

Investigating the strategic planning process and governance to promote grid-based renewable energy development in Nigeria.

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Investigating the strategic planning process and governance to promote grid-based renewable energy development in Nigeria

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ABSTRACT

This study investigates the renewable energy planning process and governance for implementing grid-based renewable energy in Nigeria. The presentation assesses the barriers, enablers, and drivers for the energy transition. Despite the creation of policies and strategies to drive the transition to renewable energy (solar and wind) since 2014, the research found that there have yet to be any new renewable energy technologies deployed to the grid. As a theoretical lens, the presentation uses the multi-level perspective to examine this policy failure through semi-structured interviews with thirty-one industry and non-industry experts. The research findings show that though there are notable drivers and enablers to accelerate the transition, the barriers to the uptake of renewable energy on the Nigerian grid are multi-faceted and reinforce the existing regime systems dominated by fossil fuel energy sources. Hence, for there to be a transition to a low-carbon electricity grid in Nigeria, renewable energy needs to be in protected spaces and supported by the government and other key stakeholders.

Video to this article can be found online at <https://doi.org/10.1016/j.sctalk.2022.100116>.

Figures and tables

Table 1

Illustration of categorisation and number of energy and non-energy actors interviewed. The participants were categorised as: public authorities; a research and development institute; an association; climate change movement actors; an NGO; universities; generating, distribution and Transmission company; an investment company; independent researchers; and renewable energy businesses. Respondents are anonymous and assigned codes from IR1 to IR31.

Energy and Non-energy Industry Actors		Number of Participants	Interviewee Codes
Public authorities	Regulatory	2	IR11, IR16
	Polymaking	6	IR08, IR15, IR17, IR22, IR25, IR27
	Government ministry and parastatal	4	IR09, IR20, IR23, IR31
Research and development institute		1	IR29
Association		1	IR30
Climate change movement		2	IR24, IR28
NGO		1	IR18
Universities		2	IR07, IR02
Electricity generation companies		2	IR01, IR14
Electricity distribution companies		3	IR05, IR06, IR03
Electricity transmission company		2	IR10, IR19
Renewable energy investment company		1	IR26
Independent researchers		2	IR12, IR21
Renewable energy businesses		2	IR04, IR13

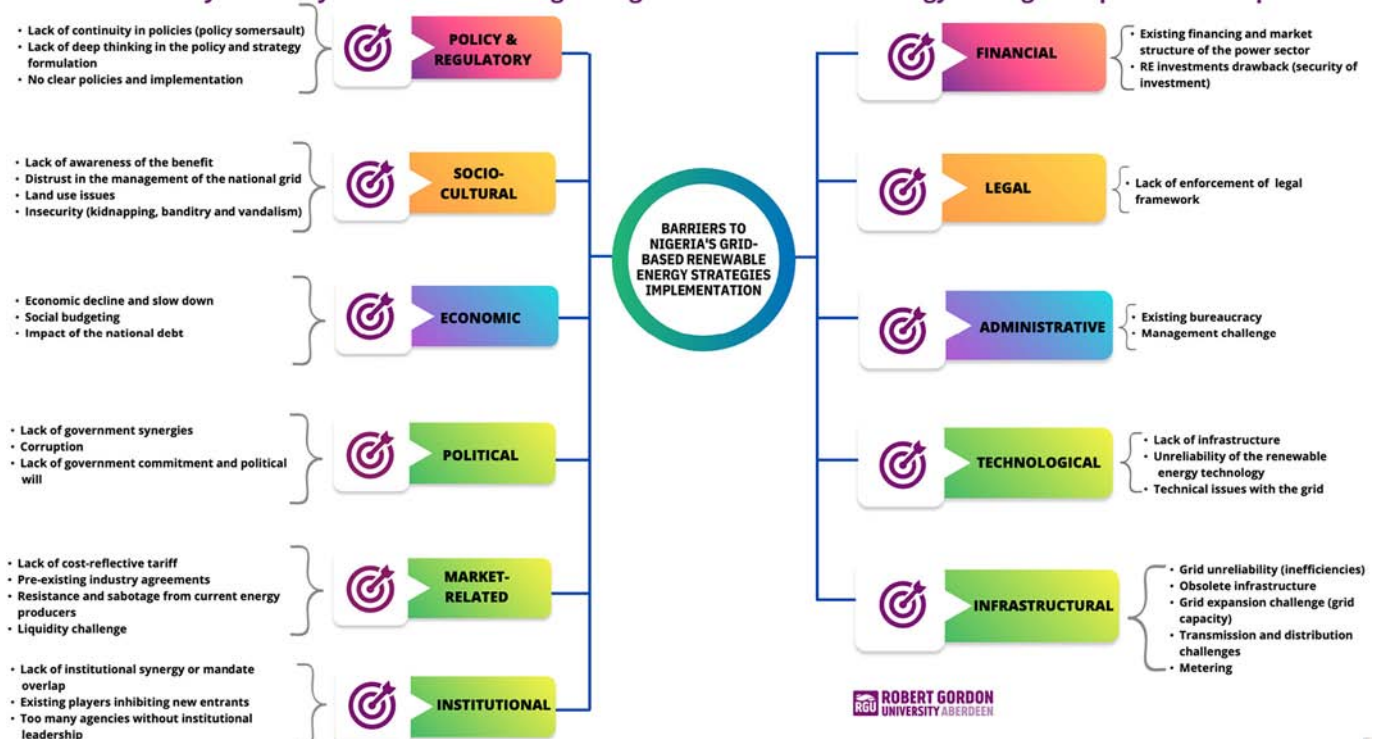
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Table 2

