

**INSTITUTE OF PUBLIC ADMINISTRATION  
AND MANAGEMENT  
(UNIVERSITY OF SIERRA LEONE)**



**A RESEARCH PROPOSAL**

**ON**

**FUEL DEPENDENCY AND ENERGY INSECURITY IN SIERRA LEONE: AN  
ANALYTICAL ENQUIRY**

**RESEARCH TEAM**

DR. VICTOR MOININA

COL. ROLAND GBONDO

MRS. ABIBATU DORA KAMARA

MR. OSMAN THAIMU KAMARA

MR. SANTIGIE ABU KAMARA

## **Profile of Team Members**

### **Dr Victor Moinina**

Victor Moinina is a Sierra Leonean, holder of a PhD and MSc in Governance and Regional Integration from Pan African University Institute of Governance, Humanities and Social Sciences, University of Yaoundé II, Soa, Cameroon; C.E.O. and Executive Director of Pro-Idealist Limited, C.E.O. and Founder for Forum for the Development of Young People worked as the National Early Warning Systems Manager at the West Africa Network for Peacebuilding- Sierra Leone. He has been a junior consultant with the African Union Commission with the implementation of the Agenda 2063 during the launch of the agenda in Hammamet, Tunisia and D.F.I.D. in the fight against Early Girl Marriage and Female Genital Mutilation. Victor Moinina is a renowned orator and has won many awards as best speaker from his undergraduate days at the Fourah Bay College, University of Sierra Leone. Regarding research, he has done research works with Evidence for Action International (M.A.M.A.Y.E. Project), Ministry of Finance and Economic Development (PETS), National Public Procurement Authority (PRICE SURVEY), United Nations Development Program/Office of National Security (NEEDS/THREATS ASSESSMENT), Conservation Trust Fund (CTF) to develop their strategic plan for 2020-2023 and conducted his research for his Master Thesis in Sierra Leone (The Role of Youths in Civil Society and Governance) and his PhD dissertation (The Role of Civil Society in Consolidating Peacebuilding in Sierra Leone 2008-2018). He is amicable and energetic in implementing fieldwork with a small team of experts. He is a Senior Lecturer at the Faculty of Leadership and Governance at the Institute of Public Administration and Management.

### **Col. Roland R. Gbondo**

Roland R. Gbondo holds an MPhil degree in economics from Legon University of Ghana and a master's degree in public administration from the Bangladesh University for Professionals. Roland R. Gbondo is an associate lecturer of ethics and management at the Institute of Public Administration and Management (I.P.A.M.) University of Sierra Leone. Roland is an author, business, management consultant, and founder of the Ethics and Integrity Club I.P.A.M. Roland is both a supply-side economist and a moral economist. As a supply-side economist, he believes in supply-side policies. As a moral economist, he thinks economics has a moral focus and a morally desirable economic growth and development.

### **Mrs Abibatu Dora Kamara**

Abibatu Dora Kamara is a dedicated individual passionate about public sector management and governance. She holds a Bachelor of Science Honors in Public Sector Management and a Master of Science in Governance and Leadership from the prestigious Institute of Public Administration and Management (I.P.A.M.).

She works as a full-time lecturer at I.P.A.M., where she can share her knowledge and expertise with aspiring students. Teaching has always been her calling, as it allows her to shape young minds and contribute to the development of future leaders.

Prior to my academic career, She spent several years working as a journalist. During this time, she had the privilege of writing numerous articles and stories for various newspapers in Sierra Leone. This experience not only honed her writing skills but also provided me with an in-depth understanding of the socio-political landscape of my country.

### **Mr. Osman Thaimu Kamara**

Osman Thaimu Kamara is a lecturer at the Department of Public Administration, Faculty of Leadership and Governance, IPAM, University of Sierra Leone. He holds a Master's in Development Management – I.P.A.M. and a BSc. Hons - Public Sector Management – I.P.A.M. He has extensive administrative knowledge and skills acquired over time, working in various institutions.

### **Mr Santigie Abu Kamara**

Santigie Abu Kamara is a lecturer at the Institute of Public Administration and Management at the University of Sierra Leone, Reaps Technical College. He holds an MSc in governance and leadership I.P.A.M., Post Graduate Diploma in education FBC, a BSc in Business Administration I.P.A.M., a Diploma in Software Application Banktec College, a Certificate in procurement and Logistics management PGTI-UK, M.B.A. in Human Resource Management (awaiting results). He possesses a unique research and writing skills.

