusive policies that address the needs and concerns of all affected groups. Additionally, policies with public input are often easier to implement as the people feel their voices heard and they are more likely to support and comply with the policies.⁹⁵³

Engaging the public in environmental lawmaking builds public awareness and education about climate change, its impacts, the need for mitigation and adaptation measures.⁹⁵⁴ Climate education is an important component of climate change as an informed public is more likely to support necessary but disruptive policies. This provides the platform for developing adaptive strategies that are responsive to local conditions and needs whilst building resilience.⁹⁵⁵ Public participation is relevant at all levels, from the local community initiatives to global climate negotiations. The involvement of civil society groups, non-governmental organizations and individual citizens provides the platform to hold policymakers accountable for their decisions, whilst ensuring these policies are grounded in local realities and challenges. Thus, public participation in environmental law making is a necessity for effective, inclusive and sustainable climate change policy. This is because it ensures policies are responsive to the needs and aspirations of those most affected by policies.

⁹⁴⁹ *Ibid.*

⁹⁵⁰ *Ibid at 296.*

⁹⁵¹ *Ibid.*

⁹⁵² *Ibid at 298.*

⁹⁵³ *Ibid.*

⁹⁵⁴ *Ibid.*

⁹⁵⁵ *Ibid.*

4.3.2.1 Methods and Mechanisms for Public Engagement in Policy Making

Public participation in policy encompasses a wide range of methods and mechanisms through which the public is involved in the development, implementation, and evaluation of climate-related policies and actions. This engagement is designed to involve different segments of society in meaningful and effective ways. These methods range from traditional public forums to innovative digital platforms, reflecting the diverse ways in which the public can contribute to policymaking.⁹⁵⁶

One of such traditional mechanisms include public forums and town hall meeting which are platforms where community members, experts, and policymakers can interact directly.⁹⁵⁷ It offers the opportunity for open dialogue where community members, experts and policymakers can express concerns, ask questions, and offer suggestions on climate-related issues.⁹⁵⁸ Governments and policy-making bodies also hold these events to gather input from citizens and stakeholders on proposed policies or projects.⁹⁵⁹ This often involves consultations and public hearings which may extend beyond consultation to direct involvement in decision-making, participatory budgeting for climate-related projects or community-led decision-making in local climate adaptation and mitigation strategies.⁹⁶⁰ Sometimes advisory committees composed of citizens are formed to provide ongoing input on policies and these committees can offer a sustained platform for public engagement ensuring that diverse perspectives are considered in policy development and implementation.⁹⁶¹

Online consultations and surveys using digital tools have become an increasingly important method in facilitating public participation, governments and organizations use online surveys, polls, and consultation platforms to gather broad-based input on policies and initiatives, allowing for wider and more diverse participation.⁹⁶² Social media platforms and digital campaigns are powerful tools for raising awareness, mobilizing public opinion, advocating for climate action.⁹⁶³

⁹⁵⁶ *Ibid.*

⁹⁵⁷ Maddy Kroot, "How to Build a Powerline: Fast Policies for Decarbonization, the Slow Work of Public Participation, and the Profitability of Energy Capital"(2024)117 Energy Research & Social Science at 103730 Online: <<https://doi.org/10.1016/j.erss.2024.103730>> accessed on 29 August 2024.

⁹⁵⁸ *Ibid.*

⁹⁵⁹ *Ibid.*

⁹⁶⁰ *Ibid.*

⁹⁶¹ United Nations Climate Change, "Public Participation under Action for Climate Empowerment" Online: < <https://unfccc.int/topics/education-and-outreach/workstreams/public-participation#:~:>> accessed on 15 December 2023.

⁹⁶² *Ibid.*

⁹⁶³ *Ibid.*

This can reach a large audience quickly and is particularly effective in engaging younger generations.⁹⁶⁴

Another mechanism of public participation is the utilization of workshops and focus groups for smaller and targeted gatherings, to enable in depth discussions on specific aspects of policy.⁹⁶⁵ They are often used to explore complex issues, gather detailed feedback and develop consensus among key stakeholders.⁹⁶⁶ Engaging with diverse stakeholders, including businesses, NGOs, academic institutions, and indigenous groups, is crucial for comprehensive policy-making.⁹⁶⁷ These partnerships can facilitate the pooling of resources, knowledge and expertise.

Various citizen advisory panels, juries, community-based initiatives and local action groups are mechanisms for public participation. The citizen advisory panels are usually group of citizens randomly selected, who are given the task of deliberating on climate issues.⁹⁶⁸ They review evidence, hear from experts, and provide recommendations, offering a well-considered public perspective to policymakers.⁹⁶⁹ Grassroots movements and local action groups play a significant role in implementing climate change initiatives at the community level. These groups often lead local conservation efforts, renewable energy projects, and climate resilience activities. This also leads to the recognition and incorporation of indigenous knowledge and practices in policy, particularly in areas where indigenous communities are most affected by climate change.⁹⁷⁰ This approach respects traditional ways of living in harmony with nature and can offer valuable insights into sustainable practices.⁹⁷¹

These methods and mechanisms collectively ensure that public engagement in policy is inclusive, diverse and effective. By leveraging these various approaches, policymakers can ensure that policies and actions are grounded in the needs, values and aspirations of the people they are meant to serve.

⁹⁶⁴ *Ibid.*

⁹⁶⁵ Collado, *supra* note 639.

⁹⁶⁶ *Ibid.*

⁹⁶⁷ *Ibid.*

⁹⁶⁸ *Ibid.*

⁹⁶⁹ S Hügel, & AR Davies, “Public Participation, Engagement, and Climate Change Adaptation: A Review of the Research Literature” (2020) 11:4 *Wiley Interdisciplinary Reviews: Climate Change* at 645 Online: <<https://doi.org/10.1002/wcc.645>> accessed on 12 July 2024.

⁹⁷⁰ *Ibid.*

⁹⁷¹ *Ibid.*

4.3.2.2 Case studies showcasing successful public participation initiatives

Several global case studies highlight successful public participation initiatives in climate change policy, demonstrating how diverse communities and stakeholders can effectively contribute to shaping and implementing climate-related strategies. One of such is seen in Denmark, which pioneered a unique approach to public engagement in policymaking through consensus conferences. These conferences involve a panel of lay citizens who learn about a complex issue (such as climate change), consult with experts, and then draft recommendations.⁹⁷² This model has been influential in shaping Danish renewable energy policies, including wind energy development, where public consensus supported the transition towards more sustainable energy sources.⁹⁷³

In Bhutan, community forestry initiatives empower local communities to manage forest resources.⁹⁷⁴ This participatory approach has been critical in preserving forests and biodiversity, contributing to Bhutan's commitment to maintaining carbon neutrality.⁹⁷⁵ The program not only involves communities in forest conservation but also in decision-making processes related to climate change mitigation.

Also, the city of Vancouver in Canada engaged its citizens in developing the Greenest City 2020 Action Plan.⁹⁷⁶ Through public forums, online platforms, and community workshops, the city gathered input from residents on goals and actions for sustainability.⁹⁷⁷ This inclusive process led to ambitious targets for reducing greenhouse gas emissions, enhancing urban green spaces, and promoting sustainable transportation.⁹⁷⁸

Various cities in California, USA, have developed local climate action plans with extensive public input.⁹⁷⁹ Processes typically involve community workshops, stakeholder meetings, and public comment periods. These plans address local climate risks and outline strategies for reducing emissions, improving energy efficiency, and adapting to climate change impacts.⁹⁸⁰

⁹⁷² Grundahl, Johs, "The Danish Consensus Conference-Model" (1995) *Public Participation in Science* 31-40.

⁹⁷³ *Ibid.*

⁹⁷⁴ MR Moktan, L Norbu & K Choden, "Can Community Forestry Contribute to Household Income and Sustainable Forestry Practices in Rural Area? A Case Study from Tshapey and Zariphensum in Bhutan Forest" (2016) 62 *Pol'y & Econ* at 149-157.

⁹⁷⁵ Phuntsho Sonam, "Forests, community forestry and their significance in Bhutan" (2011) *Community Forestry in Bhutan* at 1.

⁹⁷⁶ J Affolderbach & C Schulz, "Positioning Vancouver Through Urban Sustainability Strategies? The Greenest City 2020 Action Plan" (2017) 164 *J Cleaner Production* at 676-685.

⁹⁷⁷ *Ibid.*

⁹⁷⁸ Rahoui Hala, "Greenest City 2020" (Vancouver: Urban Planning for Transitions, 2021) at 47-67.

⁹⁷⁹ LW Bedsworth & E Hanak, "Climate Policy at the Local Level: Insights from California" (2013) 23:3 *Global Environmental Change* at 664-677.

⁹⁸⁰ *Ibid.*

France also convened a Citizens' Assembly on Climate Change, composed of 150 randomly selected citizens, to develop recommendations for reducing the country's carbon footprint.⁹⁸¹ The assembly's proposals influenced national policy, demonstrating the potential of citizen assemblies in shaping high-level climate strategies.⁹⁸²

Each of these case studies illustrates the powerful impact of involving the public in climate change policymaking. From local forest management to national energy strategies, these examples show that effective public participation can lead to more informed, inclusive, and sustainable policies and actions.

4.3.2.3 Challenges and limitations of public participation

While public participation is a critical aspect of effective climate change policy, it is not without its challenges and limitations. These challenges can impact the efficiency, inclusiveness, and overall effectiveness of public engagement processes. Ensuring representation and inclusivity such that the participation process is genuinely representative and inclusive can be difficult. There's a risk of only hearing the voices of the most vocal or engaged community members, while marginalized groups, including minorities and economically disadvantaged populations, might be underrepresented.⁹⁸³

Even as online platforms have expanded the scope of public participation, there remains a digital divide. Not all community members have equal access to digital tools, which can limit their ability to participate in online engagement processes. More so, effective participation requires the public to be well-informed about the complexities of climate change. However, there can be significant gaps in knowledge and understanding, making it challenging for people to contribute meaningfully to technical discussions. There is also a need to balance lay opinions with expert knowledge to ensure that policies are scientifically sound and technically feasible⁹⁸⁴

Also, public participation processes can be resource-intensive and time-consuming. This can be a challenge for both organizers and participants, particularly for those who cannot afford to invest time due to work or other commitments.⁹⁸⁵ In addition, there is a potential for disagreement,

⁹⁸¹ Louis-Gaëtan Giraudet et al, "Deliberating on Climate Action: Insights from the French Citizens' Convention for Climate" (2021) Hal-03119539.

⁹⁸² *Ibid.*

⁹⁸³ Collado, *supra* note 639.

⁹⁸⁴ *Ibid.*

⁹⁸⁵ *Ibid* at 293-294.

especially as climate change is a contentious issue, and public participation processes can sometimes lead to conflict. Differing values, interests, and priorities among stakeholders can make it challenging to reach a consensus.⁹⁸⁶

The local nature of many public participation initiatives can limit their impact on broader, more systemic climate change issues. Scaling up local success to have a more significant impact can be a substantial challenge,⁹⁸⁷ which may also be limited by political and institutional frameworks that are not conducive to inclusive and effective engagement. Bureaucratic hurdles, lack of political will, and insufficient legal frameworks can impede meaningful public involvement.⁹⁸⁸ Ensuring the sustainability and continuity of participation efforts over time is challenging, especially in the face of changing political landscapes and policy priorities.⁹⁸⁹

Addressing these challenges requires thorough implementation of public participation processes, along with ongoing efforts to improve inclusivity, access to information, and the balancing of diverse interests and perspectives. It also calls for institutional and political commitment to genuinely integrate public input into climate change policy and action.

4.3.3 Ecosystem Approach

The ecosystem approach is a strategy for the integrated management of land, water, and living resources that promotes conservation and sustainable use in an equitable way. This approach is grounded in the understanding that ecosystems are dynamic, complex, and interrelated systems. The core principles of the ecosystem approach includes integrative management, sustainability, ecosystem function and services, adaptive management, decentralization and local participation, precautionary approach, economic context, equity and social justice, conservation of biodiversity, scale and context-specificity and inter-sectoral cooperation.⁹⁹⁰ These core principles collectively form the foundation of the ecosystem approach, guiding the management of ecosystems in a way that is sustainable, equitable, and adaptive to change, especially in the face of climate change challenges.

⁹⁸⁶ *Ibid* at 295.

⁹⁸⁷ *Ibid* at 296.

⁹⁸⁸ *Ibid* at 297-299.

⁹⁸⁹ *Ibid* at 300.

⁹⁹⁰ G Shepherd & Union mondiale pour la nature, 'The ecosystem approach: five steps to implementation' (Commission on ecosystem management, 2004) pp. 30-40 Gland: IUCN.