Illustration of the data analysis process using the Braun and Clarke's 6-step thematic analysis process.

Data Analysis				
Phase 1: Familiarising yourself with the data	Phase 2: Generating initial codes 2 areas per interview guide (182 codes generated)	Phase 3: Searching for themes (112 codes were collapsed and some made redundant)	Phase 4: Reviewing themes Phase 5: Defining and naming themes	Phase 6: Producing report
Raw Interview Data	Barriers of renewable energy development	17 barriers of renewable energy development collapsed into 11	Technical/technological Policy and regulatory Institutional Infrastructural Socio-cultural Economic Political Market-related Legal Financial Administrative	Barriers of grid renewable energy implementation
	Drivers and enablers for the development of renewable energy	34 drivers collapsed to 9 drivers and 7 enablers of grid renewable energy implementation	Energy access and security International influences Growing energy demand Environmental Energy mix and diversification Availability of RE resources Economic development Growing population Sustainability	Drivers of grid renewable energy implementation
		7 enablers of grid renewable energy implementation categorised	Financial Technological Emerging information Political Support network Societal acceptance All support mechanism	Enablers of grid renewable energy implementation

Results 1: Identify and analyse the barriers to Nigeria's grid-based renewable energy strategies implementation process.**Fig. 1.** Illustration of the barriers to Nigeria's grid-based renewable energy strategies implementation process identified from the interviews conducted ($n = 31$).

Results 2: To critically evaluate the drivers for the energy transition in Nigeria.