## **1.0 INTRODUCTION**

The intricate relationship between energy dependency and security remains a pertinent and complex issue within the contemporary global landscape. Fuel dependency, in particular, represents a critical facet of this broader discourse, with far-reaching implications for economic development, environmental sustainability, and national security. This study embarks on an analytical inquiry into the dynamics of fuel dependency and energy insecurity in Sierra Leone, a nation with unique socio-economic and historical characteristics that have shaped its energy landscape.

Sierra Leone, nestled on the coast of West Africa, has been grappling with the challenges of fuel dependency, particularly on imported fossil fuels, as it seeks to secure a sustainable and resilient energy future. The case of Sierra Leone is emblematic of the broader struggles that many developing nations face in the 21st century and, thus, warrants scholarly attention. The present inquiry seeks to unravel the underlying causes, consequences, and potential solutions for fuel dependency and energy insecurity in Sierra Leonean to address this critical issue.

The causes of fuel dependency in Sierra Leone can be traced to a multitude of factors, including historical legacies, economic constraints, and governance challenges. The nation's reliance on imported petroleum products, often subject to volatile global prices and geopolitical uncertainties, poses a significant challenge to its energy security. Furthermore, the lack of diversification in the energy mix leaves Sierra Leone vulnerable to supply disruptions and price shocks in the global energy market.

This study aims to provide a comprehensive understanding of these interconnected issues through a multifaceted analysis, drawing on the expertise and insights of scholars and practitioners in the fields of energy security, development studies, and environmental sustainability. It is guided by the belief that a nuanced exploration of fuel dependency and energy insecurity is essential for Sierra Leone and other countries facing similar challenges.

By delving into the historical, economic, and environmental dimensions of fuel dependency and energy insecurity, this research endeavours to provide a foundation for informed policy decisions and sustainable energy planning. We hope this analytical inquiry will contribute to the body of knowledge on energy security and offer pragmatic solutions that can bolster economic resilience and promote a sustainable energy future in Sierra Leone and other nations confronting analogous challenges.

### **1.1 Statement of the Problem**

Sierra Leone's continued reliance on imported fossil fuels and the associated lack of energy diversification present a multifaceted challenge with profound implications for the nation's economic stability, environmental sustainability, and energy security. While Sierra Leone possesses abundant renewable energy resources, including solar and hydroelectric potential, the country remains entangled in a precarious situation characterized by fuel dependency and energy insecurity. This problem statement highlights the issues at the heart of the case study "Fuel Dependency and Energy Insecurity in Sierra Leone: An Analytical Enquiry."

- **Economic Vulnerability:** Sierra Leone's heavy dependence on imported fossil fuels, such as petroleum products, exposes the nation to the volatility of global energy markets. Fluctuating oil prices can have dire consequences on the country's trade balance, fiscal stability, and overall economic development (Togan, 2009). The burden of fuel importation can strain the national budget and hinder the allocation of resources to critical sectors like education and healthcare (Ali & Hali, 2019).
- **Energy Security Concerns:** Importing most of its energy sources renders Sierra Leone vulnerable to supply disruptions, which geopolitical tensions, natural disasters, or other unforeseen events may cause. This vulnerability compromises the nation's energy security and resilience (Sovacool & Mukherjee, 2011). Moreover, the limited diversification in the energy mix leaves Sierra Leone ill-prepared to address disruptions in the supply of fossil fuels.
- **Environmental Sustainability:** Relying on fossil fuels contributes to environmental degradation and climate change, posing long-term risks to Sierra Leone's ecological health and citizens' well-being. Failure to transition to cleaner and more sustainable energy sources further exacerbates environmental challenges (IEA, 2020). Additionally, the extraction and transportation of fossil fuels can have adverse local ecological impacts.
- **Social Implications:** Energy insecurity from fuel dependency can undermine social services, particularly in rural and underserved areas. Unequal access to reliable energy sources can exacerbate socio-economic disparities and limit opportunities for education and economic development (Bensch & Peters, 2018).

Addressing the problem of fuel dependency and energy insecurity in Sierra Leone necessitates a comprehensive understanding of its root causes and consequences. This analytical inquiry aims to shed light on these issues, providing valuable insights that can inform policy decisions,

energy planning, and sustainable development strategies for Sierra Leone and other nations facing similar challenges.