The ecosystem approach contributes to climate change resilience through its emphasis on the health, sustainability and interconnectivity of ecosystems. In significant ways it advocates enhancing natural carbon sinks like forests, wetlands and oceans, protecting and restoring biodiversity, regulating cycles and quality of water, supporting agricultural resilience, fostering adaptive capacity and incorporating traditional knowledge amongst other things.

Several global case studies demonstrate the practical application of the ecosystem approach in addressing climate change. They highlight how this approach can be effectively implemented to enhance climate resilience and sustainability. The Great Green Wall is an African-led initiative aimed at combating desertification, land degradation, and drought in the Sahel region.⁹⁹¹ This ambitious project involves planting a belt of trees across the entire width of Africa.⁹⁹² It exemplifies the ecosystem approach by restoring degraded landscapes, enhancing biodiversity, and improving livelihoods, thus contributing to climate resilience and carbon sequestration.⁹⁹³

Australia's management of the Great Barrier Reef represents an ecosystem approach in marine context. The management plan addresses climate change impacts, such as ocean acidification and coral bleaching, by improving water quality, reducing coastal development pressures, and enhancing reef resilience through scientific monitoring and community involvement.⁹⁹⁴ The park is divided into multiple zones, each with specific regulations on activities like fishing, diving, and boating. These zones are designed based on an ecosystem approach, considering the need to protect critical habitats, such as coral reefs and seagrass beds, while allowing sustainable use in other areas.⁹⁹⁵ The park management employs management practices, where continuous monitoring of the reef's health informs management decisions.⁹⁹⁶ For instance, if coral bleaching is detected, certain areas might be temporarily closed to reduce stress on the ecosystem.⁹⁹⁷

⁹⁹¹ D Goffner, H Sinare & LJ Gordon, "The Great Green Wall for the Sahara and the Sahel Initiative as an Opportunity to Enhance Resilience in Sahelian Landscapes and Livelihoods" (2019) 19 *Regional Envtl Change* at 1417-1428.

⁹⁹² *Ibid.*

⁹⁹³ *Ibid.*

⁹⁹⁴ Helsinki Commission (HELCOM), "Baltic Sea Action Plan" (2007) Online: <<https://helcom.fi/baltic-sea-action-plan/>> accessed 20 August 2024.

⁹⁹⁵ *Ibid.*

⁹⁹⁶ H Backer, "Transboundary Maritime Spatial Planning: A Baltic Sea Perspective" (2013) 42 *Marine Policy* 127.

⁹⁹⁷ *Ibid.*

Another example in the marine context is the Baltic Sea eutrophication management.⁹⁹⁸ The Baltic Sea region has implemented the ecosystem approach to combat eutrophication, a significant environmental problem caused by excessive nutrient inputs leading to algal blooms and oxygen depletion.⁹⁹⁹ The Helsinki Commission (HELCOM) developed the Baltic Sea Action Plan (BSAP), which incorporates the ecosystem approach to reduce nutrient inputs from agriculture, wastewater, and industrial sources.¹⁰⁰⁰ The plan sets targets for nutrient reductions and includes measures like improving wastewater treatment, promoting sustainable agricultural practices, and restoring wetlands.¹⁰⁰¹ The BSAP uses integrated monitoring and assessment to track the health of the Baltic Sea ecosystem.¹⁰⁰² Data on nutrient levels, algal blooms, and oxygen depletion are regularly collected and analyzed to inform management decisions and adjust strategies as needed.¹⁰⁰³ The ecosystem approach in the Baltic Sea has led to reductions in nutrient inputs and improved water quality in some areas.¹⁰⁰⁴ However, the Baltic Sea continues to face challenges related to eutrophication, requiring ongoing efforts and adaptive management to fully address the issue.

Also, in Tanzania, agroforestry practices have been implemented to improve food security and adapt to climate change.¹⁰⁰⁵ By integrating trees with crops and livestock, these practices improve soil fertility, enhance carbon storage, and increase agricultural resilience to climate variations.¹⁰⁰⁶

Rewilding efforts in various parts of Europe, such as the reintroduction of native species and restoration of natural landscapes, exemplify the ecosystem approach.¹⁰⁰⁷ These projects aim to restore ecological processes, enhance biodiversity, and build resilience against climate change impacts.

⁹⁹⁸ Helsinki Commission (HELCOM), “Baltic Sea Action Plan” (2007) Online: <<https://helcom.fi/baltic-sea-action-plan/>> accessed 20 August 2024.

⁹⁹⁹ *Ibid.*

¹⁰⁰⁰ *Ibid.*

¹⁰⁰¹ *Ibid.*

¹⁰⁰² *Ibid.*

¹⁰⁰³ H Backer, “Transboundary Maritime Spatial Planning: A Baltic Sea Perspective” (2013) *Marine Policy* 127-134.

¹⁰⁰⁴ *Ibid.*

¹⁰⁰⁵ A Faße & U Grote, “The Economic Relevance of Sustainable Agroforestry Practices—An Empirical Analysis from Tanzania” (2013) 94 *Ecological Econ* at 86-96.

¹⁰⁰⁶ *Ibid.*

¹⁰⁰⁷ M Root-Bernstein, J Gooden & A Boyes, “Rewilding in Practice: Projects and Policy” (2018) 97 *Geoforum* at 292-304.

The New York City's Green Infrastructure Program was aimed at the reduction of combined sewer overflows and improved water quality.¹⁰⁰⁸ This includes green roofs, rain gardens, and permeable pavements, which mimic natural hydrological processes and contribute to urban climate resilience.

These case studies demonstrate the diverse applications of the ecosystem approach in different contexts, from marine context to forest conservation to urban planning. They highlight how this approach not only addresses climate change mitigation and adaptation but also supports biodiversity, sustainable development and ORE within the marine context.

4.3.3.1 Barriers and Challenges of the Ecosystem Approach

While the ecosystem approach offers a framework for addressing ORE development, several barriers and challenges can impede its effective implementation. For instance, the ecosystem approach requires understanding complex ecological interactions and integrating multiple disciplines (ecology, economics, sociology, etc.). This complexity can be challenging for policymakers and practitioners who may lack the necessary interdisciplinary knowledge or resources.¹⁰⁰⁹ This is because effective implementation of the ecosystem approach often requires detailed ecological and socio-economic data. In many regions, especially in developing countries, such data are lacking or inadequate, hindering effective planning and decision-making.

Implementing the ecosystem approach requires coordinated action across various levels of governance and sectors. Institutional silos, bureaucratic hurdles, and lack of coordination among different agencies can significantly hinder this process.¹⁰¹⁰ Also, the ecosystem approach often requires significant investment for activities such as ecosystem restoration, conservation, and sustainable management. Securing adequate and sustained funding can be a major challenge, particularly in resource-constrained settings.¹⁰¹¹

Inadequate policy and regulatory frameworks can limit the implementation of the ecosystem approach. Policies that do not recognize the value of ecosystem services or that

¹⁰⁰⁸ SM Wong & FA Montalto, "Exploring the Long-Term Economic and Social Impact of Green Infrastructure in New York City" (2020) 56:11 *Water Resources Research*.

¹⁰⁰⁹ David Waltner-Toews, James J Kay & Nina-Marie E Lister, *The Ecosystem Approach: Complexity, Uncertainty, and Managing for Sustainability* (New York: Columbia University Press. 2008) at 20-30.

¹⁰¹⁰ *Ibid.*

¹⁰¹¹ *Ibid.*

incentivize unsustainable practices can undermine efforts to manage ecosystems sustainably.¹⁰¹² This may be due to the uncertainties associated with climate change, including unpredictable impacts on ecosystems, which pose a challenge to the adaptive management aspect of the ecosystem approach. These uncertainties can make it difficult to plan and implement long-term strategies.¹⁰¹³

Additionally, the success of the ecosystem approach depends on local community support and involvement. Social and cultural barriers, including resistance to change, lack of awareness, and differing values and priorities, can impede community engagement and acceptance.¹⁰¹⁴ This may give rise to conflicts of interest among stakeholders, such as between conservation goals and economic development objectives, can be a significant barrier. Balancing these competing interests in a way that is fair and equitable is challenging but essential for the success of the ecosystem approach. More so, effective ecosystem management often requires action at scales that transcend political and administrative boundaries. Managing ecosystems at appropriate ecological scales can be challenging due to jurisdictional and logistical complexities.¹⁰¹⁵

In addition, the ecosystem approach requires ongoing monitoring and evaluation to inform adaptive management.¹⁰¹⁶ However, establishing effective monitoring systems and interpreting complex ecological data can be challenging and resource intensive. Rapid and large-scale environmental changes, such as biodiversity loss and pollution, can outpace the efforts to implement the ecosystem approach, making it difficult to achieve desired conservation and sustainability outcomes.¹⁰¹⁷

Addressing these barriers and challenges requires a concerted effort from governments, international organizations, local communities, and other stakeholders. It involves enhancing institutional capacities, improving knowledge and data availability, securing adequate funding, fostering stakeholder collaboration, and adapting policies and regulations to support ecosystem-based management.

¹⁰¹² *Ibid* at 40-50.

¹⁰¹³ *Ibid.*

¹⁰¹⁴ *Ibid.*

¹⁰¹⁵ *Ibid.*

¹⁰¹⁶ *Ibid* at 60-70.

¹⁰¹⁷ *Ibid.*

4.3.4 Social Equity and Adaptive Management

Social equity in offshore renewable energy (ORE) development is essential to ensure that the benefits and burdens of renewable energy projects are distributed fairly across all communities.¹⁰¹⁸ It involves ensuring that all affected groups, including marginalized and disadvantaged communities, have a voice in the planning and implementation of ORE projects.¹⁰¹⁹ This is achieved through public consultations, stakeholder meetings, and participatory planning processes,¹⁰²⁰ whilst addressing issues of social justice. This further ensures that the economic and social benefits of ORE projects, such as job creation and community investments, are accessible to all, particularly those in low-income or historically marginalized areas.¹⁰²¹ Whilst also identifying and mitigating any adverse impacts on vulnerable communities, such as displacement or environmental degradation, to prevent exacerbation of existing inequalities.¹⁰²²

Adaptive management is a structured, iterative process of robust decision-making in the face of uncertainty, with an aim to reduce uncertainty over time via system monitoring.¹⁰²³ In the context of ORE, it involves implementing projects in a way that allows for monitoring, feedback, and adjustment based on new information and changing conditions.¹⁰²⁴ It also entails developing regulatory frameworks and management practices that can adapt to new scientific findings and technological advancements.¹⁰²⁵ This includes revising project plans and mitigation measures as new data on environmental impacts become available.¹⁰²⁶ It also involves engaging stakeholders in the monitoring and decision-making process to incorporate local knowledge and ensure that adaptive measures are responsive to community concerns and priorities.¹⁰²⁷

A practical application of adaptive management in ORE is the integration of environmental monitoring programs.¹⁰²⁸ For example, monitoring the impacts of wind farms on marine mammals

¹⁰¹⁸ Andres M Cisneros-Montemayor et al, “Social Equity and Benefits as the Nexus of a Transformative Blue Economy: A Sectoral Review of Implications” (Elsevier, November 2019) 109 *Marine Policy* at 103702.

¹⁰¹⁹ *Ibid.*

¹⁰²⁰ *Ibid.*

¹⁰²¹ *Ibid.*

¹⁰²² *Ibid.*

¹⁰²³ Lisen Schultz et al, “Adaptive Governance, Ecosystem Management, and Natural Capital” (16 June 2015) 112:24 *Proceedings of the National Academy of Sciences* at 7369-74 Online: < <https://www.pnas.org/doi/abs/10.1073/pnas.1406493112> > accessed on 27 June 2024.

¹⁰²⁴ *Ibid.*

¹⁰²⁵ Bosselman Fred, “A Role for State Planning: Intergenerational Equity and Adaptive Management” (2000) 12 *U Fla JL & Pub Pol’y* 311 Online: < <https://heinonline.org/HOL/LandingPage?handle=hein.journals/ufpp12&div=22&id=&page=> > accessed on 27 June 2024.

¹⁰²⁶ *Ibid.*

¹⁰²⁷ *Ibid.*

¹⁰²⁸ Luke Hanna et al, “Adaptive Management White Paper” (IEA Wind, December 2016) at 10-40 Online: < <https://tethys.pnnl.gov/sites/default/files/publications/WREN-AM-White-Paper-2016.pdf> > accessed on 27 June 2024.

and birds allows developers and regulators to adjust operations to mitigate adverse effects, such as modifying turbine operation schedules to reduce collision risks during peak migration periods.¹⁰²⁹

Incorporating social equity and adaptive management into the development of offshore renewable energy projects, ensures that these projects are not only environmentally sustainable but also socially just.¹⁰³⁰ These approaches help build community support, enhance the resilience of marine ecosystems, and ensure that the transition to renewable energy benefits all segments of society.

