

Accelerating the Transition to a Renewable Energy Powered Grid in Nigeria.

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Introduction

Nigeria is plagued with electricity challenges which have had devastating economic implications with an annual loss of \$26.2bn (World Bank 2020b) coupled with climate consequences, thereby stalling sustainable development. Currently, electricity is mainly generated from fossil fuels and supplied through the grid. However, just around 40% of the Nigerian population are connected to the national grid and are faced with incessant interruptions and blackouts. Consequently, the nation has the largest energy access deficit in the world as 85 million Nigerians do not have access to grid electricity (World Bank 2020b).

Renewable energy (RE) has been identified to address the challenges of energy poverty and growing demand in the country. Therefore, the government created various strategies, policies, programmes, and regulations to encourage and facilitate the transition. Though Nigeria possesses abundant renewable energy sources, including solar and wind power, this to date have largely remained untapped.

Aim

The study aims to recommend to policy-makers and planners solutions to accelerate the transition to a renewable-energy powered grid in Nigeria.

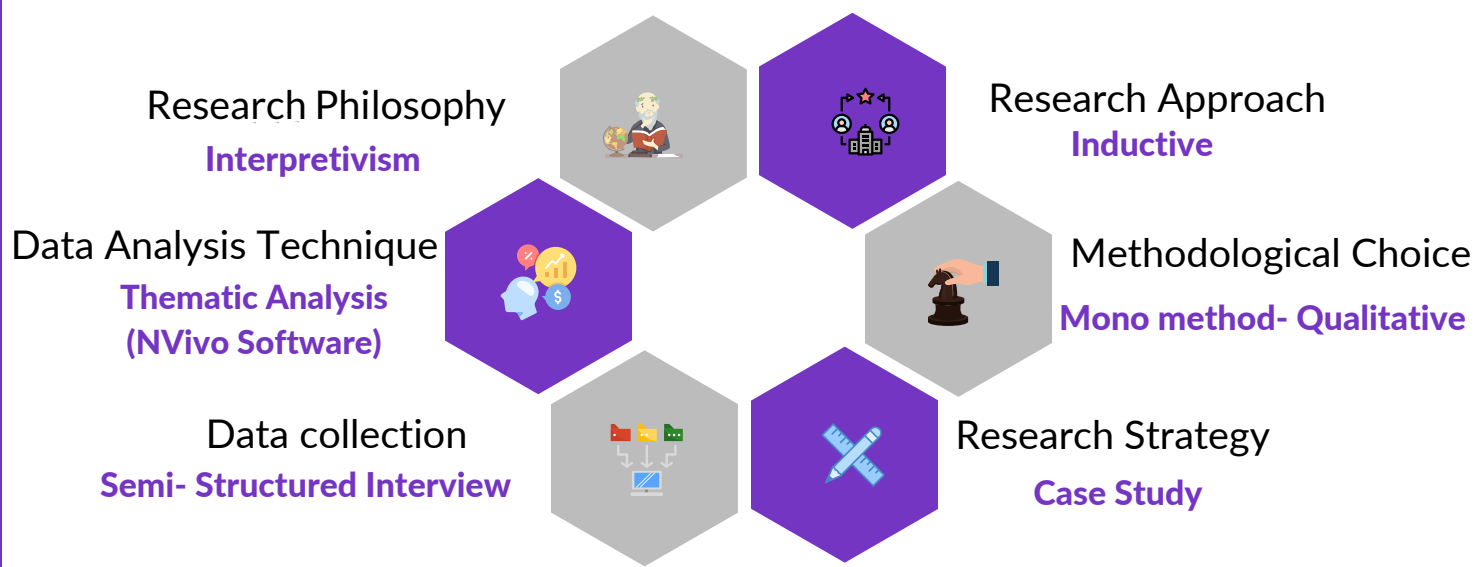
Objectives

To Investigate the inhibitors to Grid RE development in Nigeria.

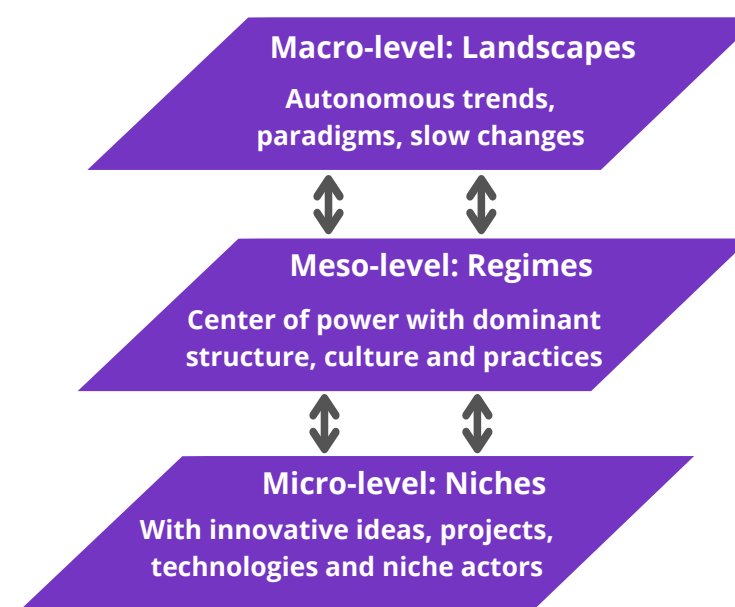
To evaluate the drivers and enablers of RE on the Nigerian electricity grid.