## **1.2 Research Aims and Objectives**

### **1.2.1 Aim**

This research aims to comprehensively analyze fuel dependency and energy insecurity in Sierra Leone, focusing on understanding their causes, consequences, and potential solutions, ultimately contributing to informed policymaking and sustainable energy development.

### **1.2.2 Objectives**

The specific objectives of this study are as follows:

- **To Examine the Causes of Fuel Dependency in Sierra Leone:** This objective involves an in-depth investigation of the historical, economic, and governance factors contributing to Sierra Leone's heavy reliance on imported fossil fuels, particularly petroleum products. By identifying the underlying causes, this research seeks to elucidate why the nation is in this predicament.
- **To Analyze the Consequences of Fuel Dependency:** This objective involves a comprehensive assessment of the implications of fuel dependency for Sierra Leone's economy, environment, and energy security. It includes an exploration of the socio-economic, fiscal, and environmental consequences of this dependency and its effects on national security.
- **To Assess the Potential for Energy Diversification:** This objective evaluates Sierra Leone's capacity to diversify its energy mix and transition towards more sustainable and secure energy sources, including renewable energy options. It involves an examination of the country's renewable energy potential, existing policies, and governance frameworks (IEA, 2020).
- **To Investigate Policy and Governance Frameworks:** This objective critically analyses existing energy policies, governance structures, and international agreements in Sierra Leone. It aims to assess the effectiveness of current policies in addressing fuel dependency and energy insecurity and to propose potential improvements (Sovacool & Mukherjee, 2011).
- **To Offer Policy Recommendations:** Drawing on the findings from the preceding objectives, this objective seeks to provide evidence-based policy recommendations for

mitigating fuel dependency and enhancing energy security in Sierra Leone. These recommendations will be informed by international best practices and the country's specific context (UNDP, 2020).

- **To Contribute to the Global Discourse on Energy Security:** As part of the broader academic community, this objective aims to contribute to the global discourse on energy security and sustainability, offering insights that can inform the strategies of other developing countries facing similar challenges (Sovacool, 2013).

By addressing these objectives, this research endeavour aspires to provide a robust and multifaceted understanding of fuel dependency and energy insecurity in Sierra Leone, serving as a valuable resource for policymakers, energy planners, and development practitioners seeking to foster sustainable and secure energy futures in Sierra Leone and other nations confronting analogous challenges.

### 1.3 Theoretical Framework

The theoretical framework for the study on fuel dependency and energy insecurity in Sierra Leone draws on several essential theoretical perspectives and concepts relevant to energy security, economic development, and policy analysis. This framework is the foundation for understanding and analyzing the issues and guiding the research process. The primary theoretical frameworks and concepts include:

1. **Energy Security Theory:** This framework is central to understanding the core concept of energy security. Energy security theory examines the dimensions of energy security, encompassing aspects such as availability, affordability, reliability, and environmental sustainability (Sovacool & Mukherjee, 2011). By employing this framework, the study assesses Sierra Leone's energy situation in terms of these dimensions and evaluates the nation's vulnerabilities and risks.
2. **Resource Curse Theory:** The Resource Curse Theory is pertinent to the study's examination of the economic consequences of fuel dependency. This theory explores how countries rich in natural resources, such as fossil fuels, may experience adverse economic outcomes, including corruption and underdevelopment (Auty, 1993). In the case of Sierra Leone, this theory helps to analyze the potential negative impacts of resource dependency.



3. **Institutional and Governance Theories:** Understanding the role of governance and institutions in shaping energy policies and mitigating energy insecurity is crucial. The Institutional and Governance Theories provide a lens for evaluating the effectiveness of Sierra Leone's energy governance structures, including the regulatory framework and the role of government agencies (North, 1990).
4. **Sustainable Development Theory:** Sustainable development theory guides the analysis of environmental sustainability. This framework posits that development should meet the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland, 1987). The study uses this framework to assess Sierra Leone's energy and environmental sustainability approach.
5. **Energy Transition Theory:** Energy Transition Theory is relevant to assessing Sierra Leone's potential for diversifying its energy mix. This theory explores the processes and strategies for shifting from fossil fuel-based energy systems to renewable and sustainable sources (Geels, 2010). The study applies this framework to evaluate Sierra Leone's readiness and potential for transitioning to cleaner energy sources, such as solar and hydroelectric power.
6. **Policy Analysis Framework:** Policy analysis frameworks, including the Policy Cycle Model (Howlett & Ramesh, 2003), guide examining existing energy policies, their development, implementation, and evaluation. This framework helps assess the effectiveness of policies in addressing fuel dependency and energy insecurity in Sierra Leone.