4.3.4.1 Case Study: New Jersey's Approach

New Jersey's offshore wind projects provide a good example of integrating social equity into ORE development.¹⁰³¹ The state's strategic plan involves continuous stakeholder engagement from the early stages, ensuring that diverse community voices are heard and considered.¹⁰³² This approach aims to build trust and ensure that the benefits of offshore wind development are shared equitably across the state.¹⁰³³ New Jersey's approach involves a series of structured public consultations, meetings, online forums, workshops, and open house events designed to solicit input from a wide range of stakeholders.¹⁰³⁴ These efforts are coordinated by state agencies such as the New Jersey Economic Development Authority (NJEDA) and the New Jersey Board of Public Utilities (NJBPU).¹⁰³⁵ The goal was to ensure that the planning and implementation of offshore wind projects reflect the concerns, and aspirations of all community members, including historically marginalized and underserved populations.¹⁰³⁶

To achieve this the state began its public engagement efforts early in the planning process, releasing the draft Offshore Wind Strategic Plan for public comment in July 2020.¹⁰³⁷ This allowed

¹⁰²⁹ *Ibid.*

¹⁰³⁰ *Ibid.*

¹⁰³¹ Matthew Campo, "Opportunities for Public Participation in Offshore Wind Planning in New Jersey" (NJ Climate Change Alliance, February 2020) at 1-8 Online: < https://njclimateresourcecenter.rutgers.edu/wp-content/uploads/2020/03/OSW_fact_sheet_for_NJCCAFINAL.pdf > accessed on 27 June 2024.

¹⁰³² *Ibid.*

¹⁰³³ AWEA, "Offshore Wind Public Participation Guide", (January 2020) at 1-2 Online: < https://njclimateresourcecenter.rutgers.edu/wp-content/uploads/2020/03/OSW_fact_sheet_for_NJCCAFINAL.pdf > accessed on 27 June 2024.

¹⁰³⁴ *Ibid.*

¹⁰³⁵ Matthew Campo, "Opportunities for Public Participation in Offshore Wind Planning in New Jersey" (NJ Climate Change Alliance, February 2020) at 1-8, Online: < https://njclimateresourcecenter.rutgers.edu/wp-content/uploads/2020/03/OSW_fact_sheet_for_NJCCAFINAL.pdf > accessed on 27 June 2024.

¹⁰³⁶ *Ibid.*

¹⁰³⁷ Ramboli US Corporation, "New Jersey Offshore Wind Strategic Plan: Navigating Our Future", (September 2020) Online: < https://www.nj.gov/bpu/pdf/Final_NJ_OWSP_9-9-20.pdf > accessed on 27 June 2024.

ample time for feedback and ensured that the final plan incorporated diverse perspectives.¹⁰³⁸ The effort ensured transparency by documenting and publicly sharing the outcomes of consultations, through summarizing public comments, explaining how they were addressed in the final plan, and providing updates on project progress.¹⁰³⁹ The effort further ensured that all stakeholders have a voice in the planning and implementation of offshore wind projects, whilst building trust and reduce potential conflicts.¹⁰⁴⁰

The state’s plan prioritized community investments and minimizing adverse environmental impacts on vulnerable communities.¹⁰⁴¹ This includes rigorous environmental impact assessments (EIA) that consider the potential effects on local ecosystems and public health.¹⁰⁴² Offshore wind developers are encouraged to invest in local communities, particularly those that have been historically underserved. This may include funding for community projects, infrastructure improvements, and educational programs.¹⁰⁴³ The development of offshore wind projects is expected to create numerous job opportunities.¹⁰⁴⁴ The state was committed to workforce development programs that provide training and employment opportunities to residents in low-income and marginalized communities.¹⁰⁴⁵ Hence it is not surprising that the Ocean Wind 1 project, developed by Orsted, enjoyed a successful engagement, as it exemplified New Jersey’s commitment to social equity and stakeholder engagement.¹⁰⁴⁶ The project has involved extensive consultations with local communities, environmental organizations, and industry stakeholders to ensure that it meets the state’s economic and environmental goals while addressing community concerns.¹⁰⁴⁷

Most remarkable is the policy and legislative support for public participation as New Jersey’s legislative framework supports its strategic plan by mandating public participation in

¹⁰³⁸ New Jersey’s Clean Energy Program, “Strategic Plan” Online: < <https://www.njcleanenergy.com/renewable-energy/programs/nj-offshore-wind/strategic-plan>> accessed on 27 June 2024.

¹⁰³⁹ *Ibid.*

¹⁰⁴⁰ *Ibid.*

¹⁰⁴¹ Matthew Campo, “Opportunities for Public Participation in Offshore Wind Planning in New Jersey” (NJ Climate Change Alliance, February 2020) pp 1-8, Online: < https://njclimateresourcecenter.rutgers.edu/wp-content/uploads/2020/03/OSW_fact_sheet_for_NJCCAFINAL.pdf > accessed on 27 June 2024.

¹⁰⁴² *Ibid.*

¹⁰⁴³ New Jersey’s Clean Energy Program, “Strategic Plan” Online: < <https://www.njcleanenergy.com/renewable-energy/programs/nj-offshore-wind/strategic-plan>> accessed on 27 June 2024.

¹⁰⁴⁴ *Ibid.*

¹⁰⁴⁵ New Jersey’s Clean Energy Program, “Offshore Wind”, Online: < <https://www.njcleanenergy.com/renewable-energy/programs/nj-offshore-wind>> accessed on 27 June 2024.

¹⁰⁴⁶ *Ibid.*

¹⁰⁴⁷ *Ibid.*

environmental decision-making.¹⁰⁴⁸ The state’s Environmental Justice Law requires agencies to consider the cumulative environmental impacts on overburdened communities, ensuring that these communities are protected and benefit from renewable energy developments.¹⁰⁴⁹ New Jersey’s approach to integrating social equity into offshore wind projects serves as a robust model for other states and countries.¹⁰⁵⁰ By prioritizing continuous stakeholder engagement, equitable distribution of benefits, and transparent decision-making, New Jersey is ensuring that its transition to renewable energy is both just and sustainable.¹⁰⁵¹

4.4 Regulatory Tools

4.4.1 Marine Spatial Planning

Marine Spatial Planning (MSP) is a crucial tool for the sustainable development of ORE.¹⁰⁵² It aims to manage the spatial and temporal distribution of human activities in marine environments to minimize conflicts, protect ecosystems, and promote sustainable use of marine resources.¹⁰⁵³ MSP is particularly important for the deployment of offshore wind, wave, and tidal energy projects, ensuring these developments coexist harmoniously with other marine activities and environmental protections.¹⁰⁵⁴ It involves various techniques such as spatial modeling, participatory mapping, and scenario analysis.¹⁰⁵⁵ Spatial modeling helps in understanding the ecological impacts and suitability of different marine areas for ORE projects.¹⁰⁵⁶ Participatory mapping engages stakeholders in identifying critical areas for conservation or development, ensuring their input is considered in planning processes.¹⁰⁵⁷

The primary objectives of MSP in the context of offshore renewable energy include balancing competing uses, environmental protection and economic efficiency.¹⁰⁵⁸ MSP helps

¹⁰⁴⁸ New Jersey Environmental Justice Law, 2020 CAP 92, Online: < <https://dep.nj.gov/wp-content/uploads/ej/docs/ej-law.pdf>> accessed on 27 June 2024

¹⁰⁴⁹ *Ibid* at sec 1.

¹⁰⁵⁰ *Ibid*.

¹⁰⁵¹ Matthew Campo, “Opportunities for Public Participation in Offshore Wind Planning in New Jersey” (NJ Climate Change Alliance, February 2020) at 6-8, Online: < https://njclimateresourcecenter.rutgers.edu/wp-content/uploads/2020/03/OSW_fact_sheet_for_NJCCAFINAL.pdf > accessed on 27 June 2024.

¹⁰⁵² A B Gill et al, *Environmental Implications of Offshore Energy* In K Yates & C Bradshaw eds, *Offshore Energy and Marine Spatial Planning* (Routledge, January 2018) at 1-32.

¹⁰⁵³ *Ibid*.

¹⁰⁵⁴ Anne Marie O’Hagan et al, “Marine Spatial Planning and Marine Renewable Energy” In A E Copping & G Hemery eds, “OES-Environmental 2020 State of the Science Report: Environmental Effects of Marine Renewable Energy Development Around the World” Report for Ocean Energy Systems (OES) at 214-241 Online: < <https://www.osti.gov/servlets/purl/1633204/>> accessed 29 June 2024.

¹⁰⁵⁵ *Ibid*.

¹⁰⁵⁶ *Ibid*.

¹⁰⁵⁷ *Ibid* at 220.

¹⁰⁵⁸ *Ibid*.

reconcile the interests of various stakeholders, such as fisheries, shipping, conservationists, and energy developers.¹⁰⁵⁹ By mapping and planning the use of marine space, conflicts can be minimized, and synergies between activities can be identified.¹⁰⁶⁰ By providing clear guidelines and designated zones for ORE development, MSP may reduce uncertainties and streamline the permitting process, thereby attracting investments and facilitating economic growth. MSP also incorporates ecological considerations to safeguard marine habitats and biodiversity, this ensures that renewable energy projects do not significantly harm sensitive ecosystems or species.¹⁰⁶¹

MSP is implemented globally through various frameworks and directives. An example is the European Union's Marine Spatial Planning Directive.¹⁰⁶² This directive requires member states to develop MSP plans, promoting sustainable growth of maritime economies while protecting marine environments.¹⁰⁶³ Also, the International Council for the Exploration of the Sea (ICES) also plays a key role by providing scientific advice and coordinating MSP efforts among its member countries.¹⁰⁶⁴ In addition, countries like Canada, Belgium, Germany, Denmark, France, and Portugal, have advanced MSP processes tailored to their specific marine environments and economic contexts.¹⁰⁶⁵

In Denmark, MSP is integrated into its national policies to balance offshore wind energy development with fisheries and maritime transport.¹⁰⁶⁶ Belgium's Marine Spatial Plan includes designated zones for offshore wind farms while allowing passive fishing activities within these zones.¹⁰⁶⁷ This approach has minimized conflicts and supported both the renewable energy sector and local fisheries.¹⁰⁶⁸

On the other hand, Germany's MSP includes stringent requirements for the burial depth of submarine cables to protect them from fishing gear and anchors.¹⁰⁶⁹ This ensures the safety and reliability of energy transmission while accommodating fishing activities.¹⁰⁷⁰ In the United States,

¹⁰⁵⁹ *Ibid.*

¹⁰⁶⁰ *Ibid* at 230-241.

¹⁰⁶¹ *Ibid.*

¹⁰⁶² M Young, "Building the Blue Economy: The Role of Marine Spatial Planning in Facilitating Offshore Renewable Energy Development" (2015) 30:1 *Intl J Marine & Coastal L* at 148-174 Online: <<https://doi.org/10.1163/15718085-12341339>> accessed on 29 June 2024.

¹⁰⁶³ *Ibid.*

¹⁰⁶⁴ O'Hagan et al, *supra* note 1054.

¹⁰⁶⁵ *Ibid* at 217.

¹⁰⁶⁶ *Ibid.*

¹⁰⁶⁷ *Ibid.*

¹⁰⁶⁸ *Ibid* at 238.

¹⁰⁶⁹ *Ibid.*

¹⁰⁷⁰ *Ibid* at 241.

the state of Washington has developed an MSP framework to align marine renewable energy development with other uses of ocean waters.¹⁰⁷¹ The framework prioritizes areas for wind energy projects while ensuring environmental protections and stakeholder engagement.¹⁰⁷²

MSP is a vital strategy for facilitating the sustainable development of ORE, however it requires comprehensive data on marine ecosystems and human activities, which will benefit ongoing relevance and effectiveness.¹⁰⁷³ The implementation of MSP varies by region, but its objectives of balancing competing use, protecting marine ecosystems, and promoting economic efficiency remain universally applicable, fostering a more sustainable and harmonious use of our oceans.¹⁰⁷⁴

4.4.1.1 Case Study of Canada's Marine Spatial Planning Framework

Canada's approach to Marine Spatial Planning (MSP) for offshore renewable energy is designed to ensure sustainable use of marine resources while accommodating various marine activities, including fishing and renewable energy projects.¹⁰⁷⁵ Despite this commitment however, implementing MSP has been relatively slow compared to other countries with extensive marine territories.¹⁰⁷⁶ This delay has led to criticism that Canada is not fully leveraging MSP as a tool to balance conservation and economic development in its marine areas.¹⁰⁷⁷ Canada's MSP efforts have also been criticized for not always striking an appropriate balance between environmental conservation and economic development.¹⁰⁷⁸ In some cases, economic interests, such as oil and gas exploration, fisheries, and shipping, have been prioritized over the protection of marine biodiversity and ecosystems, leading to concerns about the long-term sustainability of marine resources.¹⁰⁷⁹

¹⁰⁷¹ *Ibid.*

¹⁰⁷² Young, *supra* note 1062.