Research Method

Thirty-one experts, executives, and policy-makers in Nigeria's energy and non-energy industry were interviewed.



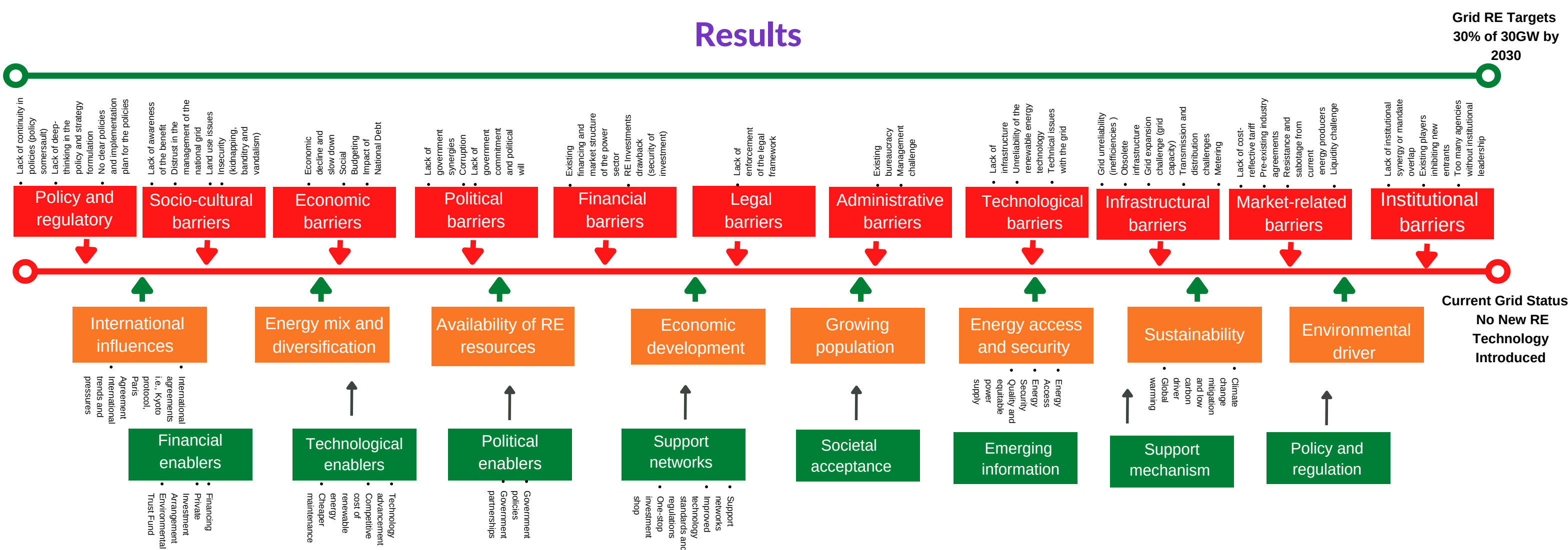
Theoretical framework



MLP is an analytical tool for sustainable transitions and deals with socio-technical complexities. Furthermore, it is predicated on defining transition problems and impediments by understanding the interaction of three core societal layers that may trigger the transition, including actors, environments and innovations (Geels and Schot 2007, Geels 2011, Ruggiero et al. 2015, Geels 2020).

Multi-level Perspective (MLP) Framework (adapted from Geels 2002)

Results



Conclusion

The key findings from this study revealed several multifaceted challenges to renewable energy development spanning from institutional and governance challenges, economic and financial issues, lack of legal framework, infrastructural, technological such as intermittency issues to political barriers. However, experts noted that the availability of renewable energy resources, current economic development, the move for energy diversification, international influence, and increasing societal acceptance contribute to the drivers for the transition. The study recommends establishing a specific institution to address the implementation of on-grid renewable energy. Furthermore, there is a need to provide financing and investment protection to encourage potential investors to penetrate the market. This study identified best practices such as the introduction of smart grid systems and provides recommendations to policy-makers for the successful implementation of on-grid renewable energies that can be replicated by other countries in sub-Saharan Africa with similar energy systems to Nigeria.

Area of Further Research

- Assess the governance and planning process for Grid RE development in Nigeria.
- Investigate the role of accountability and transparency in fostering Grid RE in Nigeria.

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For more information