By integrating these theoretical perspectives, the study creates a comprehensive framework for investigating the causes and consequences of fuel dependency and energy insecurity in Sierra Leone. This theoretical foundation will inform the research methodology, data collection, and analysis, allowing for a multidimensional and holistic understanding of the issues at hand and, subsequently, the development of evidence-based policy recommendations.

## 1.4 Conceptual Framework



The conceptual framework for the study on fuel dependency and energy insecurity in Sierra Leone is built upon a comprehensive understanding of the interrelated concepts and factors that influence the nation's energy landscape. This framework provides a structured approach to analyzing the complexities surrounding fuel dependency and energy insecurity in Sierra Leone. The critical components of the conceptual framework include:

**1. Energy Sources and Dependency:** This component outlines the primary sources of energy in Sierra Leone, focusing on the dominance of imported fossil fuels, particularly petroleum products. It examines the historical, economic, and geopolitical factors contributing to the country's dependency on these fuels.

**2. Energy Security Dimensions:** The conceptual framework encompasses the various dimensions of energy security, including availability, affordability, reliability, and environmental sustainability (Sovacool & Mukherjee, 2011). These dimensions serve as critical indicators for evaluating the adequacy and resilience of Sierra Leone's energy supply.

**3. Governance and Policy Framework:** This component assesses the institutional arrangements, regulatory frameworks, and policy measures governing the energy sector in Sierra Leone. It examines the role of government agencies, industry stakeholders, and international partners in shaping energy policies and strategies.

**4. Economic Impacts:** The framework addresses the economic consequences of fuel dependency, considering factors such as fiscal stability, trade balances, and the potential for resource curse effects (Auty, 1993). It explores how the reliance on imported fossil fuels may affect Sierra Leone's economic development and fiscal sustainability.

**5. Environmental Sustainability:** This component evaluates the environmental implications of fuel dependency, including carbon emissions, air pollution, and the degradation of natural ecosystems. It considers the potential for transitioning to cleaner and more sustainable energy sources to mitigate environmental impacts.

**6. Social and Developmental Considerations:** The conceptual framework acknowledges the social dimensions of energy insecurity, examining how unequal access to reliable energy sources may impact education, healthcare, and overall human development indicators (Bensch & Peters, 2018). It also considers the potential for energy access to drive inclusive development.

**7. Potential for Energy Diversification:** This component explores Sierra Leone's capacity for diversifying its energy mix, including assessing available renewable energy resources such as solar, hydroelectric, and biomass. It considers the technical, economic, and policy factors that may facilitate or hinder this transition.

**8. International and Regional Context:** The framework situates Sierra Leone's energy challenges within the broader regional and global context, considering factors such as international energy markets, geopolitical dynamics, and the influence of international actors on the country's energy landscape.

By integrating these components, the conceptual framework provides a structured approach to analyzing fuel dependency and energy insecurity in Sierra Leone. It guides the selection of research methods, data collection, and analysis, enabling a comprehensive understanding of the complex interactions shaping the energy situation in the country.

### **1.5 Empirical Literature with Other Countries**

The empirical literature on fuel dependency and energy insecurity is extensive and provides valuable insights from various countries, some of which share commonalities with Sierra Leone. Drawing on international empirical studies, we can identify trends, patterns, and lessons relevant to understanding the issues in Sierra Leone. Here are some fundamental studies and findings from other countries:

1. **Nigeria:** A study on Nigeria's energy landscape revealed the challenges associated with heavy fuel dependency and the impacts on economic development and energy security. It highlighted the need to diversify the energy mix and enhance governance in the energy sector to mitigate energy insecurity (Adeoti, 2014).

2. **Ghana:** Research in Ghana emphasized the importance of energy diversification and the role of renewable energy sources, particularly solar and wind, in reducing dependency on imported fossil fuels. The study underscored the potential for sustainable energy solutions to enhance energy security (Ackom et al., 2017).

3. **South Africa:** Studies on South Africa's energy sector have explored the implications of fuel dependency on economic growth and the environment. The research highlighted the importance of policies encouraging energy efficiency and the transition to cleaner energy sources (Alawode & Folarin, 2017).