¹⁰⁷³ *Ibid.*

¹⁰⁷⁴ *Ibid.*

¹⁰⁷⁵ Ocean Energy Systems, 'Canada: Supporting Policies for Ocean Energy', Online: <<https://www.ocean-energy-systems.org/ocean-energy-in-the-world/canada/>> accessed 30 June 2024.

¹⁰⁷⁶ Julia K Baum, Jeffrey A Hutchings & Susanna D Fuller, "Challenges in Restoring Canadian Marine Biodiversity" (20 November 2019) *Policy Options* Online: <<https://policyoptions.irpp.org/magazines/november-2019/challenges-in-restoring-canadian-marine-biodiversity/>> accessed on 30 June 2024.

¹⁰⁷⁷ Rashid Sumaila, "Economics in Marine Spatial Planning: A Review of Issues in British Columbia and Similar Jurisdictions" (2024) 16 *Sust* at 1210 Online: <<https://doi.org/10.3390/su16031210>> accessed 30 June 2024.

¹⁰⁷⁸ *Ibid.*

¹⁰⁷⁹ Trine Skovgaard Kirkfeldt, "A Review of Sustainability Concepts in Marine Spatial Planning and the Potential to Supporting the UN Sustainable Development Goal 14" (9 July 2021) *Frontiers in Marine Science* Online: <<https://www.frontiersin.org/articles/10.3389/fmars.2021.702972/full>> accessed on 30 June 2024.

Despite the vastness of Canada's marine areas, MSP has been implemented in only a few regions, such as the Pacific North Coast Integrated Management Area (PNCIMA) and the Scotian Shelf.¹⁰⁸⁰ The lack of comprehensive MSP coverage across all of Canada's marine regions limits the ability to effectively manage cumulative impacts and ensure the sustainable use of marine resources on a national scale. Thus, MSP framework is particularly notable in regions like the Bay of Fundy and the Scotian Shelf, where careful planning and stakeholder engagement are crucial.¹⁰⁸¹ Canada's MSP framework is guided by a combination of federal and provincial policies aimed at balancing ecological, economic, and social objectives.¹⁰⁸² The framework involves multiple stakeholders, including federal and provincial governments, indigenous communities, industry representatives, and environmental organizations.¹⁰⁸³

For example, in Nova Scotia, the Marine Spatial Planning (MSP) framework is increasingly incorporating the perspectives and rights of Indigenous Peoples.¹⁰⁸⁴ Recognizing the historical and ongoing stewardship of marine environments by Indigenous communities, Nova Scotia's approach to MSP aims to integrate Indigenous knowledge. This would ensure equitable participation, and foster partnerships that support both marine conservation and sustainable economic development.¹⁰⁸⁵ This inclusive approach ensures that diverse perspectives are considered in the planning and management of marine resources.

However, while Canada recognizes the importance of incorporating Indigenous rights and knowledge into MSP, the actual integration of these elements has been inconsistent.¹⁰⁸⁶ In some cases, Indigenous communities have expressed concerns that their rights and traditional knowledge are not adequately considered or respected in MSP processes.¹⁰⁸⁷

Also, the MSP process in Atlantic Canada has been fragmented and inconsistent, lacking a unified approach to integrating various marine activities such as fishing, shipping, and offshore energy development.¹⁰⁸⁸ This has led to delays in the implementation of MSP strategies that are

¹⁰⁸⁰ Jonathan C Day, "Pacific North Coast Integrated Management Area (PNCIMA): Ecosystem-Based Management Framework" (Government of Canada, 2017) Online: <<https://www.dfo-mpo.gc.ca/oceans/publications/pncima-cpzi/index-eng.html>> accessed on 30 June 2024.

¹⁰⁸¹ *Ibid.*

¹⁰⁸² *Ibid.*

¹⁰⁸³ *Ibid.*

¹⁰⁸⁴ *Ibid.*

¹⁰⁸⁵ Kirkfeldt, *supra* note 1079.

¹⁰⁸⁶ Impact Assessment Agency of Canada, "Regional Assessment of Offshore Wind Development in Nova Scotia: Interim Report" at 16 Online: <<https://iaac-aeic.gc.ca/050/documents/p83514/156045E.pdf>> accessed on 19 August 2024.

¹⁰⁸⁷ *Ibid.*

¹⁰⁸⁸ A Kapoor, GS Fraser & A Carter, "Marine Conservation Versus Offshore Oil and Gas Extraction: Reconciling an Intensifying Dilemma in Atlantic Canada" (1 December 2021) 8:4 *Extractive Industries & Society* at 100978.

essential for coordinating the multiple uses of marine space, including ORE projects. The complexities involved in managing the diverse interests in the region, reflects insufficient coordination between federal and provincial governments, indigenous groups, and other stakeholders.

The presence of established petroleum companies has also influenced the pace and scope of MSP in the region.¹⁰⁸⁹ These companies have historically dominated offshore activities, and their interests in maintaining access to offshore resources have sometimes conflicted with the goals of MSP, particularly when it comes to allocating space for renewable energy projects.¹⁰⁹⁰ The shift towards including offshore renewable energy under the regulatory frameworks that were initially designed for petroleum activities (for example, the Canada-Nova Scotia Offshore Petroleum Board which is transitioning into the Canada-Nova Scotia Offshore Energy Regulator) illustrates the evolving but still petroleum-centric approach to marine resource management.¹⁰⁹¹

The criticism notwithstanding, Canada may have some lessons for jurisdictions like Nigeria to draw upon. For instance, the Canadian MSP involves certain key legislation and policies such as the Oceans Act which provides the legal basis for integrated management of Canada's oceans, promoting sustainable development and conservation.¹⁰⁹² Canada's Oceans Management Strategy further outlines the federal government's approach to oceans management, emphasizing sustainable development, integrated management and precautionary approach.¹⁰⁹³ It also developed a National Framework for Canada's Network of Marine Protected Areas, to provide a strategic direction plan to protect marine biodiversity, through integrated ocean management and other marine spatial planning processes.¹⁰⁹⁴

A critical aspect of Canada's MSP framework is the integration of fisheries data into spatial planning to minimize conflicts and disruptions.¹⁰⁹⁵ This is particularly important in areas like the Bay of Fundy, known for its rich tidal energy resources and significant fishing activities.¹⁰⁹⁶

¹⁰⁸⁹ *Ibid.*

¹⁰⁹⁰ *Ibid.*

¹⁰⁹¹ CNSOPB, Canada-Nova Scotia Offshore Energy Regulator (CNSOER) Updates Online: < <https://www.cnsopb.ns.ca/canada-nova-scotia-offshore-energy-regulator-cnsoer-updates>> accessed on 28 August 2024.

¹⁰⁹² Oceans Act, (SC 1996, c. 31).

¹⁰⁹³ *Ibid* at s 31.

¹⁰⁹⁴ Government of Canada, "National Framework for Canada's Network of Marine Protected Areas" (Ottawa: Fisheries and Oceans Canada, 2011) at 5- 19, Online: < <https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/345207.pdf>> accessed on 2 July 2024.

¹⁰⁹⁵ *Ibid.*

¹⁰⁹⁶ *Ibid.*

Detailed spatial maps are created using fisheries data, highlighting critical areas for fishing activities, such as breeding and spawning grounds.¹⁰⁹⁷ The MSP process here also involves environmental assessments, stakeholder consultations, and strategic zoning to balance renewable energy development with the conservation of marine ecosystems and the needs of the fishing industry.¹⁰⁹⁸

This helps in identifying zones suitable for renewable energy projects without adversely affecting the fishing industry, leading to active involvement of fishing communities in the MSP process which ensures that their needs and concerns are addressed.¹⁰⁹⁹ This collaborative approach helps in reducing potential conflicts and promoting co-existence between fishing and renewable energy projects.¹¹⁰⁰ To protect submarine cables from damage by fishing gear and anchors, Canada's MSP framework includes stringent requirements for cable burial depth.¹¹⁰¹ In regions with heavy fishing or rough sea conditions, cables are buried even deeper to ensure additional protection.¹¹⁰² As well as continuous ongoing monitoring of submarine cables, this helps in detecting and addressing any issues promptly whilst ensuring the integrity of energy transmission infrastructure for offshore renewable projects.¹¹⁰³

Also, the ongoing Regional Assessment (RA) for Offshore Wind Development in Nova Scotia might be a step towards achieving a cohesive and sustainable management strategy for Atlantic Canada's marine environment.¹¹⁰⁴ The first phase of the assessment seemed to prioritize public engagement and caution in its approach.¹¹⁰⁵ For example, the period of the assessment was extended to accommodate sufficient engagement with the Indigenous people and other stakeholders.¹¹⁰⁶ Also, the Committee in charge of the assessment maintains that existing data on marine mammals need to be interpreted with a level of caution and calls for additional studies to gather more information.¹¹⁰⁷

¹⁰⁹⁷ *Ibid.*

¹⁰⁹⁸ Ocean Energy Systems, "Canada: Supporting Policies for Ocean Energy" Online: <<https://www.ocean-energy-systems.org/ocean-energy-in-the-world/canada/>> accessed 30 June 2024.

¹⁰⁹⁹ *Ibid.*

¹¹⁰⁰ *Ibid.*

¹¹⁰¹ *Ibid.*

¹¹⁰² *Ibid.*

¹¹⁰³ *Ibid.*

¹¹⁰⁴ Impact Assessment Agency of Canada, "Regional Assessment of Offshore Wind Development in Nova Scotia: Interim Report" at 16 Online: <<https://iaac-aeic.gc.ca/050/documents/p83514/156045E.pdf>> accessed on 19 August 2024.

¹¹⁰⁵ *Ibid* at 8 & 26.

¹¹⁰⁶ *Ibid* at 8.

¹¹⁰⁷ *Ibid* at 26.

In summary, Canada’s Marine Spatial Planning framework aims to achieve a balanced approach to managing marine resources.¹¹⁰⁸ By integrating fisheries data, enforcing stringent submarine cable regulations, and involving diverse stakeholders, Canada aims to ensure sustainable development of its offshore renewable energy sector while protecting the interests of other marine users.¹¹⁰⁹

4.4.2 Environmental Impact Assessment

The Environmental Impact Assessment (EIA) process is integral to the development of offshore renewable energy projects.¹¹¹⁰ It ensures that the environmental implications of these projects are thoroughly evaluated and managed, balancing the benefits of renewable energy with the need to protect marine ecosystems and human activities.¹¹¹¹ This is possible through assessing the direct, indirect, and cumulative effects of proposed projects on the marine and coastal environment.¹¹¹² This leads to the development of mitigation strategies to propose measures to avoid, minimize, or compensate for adverse environmental impacts.¹¹¹³ It could promote sustainable development by ensuring that offshore renewable energy projects whilst contributing to sustainability goals, also protect ecological and social values.¹¹¹⁴ Thus, EIA helps in making informed decisions that balance the benefits of renewable energy with the need to protect marine ecosystems.¹¹¹⁵

The key stages in the EIA process are screening, scoping, impact assessment, mitigation planning, reporting, public participation, decision making, monitoring and compliance.¹¹¹⁶ The screening stage determines whether a project requires a full EIA based on its type, size, and potential environmental impacts, as projects with significant potential impacts proceed to a detailed EIA.¹¹¹⁷ Scoping identifies the key environmental issues and impacts to be considered in the EIA alongside consultations with stakeholders to ensure all relevant concerns are addressed.¹¹¹⁸

¹¹⁰⁸ Government of Canada, “National Framework for Canada’s Network of Marine Protected Areas” (Ottawa: Fisheries and Oceans Canada, 2011) at 5- 19 Online: <<https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/345207.pdf>> accessed on 2 July 2024.

¹¹⁰⁹ *Ibid.*

¹¹¹⁰ Catherine Ann Caine, “The Race to the Water for Offshore Renewable Energy: Assessing Cumulative and In-combination Impacts for Offshore Renewable Energy Developments” (March 2020) 32:1 *J Envtl L* at 83–109 Online: <<https://doi.org/10.1093/jel/eqz031>> accessed 2 July 2024.

¹¹¹¹ *Ibid.*

¹¹¹² *Ibid.*

¹¹¹³ *Ibid.*

¹¹¹⁴ *Ibid* at 101-109.

¹¹¹⁵ *Ibid.*

¹¹¹⁶ Einar Leknes, “The Roles of EIA in the Decision-Making Process” (1 July 2001) 21:4 *Envtl Impact Assessment Rev* at 309.

¹¹¹⁷ *Ibid* at 310-312.

¹¹¹⁸ *Ibid* at 313.