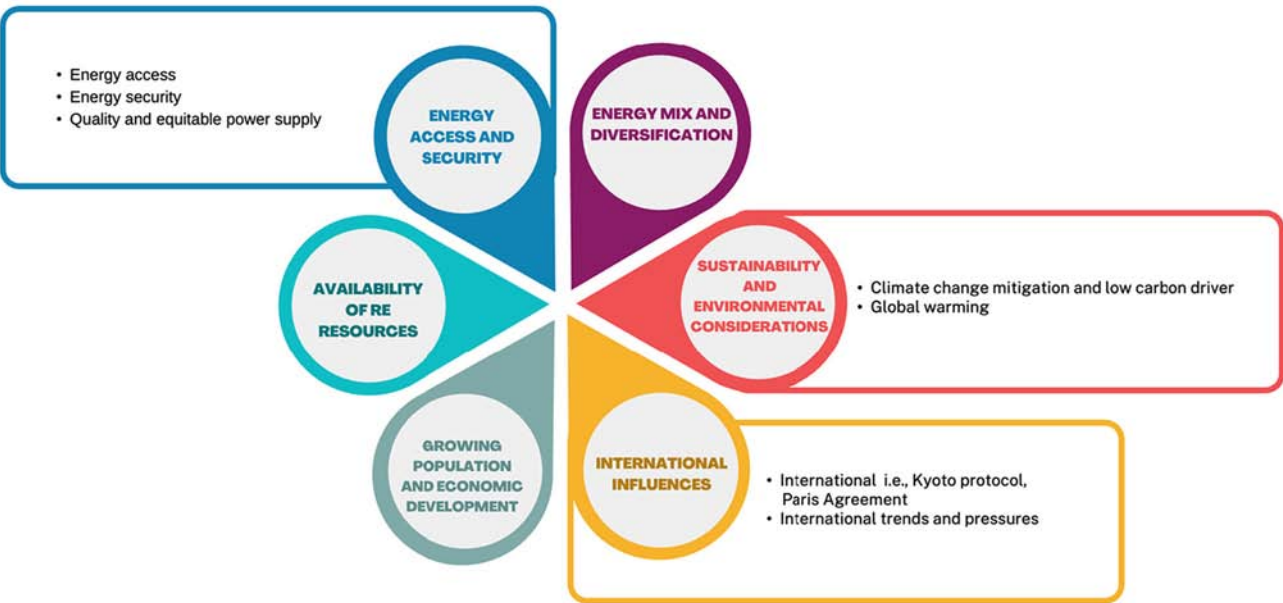


Fig. 2. Illustration of the drivers for the energy transition in Nigeria from the interviews conducted ($n = 31$).

Results 3: To identify and assess the impact of enablers for adopting renewable energy on the grid in Nigeria.

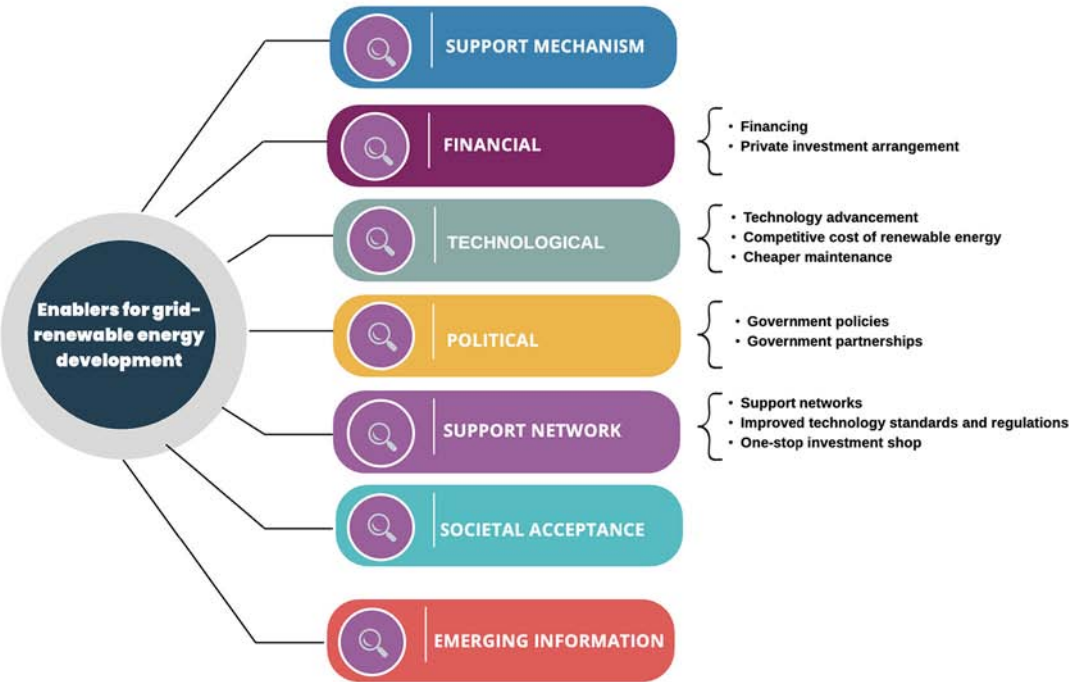


Fig. 3. Illustration of the enablers for adopting renewable energy on the grid in Nigeria identified from the interviews conducted ($n = 31$).