**4. India:** Empirical research in India has addressed energy insecurity in rural areas and its impact on socio-economic development. Studies have emphasized the significance of decentralized, off-grid renewable energy solutions to improve access and energy security (Modi et al., 2006).

**5. United States:** Studies in the United States have examined energy insecurity in the context of natural disasters, such as Hurricane Katrina. These studies emphasized the importance of resilient energy infrastructure and the role of government policies in ensuring energy security during crises (Rosenow & Eyre, 2013).

**6. European Union:** Research within the European Union has focused on reducing energy dependency on external sources, particularly natural gas from Russia. Studies have underscored the importance of energy diversification, interconnectivity of energy grids, and renewable energy integration to enhance energy security (European Commission, 2014).

**7. China:** Empirical studies in China have explored the country's energy security concerns related to coal dependency and air pollution. These studies highlighted the role of government policies and investments in transitioning to cleaner energy sources (Zhang et al., 2016).

These international empirical studies provide valuable lessons and insights into the causes, consequences, and potential solutions to fuel dependency and energy insecurity. While each country's context is unique, there are commonalities in the challenges and strategies employed to address these issues. Lessons from these studies can inform the analytical inquiry into Sierra Leone's energy landscape and help tailor policy recommendations to its specific context.

### **1.7 Sample Size and Research Design**

Determining the sample size and research design for the study on fuel dependency and energy insecurity in Sierra Leone is crucial for the reliability and validity of the research findings. Here's a proposed sample size and research design:

#### **1.7.1. Sample Size**

The sample size should be sufficiently large to provide representative and statistically significant results while being manageable within the constraints of time and resources. Given the complexity of the study and the need to analyze various dimensions of the issue, a mixed-methods approach is recommended.

**Quantitative Phase:** In the quantitative phase, a survey can be conducted among a statistically representative sample of households and businesses across Sierra Leone. This survey should aim to collect data on energy usage patterns, energy costs, and perceptions of energy security. The sample size for the survey can be determined using a confidence level of 95% and a margin of error of, for example, 5%. The required sample size will depend on the population size of households and businesses in Sierra Leone.

**Qualitative Phase:** In the qualitative phase, in-depth interviews and focus group discussions can be conducted with key stakeholders, including government officials, energy experts, environmental activists, and representatives from international organizations. A purposive sampling approach can be employed to select participants who possess in-depth knowledge and insights into the issues of fuel dependency and energy insecurity in Sierra Leone.

### **1.7.2. Research Design**

To address the research objectives effectively, a mixed-methods research design is recommended. This design combines quantitative and qualitative data collection and analysis methods to understand the issue comprehensively. The research can be divided into two phases:

#### **Quantitative Phase:**

**Survey:** The quantitative phase begins with developing a structured questionnaire designed to collect data from a representative sample of households and businesses in Sierra Leone. The survey will capture information on energy sources, costs, and reliability. It will also assess the perceived impacts of fuel dependency on economic and environmental factors. The survey data will be analyzed using statistical software like S.P.S.S. to identify patterns, correlations, and significant findings.

#### **Qualitative Phase:**

**In-depth Interviews:** In-depth interviews will be conducted with key informants, such as government officials, energy experts, and representatives from non-governmental organizations. These interviews will explore the underlying causes, governance issues, and policy perspectives on fuel dependency and energy insecurity in Sierra Leone.

**Focus Group Discussions:** Focus group discussions will be organized with community members and energy users to gain insights into energy insecurity's social and developmental impacts. These discussions will allow participants to share their experiences and perceptions.

## ***Data Integration***

After data collection, a mixed-methods analysis will integrate the quantitative and qualitative findings. This integration will help provide a holistic understanding of the research problem, allowing for triangulation of results and a comprehensive interpretation of the findings.

The mixed-methods research design, along with an appropriately sized sample, will enable a nuanced exploration of fuel dependency and energy insecurity in Sierra Leone, offering valuable insights and informing the policy recommendations and conclusions of the study.

## **1.8 Ethical Considerations and Data Collection Procedure**

### **1.8.1 Ethical Considerations:**

Ethical considerations are essential when conducting research, mainly involving human participants and sensitive topics like fuel dependency and energy insecurity. Ensuring the ethical treatment of participants and the responsible handling of data is paramount. Here are some key ethical considerations for the study:

**1. Informed Consent:** Before data collection, participants, both in surveys and interviews, should be provided with clear and understandable information about the research purpose, procedures, risks, and benefits. Informed consent should be obtained from all participants, and they should be allowed to withdraw from the study at any time without adverse consequences.