The main impact assessment is a detailed analysis of the identified impacts (assesses the magnitude, extent, and duration of potential environmental effects), using scientific data and predictive models.¹¹¹⁹

Thereafter the mitigation planning stage develops measures to mitigate adverse impacts by designing project modifications, implementing best practices, and planning for environmental monitoring.¹¹²⁰ This mandates reporting by documenting the findings of the EIA in an Environmental Impact Statement (EIS), and this is submitted to regulatory authorities for review.¹¹²¹ Public consultations and hearings are then held to gather feedback on the EIS to promote transparency and allow stakeholders to influence project planning and decision making. The regulatory authorities review the EIS and stakeholder inputs to make informed decisions on project approval or may impose conditions to ensure that mitigation measures are implemented.¹¹²² Once the project is approved, ongoing monitoring is conducted to ensure compliance with environmental regulations and effectiveness of mitigation measures.¹¹²³

In Nova Scotia, tidal energy projects in the Bay of Fundy are subject to stringent EIAs, these assessments consider the unique tidal conditions and potential impacts on marine life and local communities.¹¹²⁴ The use of Strategic Environmental Assessments (SEAs) helps guide site selection and project planning, ensuring that environmental and social impacts are minimized.¹¹²⁵

The UK has established comprehensive guidelines for conducting EIAs for offshore wind projects, which emphasize early stakeholder engagement, rigorous impact assessment, and the integration of adaptive management practices.¹¹²⁶ While in Scotland, Marine Directorate's Licensing Operations Team oversees the EIA process for marine renewable energy projects.¹¹²⁷ This includes issuing marine licenses and ensuring that projects comply with environmental

¹¹¹⁹ *Ibid.*

¹¹²⁰ *Ibid* at 320-334.

¹¹²¹ *Ibid.*

¹¹²² *Ibid.*

¹¹²³ *Ibid* at 314-319.

¹¹²⁴ Meinhard Doelle, "Role of Strategic Environmental Assessments in Energy Governance: A Case Study of Tidal Energy in Nova Scotia's Bay of Fundy" (2009) 27:2 *J Energy & Natural Resources L* at 112-144, Online: <<https://doi.org/10.1080/02646811.2009.11435210>> accessed on 2 July 2024.

¹¹²⁵ *Ibid.*

¹¹²⁶ Bridget Durning & Martin Broderick, "Development of Cumulative Impact Assessment Guidelines for Offshore Wind Farms and Evaluation of Use in Project Making" (2019) 37:2 *Impact Assessment & Project Appraisal* at 124-138 Online: <<https://doi.org/10.1080/14615517.2018.1498186>> accessed on 2 July 2024.

¹¹²⁷ Scottish Government, "Marine Licensing and Consenting: Offshore Renewable Energy Projects" Online: <<https://www.sciencedirect.com/science/article/abs/pii/S0195925517303815>> accessed on 2 July 2024.

standards.¹¹²⁸ Scotland’s EIA guidance provides procedures for each stage of the EIA process, ensuring consistency and thoroughness in impact assessment.¹¹²⁹

The Hollandse Kust Noord wind farm is a significant offshore wind energy project in the Netherlands.¹¹³⁰ These projects underwent comprehensive EIAs to evaluate their impacts on marine and coastal environments.¹¹³¹ This consisted of environmental surveys on the marine ecology such as studies on the Benthic communities, fish populations, marine mammals, bird and bat population.¹¹³² These were done to understand the potential impacts on biodiversity and collision risks with wind turbines, whilst assessing the impacts of noise and vibration from construction activities on marine life, particularly during pile driving operations.¹¹³³ Several mitigation measures were then put in place in consultation with various stakeholders, including seasonal restrictions, noise mitigation technologies and habitat rehabilitation.¹¹³⁴ By thoroughly assessing and mitigating environmental impacts and involving stakeholders throughout the process, the Netherlands aims to balance renewable energy development with the protection of marine ecosystems and community interests.¹¹³⁵

Environmental Impact Assessment is a vital regulatory tool for ensuring the sustainable development of offshore renewable energy projects.¹¹³⁶ By systematically evaluating and mitigating environmental impacts, EIAs help balance the benefits of renewable energy with the need to protect marine ecosystems and support community well-being.¹¹³⁷ Continuous improvement in EIA practices, driven by research, stakeholder engagement, and adaptive management, is essential for the long-term success of offshore renewable energy initiatives.¹¹³⁸

¹¹²⁸ *Ibid.*

¹¹²⁹ *Ibid.*

¹¹³⁰ Cross Wind, “The Wind Park: Hollandse Kust Noord” Online: <<https://www.crosswindhkn.nl/>> accessed 2 July 2024.

¹¹³¹ *Ibid.*

¹¹³² *Ibid.*

¹¹³³ Wind & Water Works, “Hollandse Kust Noord OWF”, Online: <<https://windandwaterworks.nl/cases/hollandse-kust-noord-offshore-wind-farm>> accessed 2 July 2024.

¹¹³⁴ Paul Lucas, Timo Maas & Marcel Kok, “Insights from Global Environmental Assessments: Lessons for the Netherlands” (The Hague: PBL Netherlands Environmental Assessment Agency, 2020) at 62-72 Online: <<https://www.pbl.nl/uploads/default/downloads/pbl-2020-insights-from-global-environmental-assessments-3490.pdf>> accessed 2 July 2024.

¹¹³⁵ *Ibid.*

¹¹³⁶ Einar Leknes, “The Roles of EIA in the Decision-Making Process” (1 July 2001) 21:4 *Environmental Impact Assessment Rev* 309-334.

¹¹³⁷ *Ibid.*

¹¹³⁸ *Ibid.*

4.5 Lessons Learned and Applicability to Nigeria

Canada, particularly Nova Scotia, employs some level of marine spatial planning (MSP) and strategic environmental assessments (SEAs) to guide the development of offshore renewable energy projects.¹¹³⁹ These tools help identify suitable sites, minimize conflicts with other marine activities, and ensure environmental sustainability.¹¹⁴⁰ Whilst navigating the regulatory landscape in Canada can be complex, it requires coordination between federal and provincial authorities.¹¹⁴¹ Ensuring meaningful engagement with Indigenous communities is a priority, integrating Indigenous knowledge and rights into project planning and implementation.¹¹⁴² Canada's focus on technological innovation and infrastructure development, such as port facilities and grid connections, supports the large-scale deployment of offshore renewable energy.¹¹⁴³ This ensures that projects are not only feasible but also economically viable and environmentally friendly.¹¹⁴⁴

Nigeria could benefit from developing a comprehensive regulatory framework that clearly outlines the requirements for offshore renewable energy projects.¹¹⁴⁵ This includes guidelines for EIAs, stakeholder engagement, and integration with national energy policies. Learning from Scotland's regulatory frameworks can help Nigeria create an environment that is conducive to ORE development while ensuring environmental and social safeguards.¹¹⁴⁶ Also, ensuring that local communities and Indigenous groups are actively involved in the planning and implementation of ORE projects is crucial.¹¹⁴⁷ Nigeria could adopt Scotland's' and Canada's practices of early and continuous stakeholder engagement, addressing concerns, and incorporating local knowledge into decision-making processes.¹¹⁴⁸

Implementing strategic environmental assessments and marine spatial planning, as seen in Canada, could help Nigeria identify the most suitable locations for ORE projects, minimizing environmental impacts and conflicts with other marine activities.¹¹⁴⁹ Summarily, the experiences

¹¹³⁹ Doelle, *supra* note 1124.

¹¹⁴⁰ *Ibid.*

¹¹⁴¹ *Ibid* at 140-142.

¹¹⁴² *Ibid.*

¹¹⁴³ *Ibid* at 143 -144.

¹¹⁴⁴ *Ibid.*

¹¹⁴⁵ Joanna Wawrzyczek et al, "The Ecosystem Approach in Ecological Impact Assessment: Lessons Learned from Windfarm Developments on Peatlands in Scotland" (1 September 2018) 72 *Envtl Impact Assessment Rev* at 157-165.

¹¹⁴⁶ *Ibid.*

¹¹⁴⁷ *Ibid.*

¹¹⁴⁸ *Ibid.*

¹¹⁴⁹ Ocean Energy Systems, "Canada: Supporting Policies for Ocean Energy" Online: <<https://www.ocean-energy-systems.org/ocean-energy-in-the-world/canada/>> accessed 30 June 2024.

of these countries provide valuable insights that Nigeria can apply to develop its offshore renewable energy sector. By focusing on robust regulatory frameworks, inclusive stakeholder engagement, strategic planning, and technological innovation, Nigeria could harness its offshore renewable energy potential to achieve sustainable economic growth and energy security.

CHAPTER 5: CHARTING FUTURE COURSES

5.1 Introduction

The integration of offshore renewable energy aligns with several United Nations Sustainable Development Goals (SDGs), which together contribute to sustainable development in Nigeria.¹¹⁵⁰ Offshore renewable energy is pivotal in promoting SDG 7 (Affordable and Clean Energy) by providing reliable, affordable, modern and clean energy, thus reducing energy poverty in coastal and rural areas.¹¹⁵¹ By mitigating greenhouse gas emissions, offshore renewable energy may support Nigeria in its drive to meet its climate commitments under international agreements such as the Paris Agreement and SDG 13 on Climate Action.¹¹⁵² Sustainable management of marine resources through careful planning of offshore projects promotes SDG 14 on Life Below Water, ensuring the conservation and sustainable use of oceans, seas, and marine resources.¹¹⁵³ Effective governance frameworks and policies that promote renewable energy adoption, such as a specific governance regime tailored to ORE, is crucial for achieving these SDGs.

Nigeria's journey towards sustainable offshore renewable energy development requires careful consideration of ecological impacts, alignment with SDGs, and implications for local communities. Through comprehensive policies, robust governance, and proactive community engagement, Nigeria could harness the potential of ORE to achieve a sustainable and equitable energy future while avoiding unintended negative impacts in the environment and society. This chapter charts the way forward whilst making a case for regional and global efforts towards ORE development.

5.2 National Directions for Nigeria

As Nigeria seeks to establish a sustainable energy future, the development of offshore renewable energy (ORE) becomes increasingly significant. This section explores the national directions that Nigeria must take to harness the potential of ORE, considering the ecological impacts, alignment with social development goals, and implications for local communities.

¹¹⁵⁰ United Nations, 'Transforming Our World: The 2030 Agenda for Sustainable Development' Online: <<https://sdgs.un.org/2030agenda>> accessed 12 July 2024.

¹¹⁵¹ *Ibid.*

¹¹⁵² *Ibid.*

¹¹⁵³ *Ibid.*

5.2.1 Effective Regulation: Ecological Impacts of Offshore Renewable Energy Development

The recent amendments to the Electricity Act, 2003, which now incorporate provisions for renewable energy, mark a significant advancement in Nigeria’s energy policy.¹¹⁵⁴ The Act states amongst its objectives¹¹⁵⁵ that it aims to stimulate policy, regulatory and framework for the development and utilization of renewable energy sources in Nigeria.¹¹⁵⁶ It further grants the Nigerian Electricity Regulatory Commission (NERC) powers to make regulations amongst other actions towards development and utilization of renewable energy.¹¹⁵⁷

However, the process of updating and implementing these new regulations seems notably slow and weak. Nearly a year has passed without significant progress in establishing the necessary regulatory framework to support the provisions covering renewable energy. Going forward, NERC would need to establish and adhere to clear, publicly available timelines for the development and implementation of new renewable energy regulations. This transparency in scheduling would help manage stakeholders' expectations and ensure accountability. Regular updates should be provided to the public and relevant stakeholders on the progress of the regulatory development process.

As a next step, NERC should streamline its regulatory processes to expedite the development and implementation of new regulations. This could involve the adoption of more efficient regulatory development procedures, possibly through the introduction of automated systems, stakeholder workshops, and expert panels to provide ongoing feedback and guidance. Consideration should be given to establishing a dedicated task force within the NERC focusing solely on renewable energy regulations to ensure dedicated resources and specialized attention to the timely rollout of new policies.

The current regulatory framework under the Nigerian Electricity Regulatory Commission (NERC) lacks comprehensive environmental protection measures, particularly concerning Mini-Grid Regulations 2023 as specified in Regulation 18.¹¹⁵⁸ It provides that a mini grid operator shall comply with the environmental laws affecting their operations and any compliance breach would

¹¹⁵⁴ Electricity Act 2023, Online: < <https://placng.org/i/wp-content/uploads/2023/06/Electricity-Act-2023.pdf>> accessed 12 April 2024.

¹¹⁵⁵ *Ibid*, sec 1.

¹¹⁵⁶ *Ibid* at sec 1 (c), (k)- (o).

¹¹⁵⁷ *Ibid* at sec 164 (a) – (u).