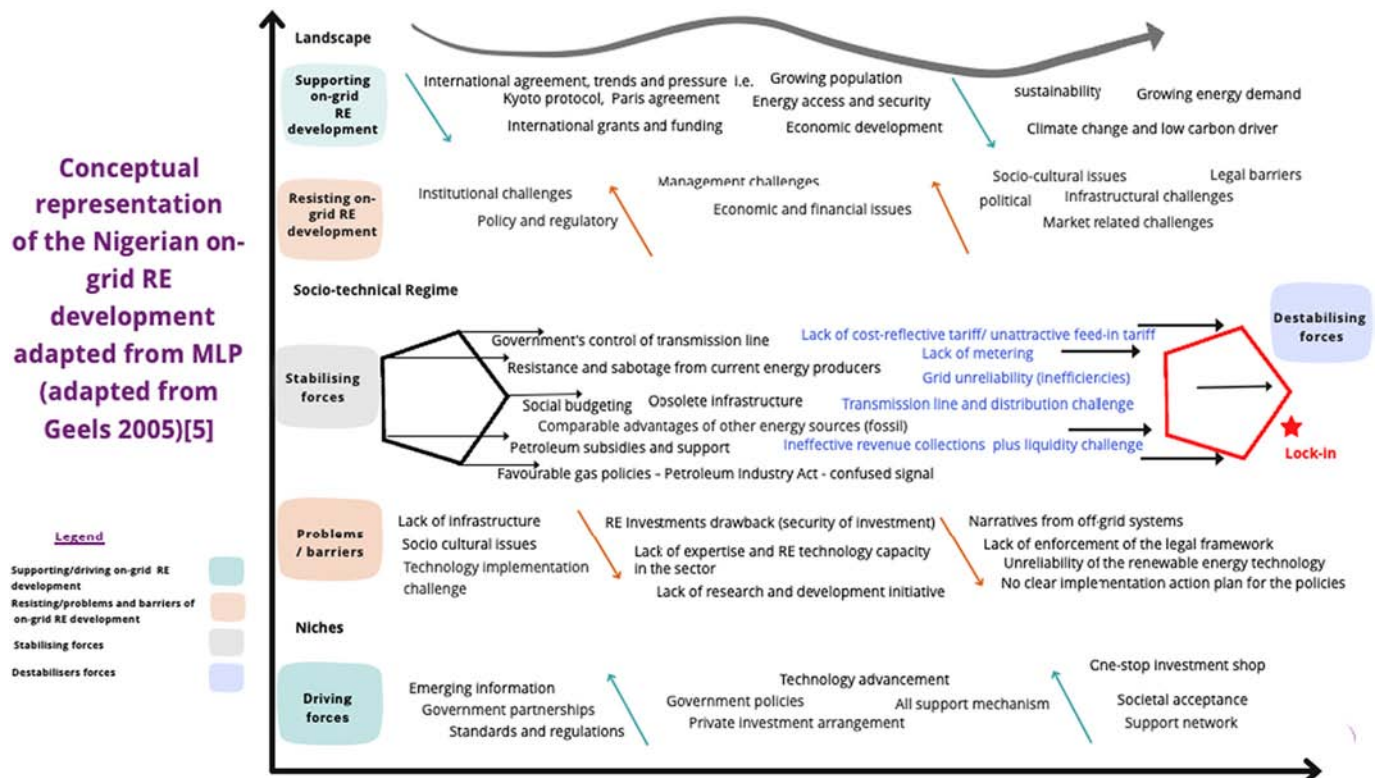


Fig. 4. The conceptualisation of multi-level perspective framework in the Nigerian on-grid renewable energy sector.

CRedit authorship contribution statement

Racheal Adedokun: Conceptualization, Methodology, Data curation, Writing – original draft, Visualization, Investigation, Supervision, Validation, Writing – review & editing. **Peter Strachan:** Conceptualization, Methodology, Data curation, Writing – original draft, Visualization, Investigation, Supervision, Validation, Writing – review & editing. **Anita Singh:** Conceptualization, Methodology, Data curation, Writing – original draft, Visualization, Investigation, Supervision, Validation, Writing – review & editing.

Data availability

The authors do not have permission to share data.

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Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Further reading

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Professor Peter Strachan has worked at the Robert Gordon University for nearly 30 years. His research interests cover the theoretical and public policy aspects of energy transition. In supporting this work, Professor Strachan has received funding from the United Kingdom (UK) Economic and Social Research Council (ESRC) and Innovate UK. His published work focuses on sub-national government and pathways to sustainable energy, corporate and community ownership models, and the performance of UK offshore windfarms. Professor Strachan's published outputs have appeared in prestigious peer reviewed

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