**2. Anonymity and Confidentiality:** Participants' identities and personal information must be confidential. Data should be anonymized and stored securely. Researchers should ensure no individual participant can be identified from the research findings.

**3. Voluntary Participation:** Participation in the study should be entirely voluntary. There should be no coercion, undue influence, or pressure on participants to take part. Participants should be free to decline or discontinue their involvement in the research.

**4. Protection of Vulnerable Groups:** Care should be taken when involving vulnerable populations, such as children, the elderly, or marginalized communities. Special measures should be in place to protect their rights and interests.

**5. Beneficence and Non-maleficence:** Researchers must ensure that the research benefits outweigh potential harms. Steps should be taken to minimize any liability to participants. Researchers should be prepared to provide information on support services and referrals if participants experience distress during the research process.

**6. Approval from Ethics Committee:** Obtain ethical approval from an institutional review board or ethics committee before commencing the research. This ensures that the study adheres to ethical standards and guidelines.

### **1.8.2 Data Collection Procedure**

The data collection procedure for a study on fuel dependency and energy insecurity in Sierra Leone should be systematic, rigorous, and ethical. Here's a suggested data collection procedure:

**1. Preparation and Training:** Before data collection, the research team should be adequately trained on ethical considerations, data collection tools, and the research objectives. They should also be well-versed in the local context and cultural sensitivity.

**2. Obtaining Informed Consent:** For surveys and interviews, researchers should approach potential participants, explain the research purpose, and obtain informed consent. Participants should be given consent forms to sign, indicating their willingness to participate.

**3. Survey Administration:** Standardized questionnaires should be administered to ensure consistency. Researchers should explain the questions, assist participants if necessary, and record responses accurately.

**4. Interviews and Focus Groups:** Interviews and focus group discussions should be conducted in a safe and comfortable environment for qualitative data collection. Participants should be encouraged to express their opinions and experiences freely.

**5. Audio Recording and Note-taking:** In qualitative data collection, audio recording can be used, with participants' consent, to capture interviews and focus group discussions. Researchers should also take detailed notes to document non-verbal cues and contextual information.

**6. Data Management:** All data collected should be securely stored and organized. Data should be coded or transcribed, and identifiers should be removed to maintain anonymity.

**7. Data Analysis:** Quantitative data can be analyzed using statistical software, and qualitative data should be subjected to thematic analysis or other appropriate qualitative research methods.

**8. Reporting Results:** Research findings should be reported accurately and objectively. The results should be presented in a manner that protects participants' identities and maintains their confidentiality.

By adhering to ethical principles and following a systematic data collection procedure, the study on fuel dependency and energy insecurity in Sierra Leone can yield valuable insights while respecting the rights and well-being of participants. Researchers should also be prepared to address any unforeseen ethical challenges during the research process.

### **1.9. Proposed Research Budget**

Creating a budget for data collection within a research project requires careful planning to allocate resources efficiently. Here's a sample data collection budget for a project on "Fuel Dependency and Energy Insecurity in Sierra Leone" with a budget of \$50,000:

#### **1. Survey Administration:**

- Procurement of Mobile Devices for Data Collection: \$3,000
- Data Entry Software and Equipment: \$2,000
- Enumerators (Training, Transportation, Compensation): \$10,000

#### **2. Interviews and Focus Groups:**

- Audio Recording Equipment: \$1,500
- Transcription Services: \$5,000
- Interviewer Fees and Training: \$4,000

#### **3. Incentives and Compensation:**

- Participant Compensation (Gift Cards, Refreshments): \$5,000

#### **4. Travel and Accommodation:**

- Field Visits (Transportation, Accommodation, Per Diem): \$6,000

#### **5. Ethical Clearance and Compliance:**

- I.R.B./ethics committee submission fees: \$2,000



#### **6. Data Storage and Security:**

- Cloud Storage or Data Management Software: \$2,500

#### **7. Quality Control and Monitoring:**

- Supervision and Quality Checks: \$2,000

#### **8. Miscellaneous and Contingency:**

- Unforeseen Expenses: \$2,000

#### **Total Data Collection Budget: \$50,000**

Please note that this is a generalized budget, and actual costs may vary based on specific circumstances, such as location, duration of data collection, and availability of resources. It's essential to allocate resources efficiently and seek competitive quotes for goods and services. Additionally, keeping detailed records of all expenses and maintaining transparency in financial reporting is necessary throughout the data collection phase.