¹¹⁵⁸ Mini-Grid Regulations 2023, Regulation No: NERC-R-117-2023 Online: <<https://nerc.gov.ng/wp-content/uploads/2024/01/minigriddregulations.pdf>> accessed 26 July 2024.

be treated as an infraction leading to the suspension or termination of their permit.¹¹⁵⁹ However, the framework lacks detailed guidelines or specific environmental protection standards tailored to mini-grid operations, leaving the enforcement of environmental compliance largely dependent on existing general environmental laws. This gap in the regulatory framework means that while non-compliance with environmental laws can lead to penalties such as the suspension or termination of permits, there is no clear direction on how mini-grid operators should proactively manage environmental impacts specific to their operations, potentially undermining comprehensive environmental protection in the sector.

Thus, prior to drafting the new regulations on renewable energy, NERC should undertake comprehensive impact assessments to determine the specific needs and potential environmental impacts of renewable energy projects. This assessment should guide the creation of tailored regulations that address specific environmental risks associated with different renewable technologies and scales of operation. The impact assessment should also evaluate the socio-economic benefits of renewable energy projects, ensuring that the regulations foster not only environmental protection but also community development and social equity.

Thereafter NERC should develop regulations that incorporate detailed environmental protection measures for all renewable energy projects. This involves expanding the scope of existing regulations beyond mini grids to encompass all forms of renewable energy installations. Specific attention should be given to the formulation of guidelines that mandate rigorous Environmental Impact Assessments (EIAs) before the approval of any renewable energy project. These EIAs should assess potential impacts on biodiversity, water resources, land use, and local communities.

This is because development of offshore renewable energy projects in Nigeria has substantial ecological implications, as the country's coastal and marine environments, rich in biodiversity, are sensitive to industrial activities.¹¹⁶⁰ Therefore, a detailed assessment of ecological impacts- both negative and positive - is crucial.¹¹⁶¹ Some of the positive impacts of ORE include reduction in greenhouse gas (GHG) emissions, as transitioning to offshore renewable energy can

¹¹⁵⁹ *Ibid* at Regulation 13.

¹¹⁶⁰ African Development Bank Group, "Assessing the Potential of Offshore Renewable Energy in Africa" (3 December 2021) Online: < <https://www.afdb.org/en/documents/assessing-potential-offshore-renewable-energy-africa> > accessed 12 April 2024.

¹¹⁶¹ *Ibid*.

significantly reduce Nigeria's reliance on fossil fuels, leading to lower greenhouse gas emissions and combating climate change.¹¹⁶² Structures used for offshore wind farms can also create artificial reefs, promoting marine biodiversity.¹¹⁶³

However, the potential negative impacts include disruption of marine ecosystems arising from the construction and operation of offshore installations, which can disrupt local marine life, including fish populations and migratory patterns of marine mammals.¹¹⁶⁴ Potential spills or leaks during construction and maintenance phases can lead to water pollution, affecting marine flora and fauna.¹¹⁶⁵ Historically, as examined in the preceding historical overview section of this work, the country has failed to solve the issue with the social and environmental impacts of oil spillage from crude oil exploration within the ambit of the current Petroleum Industrial Act 2021, Nigerian Upstream Petroleum Regulatory Commission (NUPRC)¹¹⁶⁶ and the Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA).¹¹⁶⁷ It is thus necessary for the country to wean off the inclusion of renewable energy under the Electricity Act 2023 and have a separate governance regime unique to ORE, given its historical antecedents and the potential of ORE in Nigeria.

The ORE legislation should aim to be specific to ORE development with built in mitigation measures such as strategic site selection, rigorous environmental impact assessments (EIAs), and continuous monitoring. This could minimize negative ecological impacts and enhance positive outcomes in ORE development. This legislation could also ensure that evolving international law principles such as robust precautionary and marine spatial planning provisions are prioritized, to ensure the preservation of marine species and prevent spillage. Additionally, other principles like ecosystem-based management and public participation should be promoted and emphasized

¹¹⁶²IRENA, "Tidal Energy Technology Brief" at 24 Online: <<https://www.irena.org/Publications/2014/Jun/Tidal-Energy>> accessed 12 April 2024.

¹¹⁶³ AH Fayram & A de Risi, "The Potential Compatibility of Offshore Wind Power and Fisheries: An Example Using Bluefin Tuna in the Adriatic Sea" (2007) 50:8 *Ocean & Coastal Management* at 597-605 Online: <https://www.researchgate.net/publication/245123867_> accessed 15 July 2024.

¹¹⁶⁴ A B Gill, "Offshore Renewable Energy: Ecological Implications of Generating Electricity in the Coastal Zone" (2005) 42:4 *J Applied Ecology* at 605-615, Online: <<https://besjournals.onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2005.01060.x>> accessed on 16 July 2024.

¹¹⁶⁵ *Ibid.*

¹¹⁶⁶ As part of its statutory functions, NUPRC provides regulatory guidelines for operations across the entire oil and gas value chain (Nigerian Upstream Petroleum Regulatory Commission, "Home" Online: <<https://www.nuprc.gov.ng/>> accessed 25 July 2025).

¹¹⁶⁷ The Nigerian Midstream and Downstream Petroleum Regulatory Authority was created in August 2021 in line with the Petroleum Industry Act 2021 which provides legal, governance, regulatory and fiscal framework for the Nigerian Petroleum Industry as well as development of Host Communities (The Nigerian Midstream and Downstream Petroleum Regulatory Authority, "Who we are" Online: <<https://nmdpra.gov.ng/AboutUs>> accessed 25 July 2025).

through the various stages of the enactment of this legislation. This is to ensure environmental and social interests are balanced in the wake of economic development through ORE development.

In addition to the enactment of legislation specific to ORE, it is important to establish a separate regulatory body to handle all the actionable parts of the legislation, such as licensing, Environmental Impact Assessment, Marine Spatial Planning, compliance and continuous monitoring to ensure strict adherence to the tenets of the legislation. Especially as it appears the NERC and the Ministry of Power seems overburdened with the other aspects of the nation's electricity mix. For example, the Ministry of Power is yet to provide the Integrated National Electricity Policy and Strategic Implementation Plan,¹¹⁶⁸ which would encompass optimal utilization of renewable energy sources such as wind. This may be handled more effectively and quickly by a distinct ORE regulatory body, which should operate in consultation with other stakeholders as contemplated under the Act. This is because a distinct ORE regulatory body could be armed with the necessary expertise, understanding of the nuances and localities of ORE development.

5.2.2 Implications of Offshore Renewable Energy Development for Local Communities

Offshore renewable energy projects have far-reaching implications for local communities, influencing economic opportunities, social dynamics, and environmental health. Economic opportunities include, for example, job creation in the development and maintenance of offshore renewable energy installations, in construction, in operations, and in ancillary services.¹¹⁶⁹ Another positive implication is enhanced energy access, which can stimulate local businesses, fostering economic growth in coastal regions.

This is however only possible through effective social dynamics by intentional community engagement. Stakeholder involvement is critical in ensuring that local communities benefit from ORE projects. This includes fair compensation for land use and investment in local

¹¹⁶⁸ This is despite the 3-days 'Ministerial Retreat: Integrated National Electricity Policy and Strategic Implementation Plan (INEP-SIP)' held on the 12th -14th December 2024 Online: < <https://fgnpowerco.ng/ministerial-retreat-integrated-national-electricity-policy-and-strategic-implementation-plan-inep-sip/> > accessed 22 July 2024.

¹¹⁶⁹ IRENA, "Renewable Energy Benefits: Leveraging Local Capacity for Offshore Wind" (May 2018) Online: < <https://www.irena.org/publications/2018/May/Leveraging-Local-Capacity-for-Offshore-Wind> > accessed on 26 July 2024.

infrastructure¹¹⁷⁰ and, significantly, keen consideration for the environmental health of these communities. ORE developments should be attentive to air quality and the proper management of land/water use changes. Offshore installations may alter local landscapes and seascapes, requiring careful management to balance development with environmental conservation.¹¹⁷¹ Thus, robust legal frameworks are essential to ensure that local communities are adequately consulted and compensated.¹¹⁷² Environmental Impact Assessment and other regulatory tools must be effectively enforced to protect community interests and environmental health.¹¹⁷³

5.3 Regional Co-operations Necessitating Offshore Renewable Energy Development

Regional cooperation is essential for the development of offshore renewable energy (ORE) in Nigeria and across Africa. Collaborative efforts among African nations, regional organizations, and international bodies can address common challenges, share resources, and foster a supportive environment for ORE projects. This section explores the key aspects of regional cooperation necessary for advancing ORE development.

The African Union plays a pivotal role in promoting sustainable energy initiatives across the continent.¹¹⁷⁴ Through its Agenda 2063, the AU envisions a prosperous Africa based on inclusive growth and sustainable development.¹¹⁷⁵ The agenda emphasizes the importance of harnessing renewable energy resources, including offshore wind, tidal, and wave energy, to meet the continent's growing energy demands.¹¹⁷⁶

ECOWAS has also been at the forefront of regional energy cooperation in West Africa. Through the ECOWAS Renewable Energy Policy (EREP) and the ECOWAS Center for Renewable Energy and Energy Efficiency (ECREEE), the region aims to increase the share of

¹¹⁷⁰ Chad Walker & Jamie Baxter, "Procedural Justice in Canadian Wind Energy Development: A Comparison of Community-Based and Technocratic Siting Processes" (2017) 29 *Energy Research & Soc Sci* at 160-169 Online: <<https://www.sciencedirect.com/science/article/abs/pii/S221462961730124X>> accessed 25 July 2024.

¹¹⁷¹ *Ibid.*

¹¹⁷² *Ibid.*

¹¹⁷³ Catherine Ann Caine, "The Race to the Water for Offshore Renewable Energy: Assessing Cumulative and In-combination Impacts for Offshore Renewable Energy Developments" (March 2020) 32:1 *J Envtl L* at 83-109 Online: <<https://doi.org/10.1093/jel/eqz031>> accessed 2 July 2024.

¹¹⁷⁴ Akinyemi et al, *supra* note 320.

¹¹⁷⁵ African Union, "Agenda 2063: Framework Document, Goals & Priority Areas of Agenda 2063" (September 2015) at 101-107 Online:<https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf> accessed on 20 May 2024.

¹¹⁷⁶ *Ibid.*

renewable energy in the region's energy mix.¹¹⁷⁷ These policies provide a framework for member states, including Nigeria, to collaborate on ORE projects and share best practices.¹¹⁷⁸

However, apart from the West African Power Pool (WAPP), not much has been achieved by the African region in terms of ORE development, despite the benefits that regional cooperation can offer for accelerated ORE development across countries within the region.¹¹⁷⁹ Most African countries have yet to harness the full potential of ORE due to challenges such as limited financial resources, lack of technical expertise, and inadequate regulatory frameworks.¹¹⁸⁰ Regional cooperation, which could help overcome these barriers by pooling resources, sharing knowledge, and coordinating policy, remains underutilized outside of WAPP, leaving the region behind in the global shift towards sustainable energy.¹¹⁸¹ The development of regional frameworks and initiatives similar to WAPP across other parts of Africa, could be crucial for accelerating ORE projects and ensuring that the continent benefits from the global transition to renewable energy sources.

One of the primary benefits of regional cooperation is the development of interconnected energy grids, with such grids facilitating the distribution of electricity generated from ORE sources across multiple countries, enhancing energy security and stability.¹¹⁸² For example, the West African Power Pool (WAPP) aims to create a regional electricity market, allowing surplus energy from ORE projects in one country to be transmitted to neighboring countries with energy deficits.¹¹⁸³

Collaboration in joint research and development (R&D) is crucial for advancing ORE technologies as regional organizations, and research institutions can pool resources to conduct joint studies, develop new technologies, and address technical challenges unique to the African context. The African Energy Commission (AFREC) could be strengthened to play a significant role in coordinating energy research across the continent, promoting innovation in renewable energy.¹¹⁸⁴

¹¹⁷⁷ ECOWAS, “ECOWAS Vision 2050” (Abuja, June 2022) at 30 Online: < <https://www.ecowas.int/wp-content/uploads/2022/09/Vision-2050-EN.pdf> > accessed 26 May 2024.

¹¹⁷⁸ *Ibid.*

¹¹⁷⁹ ECOWAS, “About West African Power Pool” Online: < <https://www.ecowapp.org/en/content/creation-wapp> > accessed on 26 May 2024.

¹¹⁸⁰ RES4Africa Foundation, IRENA & UNECA, “Towards a Prosperous and Sustainable Africa: Maximizing the Socio-Economic Gains of Africa’s Energy Transition” (Rome: RES4Africa Foundation, 2023) at 18-42

¹¹⁸¹ *Ibid* at 84-94.

¹¹⁸² ECOWAS, “About West African Power Pool” Online: < <https://www.ecowapp.org/en/content/creation-wapp> > accessed on 26 May 2024.

¹¹⁸³ *Ibid.*

¹¹⁸⁴ African Energy Commission (AFREC), “About the African Energy Commission (AFREC)” Online: < <https://au-afrec.org/overview> > accessed on 24 July 2024.

Building technical and managerial capacity is vital for the successful implementation of ORE projects. Regional training programs and workshops facilitated by organizations like the African Renewable Energy Initiative (AREI) could help develop the skills needed to design, build, and manage ORE installations. These programs could also promote knowledge exchange among African countries, fostering a collaborative approach to renewable energy development.¹¹⁸⁵

Partnerships with international organizations and development agencies could be further leveraged to provide essential financial and technical support for ORE projects. The African Development Bank (AfDB), though limited, has been instrumental in financing renewable energy projects through initiatives like the Sustainable Energy Fund for Africa (SEFA).¹¹⁸⁶ However, improving access to the Global Environment Facility (GEF) and the Green Climate Fund (GCF) would offer more funding and technical assistance to support the deployment of ORE technologies in Africa.¹¹⁸⁷

Harmonizing regulatory frameworks across the region could streamline the development of ORE projects by bringing all the preceding steps into one unified framework. Uniform standards for environmental impact assessments (EIAs), safety regulations, and grid integration are essential to reduce barriers to cross-border projects. ECOWAS has made significant strides in this area by developing regional policies and guidelines that member states can adopt.¹¹⁸⁸ These regional policies may include the ECOWAS Renewable Energy Policy (EREP) and ECOWAS Energy Protocol, which could provide frameworks for member states to increase the share of renewables and improve energy efficiency, encouraging the adoption of best practices and regional standards.¹¹⁸⁹

However, provisions should also be made within the governance structure for effective management of transboundary environmental impacts, which is crucial for the sustainability of ORE projects. This could promote regional cooperation and facilitate the development of joint environmental management plans, ensuring that the ecological impacts of ORE installations are minimized. To achieve this, Africa could benefit from establishing a regional framework similar

¹¹⁸⁵ African Renewable Energy Initiative (AREI), “Home” Online: <<https://www.arei.info/eng>> accessed 24 July 2024.

¹¹⁸⁶ African Development Bank (AfDB), “Overview” Online: <<https://www.afdb.org/en/about/overview>> accessed 24 July 2024.

¹¹⁸⁷ Global Environment Facility (GEF), “Funding” Online: <<https://www.thegef.org/who-we-are/funding>> accessed 24 July 2024.

¹¹⁸⁸ ECOWAS, ECOWAS Vision 2050” (Abuja, June 2022) at 30 Online: <<https://www.ecowas.int/wp-content/uploads/2022/09/Vision-2050-EN.pdf>> accessed 26 May 2024.

¹¹⁸⁹ ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), “ECOWAS Renewable Energy Policy (EREP)” Online: <<https://www.ecreee.org/page/ecowas-renewable-energy-policy-erep>> accessed 12 June 2024.

to the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention),¹¹⁹⁰ where countries agree on standardized procedures for Environmental Impact Assessments (EIAs) that consider the transboundary effects of ORE projects, ensuring that all stakeholders are consulted, and environmental impacts are thoroughly assessed before project approval. The African Ministerial Conference on the Environment (AMCEN) could be leveraged as a platform for member states to discuss and coordinate environmental policies, that should be contemplated in this regional transboundary EIA agreement.¹¹⁹¹

In summary, regional cooperation is a cornerstone of successful offshore renewable energy development in Nigeria and Africa. By leveraging the collective strengths of regional organizations, shared infrastructure, financial and technical assistance, and harmonized policies, Nigeria could better address the challenges associated with ORE projects and move towards a sustainable energy future.

5.4 A Case for a Global Regime for Offshore Renewable Energy Governance

The global push towards sustainable energy sources has highlighted the need for robust governance frameworks to manage the development and utilization of offshore renewable energy (ORE). As nations strive to harness the immense potential of wind, tidal, and wave energy, a coordinated and comprehensive international regime becomes imperative. This section argues for the establishment of such a regime, examining the benefits and critical elements required for its successful implementation. It also aims to propose three avenues that would facilitate the global regime towards ORE, which includes a global renewable energy treaty; facilitating implementation through IRENA and a task force; and working within current frameworks to advance ORE.

5.4.1 Benefits of a Global Regime for Offshore Renewable Energy Governance

ORE projects often span international waters, making it crucial to have harmonized regulations to prevent conflicts and ensure efficient resource use. International waters, governed by the United Nations Convention on the Law of the Sea (UNCLOS), presents a foundational legal

¹¹⁹⁰ This international treaty was adopted in Espoo, Finland, in 1991 and is administered by the United Nations Economic Commission for Europe (UNECE). The Espoo Convention sets out the obligations of countries to assess the environmental impact of certain activities at an early stage of planning and to notify and consult each other on all major projects under consideration that are likely to have significant adverse environmental impacts across borders; United Nations Economic Commission for Europe (UNECE), “Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention)” Online: <<https://unece.org/environment-policy/environmental-impact-assessment>> accessed 19 August 2024.

¹¹⁹¹ UNEP, “African Ministerial Conference on the Environment (AMCEN)” Online: <<https://www.unep.org/regions/africa/african-ministerial-conference-environment>> accessed on 24 July 2024.

landscape, it however necessitates a unified approach to manage, and protect the marine environment while exploiting renewable energy resources.¹¹⁹²

The ecological impacts of ORE installations, such as changes in marine habitats and species displacement, are not confined to national boundaries. More so, the variation in legal and regulatory frameworks across countries poses a significant challenge to regulating these changes from ORE development. Thus, a global regime could necessitate an alignment of these diverse systems while respecting national sovereignty and legal traditions. This could further standardize environmental impact assessments (EIAs) and monitoring protocols, ensuring that the cumulative effects of ORE projects are adequately managed and mitigated. It could also utilize an approach that aligns with evolving international environmental principles, such as the precautionary principle and ecosystem-based management (EBM).¹¹⁹³

A global regime would address economic disparities by providing financial support to less developed countries, ensuring equitable access to renewable energy resources. To further close the economic gap delaying ORE development, a global fund, specific to support ORE projects, particularly in developing countries, could be established by the global regime. This fund could be financed through contributions from developed nations, international financial institutions, and private sector investments.

A global regime could facilitate the exchange of technology and expertise among countries, particularly benefiting developing nations. Collaborative research and development (R&D) initiatives could drive innovation in ORE technologies, making them more efficient and cost-effective. Such cooperation is vital for achieving global renewable energy targets and combating climate change.¹¹⁹⁴ Additionally, technical assistance programs would help build the necessary infrastructure and human capacity in less developed regions. This could be promoted by establishing international R&D consortia that can drive innovation and reduce costs. Collaborative projects can focus on improving the efficiency of ORE technologies, developing new materials,

¹¹⁹²UNCLOS 1982.

¹¹⁹³ SM Garcia et al, "The Ecosystem Approach to Fisheries: Issues, Terminology, Principles, Institutional Foundations, Implementation and Outlook" (Rome: FAO, 2003) FAO Fisheries Technical Paper No. 443 at 5-25 Online: < <https://openknowledge.fao.org/server/api/core/bitstreams/ab44d5f1-1368-4c09-9740-7651a72f988f/content>> accessed 26 July 2024.

¹¹⁹⁴ IEA, 'Renewables 2020: Wind' (IEA Paris, 2020) Online: < <https://www.iea.org/reports/renewables-2020/wind>> accessed on 26 July 2024.

and addressing environmental impacts. Sharing research outcomes globally ensures that all countries benefit from technological advancements.

5.4.2 Avenues to Facilitate a Global Regime for ORE Governance

ORE presents a critical opportunity for addressing global energy needs while mitigating climate change. However, the governance of ORE requires a cohesive and coordinated approach that transcends national boundaries. Establishing a global regime for ORE governance could be facilitated through a renewable energy treaty, strengthened by the regulatory frameworks provided by the International Renewable Energy Agency (IRENA), and supported by a dedicated task force. Also, working within existing international frameworks and promoting collaboration among states, the global community can create effective mechanisms for the sustainable development of ORE projects, ensuring that they contribute to the global energy transition while protecting the marine environment.

5.4.2.1 A Global Renewable Energy Treaty

The concept of a Global Renewable Energy Treaty is a visionary approach aimed at addressing the urgent need for a coordinated international response to the global energy transition. Such a treaty would serve as a legally binding framework, bringing together countries to commit to the promotion, development, and deployment of renewable energy sources, including Offshore Renewable Energy (ORE). The treaty would be a crucial step in accelerating global efforts to combat climate change, reduce greenhouse gas emissions, and promote sustainable development.

Some key components of this Treaty could include a global roadmap for the transition to renewable energy, providing clear milestones and timelines for phasing out fossil fuels and scaling up renewable energy capacity. Another key component of the treaty could be the establishment of international funding mechanisms to support renewable energy projects, particularly in developing countries. This could include the creation of a Global Renewable Energy Fund and the development of financial instruments such as green bonds, carbon credits, and subsidies to incentivize the deployment of renewable energy technologies.

To further ensure the smooth integration of renewable energy projects across borders, the treaty could promote the harmonization of regulatory frameworks and standards on renewable covering both onshore and offshore. This would include uniform guidelines for Environmental

Impact Assessments (EIAs), safety regulations, and technical standards for renewable energy technologies. Countries might be encouraged to enter the treaty, where it standardizes regulations across borders, offers access to financing, reduces legal ambiguities and fosters smoother cooperation.

The provisions on ORE could include detailed guidelines on the siting, construction, and operation of offshore renewable installations, ensuring that all activities comply with international environmental standards. Also, developing international standards for ORE installations, supported by a certification system, could ensure that projects meet high safety, environmental, and operational benchmarks.

The United Nations Environment Assembly (UNEA),¹¹⁹⁵ the world's highest-level decision-making body on environmental matters, has increasingly taken on the role of addressing global environmental challenges through international treaties and agreements.¹¹⁹⁶ Following its successful initiative in pushing for the development of a global treaty on plastic pollution, UNEA could play a pivotal role in advocating for a Global Renewable Energy Treaty.¹¹⁹⁷ Similar to its efforts in addressing plastic pollution, where UNEA successfully garnered global support for the creation of a legally binding treaty to end plastic pollution,¹¹⁹⁸ the Assembly could leverage its platform to build international consensus on the need for a Global Renewable Energy Treaty. UNEA's ability to bring together member states, NGOs, and experts provides a strong foundation for launching global initiatives that address pressing environmental issues.¹¹⁹⁹ UNEA could initiate discussions and negotiations, leading to the formalization of the treaty. By building on the momentum from the plastics treaty, UNEA can highlight the urgency of transitioning to renewable energy and the need for a cohesive international framework to support this transition.¹²⁰⁰

Moreso, UNEA has experience in facilitating complex multilateral negotiations, which would be essential for the development of a Global Renewable Energy Treaty.¹²⁰¹ The Assembly could act as a neutral platform where countries can negotiate the terms of the treaty, balancing the

¹¹⁹⁵ UNEP, "The United Nations Assembly" Online: <<https://www.unep.org/environmentassembly/>> accessed on 17 August 2024.

¹¹⁹⁶ *Ibid.*

¹¹⁹⁷ "In March 2022, at the resumed fifth session of the UN Environment Assembly (UNEA-5.2), a historic resolution was adopted to develop an international legally binding instrument on plastic pollution, including in the marine environment"; UNEP, "Intergovernmental Negotiating Committee on Plastic Pollution" Online:< <https://www.unep.org/inc-plastic-pollution/>> accessed 17 August 2024.

¹¹⁹⁸ *UN Environment Assembly, Resolution 5/14, End Plastic Pollution: Towards an Internationally Legally Binding Instrument*, UNEP/EA.5/Res.14 (2 March 2022) Online: < <https://wedocs.unep.org/bitstream/handle/20.500.11822/39812/>> accessed on 17 August 2024.

¹¹⁹⁹ UNEP, "The United Nations Assembly" Online: <<https://www.unep.org/environmentassembly/>> accessed on 17 August 2024.

¹²⁰⁰ *Ibid.*

¹²⁰¹ *Ibid.*

interests of developed and developing nations, and ensuring that the treaty is equitable and effective.¹²⁰² The process could be modeled on UNEA’s approach to the plastics treaty, where it set clear timelines, objectives, and working groups to ensure progress.¹²⁰³ A similar structure could be employed for the renewable energy treaty, with UNEA providing oversight and coordination.

5.4.2.2 Regulation under the Global Renewable Energy Treaty

A dedicated international body, potentially under the auspices of the United Nations, could oversee the regulation and implementation of the global renewable energy treaty. This body would coordinate efforts, monitor compliance, and facilitate international cooperation. The International Renewable Energy Agency (IRENA) could play a crucial role in this regard by strengthening IRENA’s role.¹²⁰⁴ IRENA’s expertise in renewable energy policy, technology, and finance would be invaluable in guiding the development of the treaty and supporting its objectives. IRENA could be empowered to play a more central role in coordinating international efforts, providing technical expertise, and facilitating policy dialogue among nations. By establishing a dedicated ORE division, IRENA could offer targeted support to emerging ORE markets and help integrate best practices globally.