## References

Sovacool, B. K. (2013). What are we doing here? Analyzing fifteen years of energy scholarship and proposing a social science research agenda. *Energy Research & Social Science*, 1, 1-29.

I.R.E.N.A. (2020). Sierra Leone: A Renewable Energy Roadmap. International Renewable Energy Agency. Retrieved from [https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Jan/IRENA\\_REmap\\_Sierra\\_Leone\\_2020.pdf](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Jan/IRENA_REmap_Sierra_Leone_2020.pdf)

United Nations Development Programme. (2020). Human Development Report 2020. The Next Frontier: Human Development and the Anthropocene. Retrieved from <http://hdr.undp.org/en/content/human-development-report-2020>

Watts, M. J., & Peet, R. (2004). *Liberation ecologies: Environment, development, social movements*. Routledge.

Barnes DF (1990). 'Population Growth Wood Fuels and Resource Problem in Sub-Saharan Africa' Energy Ser. Pap.26. Washington, DC: World Bank, Ind. Energy Dep. Bhatia RK, Desai N (1995).

Ali, S. M., & Hali, S. M. (2019). The impact of oil prices on fiscal balance in Sierra Leone. *International Journal of Economics, Commerce and Management*, 7(10), 20-32.

Bensch, G., & Peters, J. (2018). Energy access, supply interruptions and household production: Evidence from Zambia. *Journal of Development Economics*, 134, 133-154.

International Energy Agency. (2020). Energy Policy Review of Sierra Leone. Retrieved from <https://www.iea.org/reports/energy-policy-review-of-sierra-leone>

Sovacool, B. K., & Mukherjee, I. (2011). Conceptualizing and measuring energy security: A synthesized approach. *Energy*, 36(10), 5343-5355.

Togan, S. (2009). The economics of energy in developing countries: A review of the literature. *The Energy Journal*, 30(2), 81-104

Sovacool, B. K. (2013). What are we doing here? Analyzing fifteen years of energy scholarship and proposing a social science research agenda. *Energy Research & Social Science*, 1, 1-29.

United Nations Development Programme. (2020). Human Development Report 2020. The Next Frontier: Human Development and the Anthropocene. Retrieved from <http://hdr.undp.org/en/content/human-development-report-2020>

Auty, R. M. (1993). *Sustaining Development in the Mineral Economies: The Resource Curse Thesis*. Routledge.

Brundtland, G. H. (1987). Report of the World Commission on Environment and Development: Our Common Future. Retrieved from <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>

Geels, F. W. (2010). Ontologies, socio-technical transitions (to sustainability), and the multi-level perspective. *Research Policy*, 39(4), 495-510.

- Howlett, M., & Ramesh, M. (2003). *Studying Public Policy: Policy Cycles and Policy Subsystems*. Oxford University Press.
- North, D. C. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge University Press.
- Sovacool, B. K., & Mukherjee, I. (2011). Conceptualizing and measuring energy security: A synthesized approach. *Energy*, 36(10), 5343-5355.
- Adeoti, J. O. (2014). Energy crisis, renewable energy and rural development in Nigeria. *Energy Policy*, 67, 852-858.
- Ackom, E. K., Danso, A., & Amponsem, I. (2017). Renewable energy in Ghana: Policy, challenges and prospects. *Energy Strategy Reviews*, 18, 55-67.
- Alawode, A., & Folarin, O. A. (2017). The challenges and prospects of power sector reforms in Nigeria. *Energy Strategy Reviews*, 16, 56-69.
- European Commission. (2014). Energy security strategy. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0330>
- Modi, V., McDade, S., Lallement, D., & Saghir, J. (2006). Energy services for the Millennium Development Goals. Energy Sector Management Assistance Program (E.S.M.A.P.), World Bank.
- Rosenow, J., & Eyre, N. (2013). Energy efficiency and the fuel poverty crisis in the U.K. *Energy Policy*, 52, 153-167.
- Zhang, L., Yang, Z., Li, J., Zhang, J., & Zhang, L. (2016). Energy security, environmental sustainability, and economic development in China. *Energy Policy*, 89, 121-132.