Also, creating an international task force comprising representatives from leading ORE countries, environmental organizations, and industry stakeholders could drive coordinated action on pressing issues such as technology standards, environmental impact mitigation, and socio-economic equity. This task force could be charged with regular audits to monitor compliance with global regulations and standards, providing transparency and accountability in ORE projects.

5.4.2.3 Promoting ORE under Current International Frameworks

Countries may be reluctant to cede control over their maritime resources and regulatory authority to an international body. Thus, balancing national interests with global governance objectives requires careful negotiation and the establishment of trust among nations. An interim approach that may solve this challenge and lead to faster action from states before the global renewable energy treaty is in place would be building on existing international frameworks.

¹²⁰² *Ibid.*

¹²⁰³ *Ibid.*

¹²⁰⁴ IRENA, “About IRENA” Online: < <https://www.irena.org/About> > accessed on 20 June 2024.

Building on MEAs such as UNFCCC, the Paris Agreement and UNCLOS could facilitate ways forward for ORE governance.

Given the significant role that ORE can play in achieving global climate goals, there might be a compelling argument for establishing a dedicated protocol under the UNFCCC.¹²⁰⁵ This protocol could be similar to the Kyoto Protocol but focused specifically on the promotion, development, and regulation of ORE.¹²⁰⁶ A protocol under the UNFCCC would provide a dedicated legal framework for ORE, ensuring that it receives the attention and resources necessary to scale up globally. While the Kyoto Protocol focused on reducing greenhouse gas emissions through mechanisms like carbon trading, a new protocol could establish specific commitments and targets for ORE development, similar to how the Kyoto Protocol set binding emission reduction targets for developed countries.¹²⁰⁷

The new protocol could also establish binding commitments for countries to increase their share of ORE in the energy mix. It could also set out mechanisms for monitoring, reporting, and verification (MRV) to ensure that countries meet their commitments. This would help hold countries accountable for their renewable energy targets and promote transparency in the global energy transition. The new protocol could further be integrated into the existing UNFCCC structure, leveraging mechanisms such as the Green Climate Fund (GCF) and the Technology Mechanism to provide the necessary financial and technical support for ORE projects.¹²⁰⁸ By building on these established mechanisms, the protocol could facilitate the rapid deployment of ORE technologies and help overcome barriers to their adoption.

In light of the COP 28 target to triple global renewable energy capacity by 2030¹²⁰⁹, there is a pressing need to formalize this ambition within the international climate framework. One effective way to do this is by establishing a Decision on Renewable Energy under the Paris Agreement.¹²¹⁰ This Decision could mandate that Parties to the Agreement commit to specific actions and collaborations aimed at accelerating the deployment of renewable energy sources,

¹²⁰⁵ UNFCCC 1992.

¹²⁰⁶ United Nations Framework Convention on Climate Change (UNFCCC), “Kyoto Protocol” Online: <https://unfccc.int/kyoto_protocol> accessed 17 August 2024.

¹²⁰⁷ *Ibid*

¹²⁰⁸ United Nations, “Green Climate Fund” Online:<[Green Climate Fund | UNFCCC](#)> accessed on 17 August 2024.

¹²⁰⁹ IEA, “COP 28 Tripling Renewable Capacity Pledge” Online: <[COP28 Tripling Renewable Capacity Pledge – Analysis - IEA](#)> accessed on 18 August 2024.

¹²¹⁰ Paris Agreement 2015.

including ORE. The Decision could require countries to formally integrate renewable energy targets into their Nationally Determined Contributions (NDCs), with specific emphasis on scaling up ORE projects.¹²¹¹ The Decision could also enhance global coordination in the renewable energy sector, aligning national efforts with international climate goals. This is particularly important for ORE, which often involves cross-border cooperation and the use of shared marine resources.

The Ocean and Climate Change Dialogue could also be a platform to hold discussions with Parties to the Agreement and observers on the topic of renewable energy and the need to establish a Decision.¹²¹² This is because the Ocean and Climate Dialogue is responsible for deciding its topics for and conducting dialogue, in consultation with Parties and observers.¹²¹³ It is also tasked with preparing an informal summary report on this dialogue to be presented in a subsequent session of the Conference of the Parties.¹²¹⁴ This could bring the discussions from the Dialogue to COP, which would encourage Parties to support the establishment of the Decision and take actionable steps towards achieving the target of tripling renewable energy by 2030.¹²¹⁵

Under UNCLOS¹²¹⁶ there might be a potential for developing an Implementation Agreement dedicated to renewable energy. UNCLOS which currently governs activities in the world's oceans, has already been supplemented by implementation agreements, such as the 1994 Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea¹²¹⁷ and the 1995 Fish Stocks Agreement.¹²¹⁸ The 1994 Agreement addressed concerns related to deep seabed mining, particularly for developing countries, by modifying the financial and administrative provisions of Part XI of UNCLOS to ensure more equitable access and benefit-sharing from seabed resources.¹²¹⁹ The 1995 Fish Stocks Agreement focuses on the conservation and management of straddling and highly migratory fish stocks, emphasizing the need for cooperation between states and the sustainable use of marine resources.¹²²⁰ Given these

¹²¹¹ *Ibid.*

¹²¹² UNFCCC, "Ocean and Climate Change Dialogue" Online: < <https://unfccc.int/topics/ocean/ocean-and-climate-change-dialogue> > accessed on 17 August 2024.

¹²¹³ *Ibid.*

¹²¹⁴ *Ibid.*

¹²¹⁵ *Ibid.*

¹²¹⁶ UNCLOS 1982.

¹²¹⁷ Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea, 28 July 1994, 1836 UNTS 3 [1994 Agreement].

¹²¹⁸ Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 4 August 1995, 2167 UNTS 3 [1995 Fish Stocks Agreement].

¹²¹⁹ 1994 Agreement.

¹²²⁰ 1995 Fish Stocks Agreement.

precedents, an Implementation Agreement under UNCLOS specifically focused on renewable energy could be proposed. The new implementation agreement could establish guidelines for the development, regulation, and management of ORE projects, ensuring they align with international legal standards and environmental protections. Similar to the Fish Stocks Agreement, this implementation agreement could foster international cooperation on ORE projects that span multiple jurisdictions, particularly in ABNJ.¹²²¹ This would help harmonize standards and promote shared use of marine resources for renewable energy.

The United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea,¹²²² could also play a role in promoting ORE. It is an informal consultative process to facilitate an annual review of developments in ocean affairs and law of the sea.¹²²³ It places an emphasis on identifying areas where coordination and cooperation at the intergovernmental and inter-agency level should be enhanced.¹²²⁴ While the informal consultative process held a discussion on marine renewables in 2012,¹²²⁵ it might be able to put ORE on the priority agenda. Given the current interest it is generating globally and the push for climate resilience in recent times.

The transition to offshore renewable energy is a global imperative that requires a coordinated and comprehensive governance regime. Such a regime can harmonize regulations, protect the marine environment, facilitate technological exchange, and ensure equitable access to renewable energy resources. Despite challenges related to sovereignty, legal diversity, and economic disparities, the benefits of a global ORE governance framework are significant. Establishing international legal frameworks, institutional mechanisms, funding structures, and R&D collaborations are critical steps towards achieving this goal. As the world grapples with the urgent need to combat climate change and secure sustainable energy sources, a better global regime for offshore renewable energy governance is not just desirable but essential.

¹²²¹ *Ibid.*

¹²²² United Nations, “United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea” (June 2024) Online: < https://www.un.org/depts/los/consultative_process/consultative_process.htm > accessed 17 August 2024.

¹²²³ *Ibid.*

¹²²⁴ *Ibid.*

¹²²⁵ *Ibid.*

CHAPTER 6: CONCLUSION

6.1 Summary of Findings

This thesis has examined the critical aspects of offshore renewable energy (ORE) governance in Nigeria, considering historical, legal, regional, and international perspectives. The study began with an in-depth analysis of Nigeria's energy sector, highlighting the pre-colonial, colonial, and post-colonial eras, and identifying the significant legal and regulatory frameworks governing energy development. The current seascape was evaluated, revealing the existing laws, their effectiveness, implementation challenges, and the socio-economic and environmental impacts of ORE development.

The research then transitioned to a regional perspective, analyzing the Bakassi Peninsula case and its implications for Nigeria's regional relationships. The roles of regional organizations like the African Union (AU) and the Economic Community of West African States (ECOWAS) were critically examined, alongside regional policies such as the UNEP Regional Seas Program. The challenges and opportunities in regional collaboration and commitments toward ORE development were discussed in detail.

This thesis also explored the multifaceted aspects of Offshore Renewable Energy (ORE) governance, emphasizing the necessity of a comprehensive and coordinated international approach. Key findings here include the foundational role of international legal instruments such as UNCLOS, UNFCCC, BBNJ, Paris Agreement, and CBD in guiding the development and regulation of ORE. These frameworks promise to ensure that ORE activities are conducted in a manner that protects marine environments and respects the rights of various stakeholders. International principles like the Precautionary Principle, Public Participation, Ecosystem Approach, and Social Equity and Adaptive Management were examined. These principles are essential for ensuring that ORE development is sustainable and inclusive. Case studies of jurisdictions like Netherlands, Canada, New Jersey, United Kingdom and Scotland illustrated diverse approaches to ORE governance. These examples highlighted the importance of robust regulatory frameworks, stakeholder engagement, and technological innovation in successfully harnessing ORE. The analysis provided insights into how Nigeria can leverage international best

practices to develop its own ORE sector. Recommendations included the establishment of clear regulatory frameworks, comprehensive EIAs, and inclusive stakeholder engagement processes.

Finally, the future courses for Nigeria were charted, considering national directions and the ecological impacts of ORE development. The implications for local communities and alignment with Social Development Goals (SDGs) were highlighted. The necessity for regional cooperation and a global governance regime for ORE was emphasized, advocating for a unified and comprehensive framework to address the multifaceted challenges of offshore renewable energy governance.

6.2 Contributions

This thesis makes several significant contributions to the field of offshore renewable energy governance. By using historical contextualization and tracing the evolution of Nigeria's energy sector, the study provides a substantiated historical backdrop that informs current and future policy directions. In addition, the detailed examination of Nigeria's legal and regulatory frameworks offers critical insights into the effectiveness and gaps in current governance structures, suggesting areas for reform and improvement. Furthermore, the analysis of regional dynamics and international frameworks highlights the importance of cross-border cooperation and the need for harmonized policies to effectively manage ORE resources.

The thesis also provides forward-looking recommendations that align with global best practices and sustainability goals, offering a roadmap for policymakers, stakeholders, and researchers. With the inclusion of case studies from other jurisdictions, the thesis provides insights and lessons that can be applied to Nigeria, enriching the understanding of ORE governance within a global context.

6.3 Future Prospects and Further Research

The prospects for offshore renewable energy governance in Nigeria are promising, yet contingent on several critical factors. One of such is a continued reform of legal and regulatory frameworks is essential to create an enabling environment for ORE development. This includes updating existing laws, addressing implementation challenges, and ensuring alignment with international standards. Ensuring the active participation and benefit of local communities is

paramount. Policies must address social impacts, provide equitable access to energy, and support community-driven projects.

Also, strengthening regional cooperation through organizations like ECOWAS and the AU will be vital. Collaborative projects, shared research, and joint funding mechanisms can significantly advance ORE initiatives. Investment in research and development (R&D) to improve ORE technologies and reduce costs is crucial. Embracing innovative solutions and best practices from global leaders could accelerate Nigeria's ORE sector. A strong focus on environmental impact assessments and ecosystem-based management would ensure that ORE projects do not compromise marine biodiversity and ecological health.

Further research is however needed in several areas. Comprehensive studies on the environmental and socio-economic impacts of ORE projects in Nigeria would provide valuable data to guide sustainable development. Also, evaluating the long-term effectiveness of implemented regulations and identifying best practices can help refine governance frameworks. Comparative studies with other countries could offer additional insights and innovative solutions that can be adapted to Nigeria's context. By addressing these areas, Nigeria could position itself as a leader in offshore renewable energy, contributing to global sustainability goals while enhancing national energy security and economic development.

In conclusion, the governance of Offshore Renewable Energy is at a critical juncture. The insights and recommendations provided in this thesis aim to contribute to the ongoing discourse and efforts to develop a sustainable, inclusive, and globally coordinated ORE sector. By embracing international best practices, fostering innovation, and ensuring robust legal and institutional frameworks, the global community can harness the immense potential of offshore renewable energy to address climate change, promote sustainable development, and secure a resilient energy future.

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