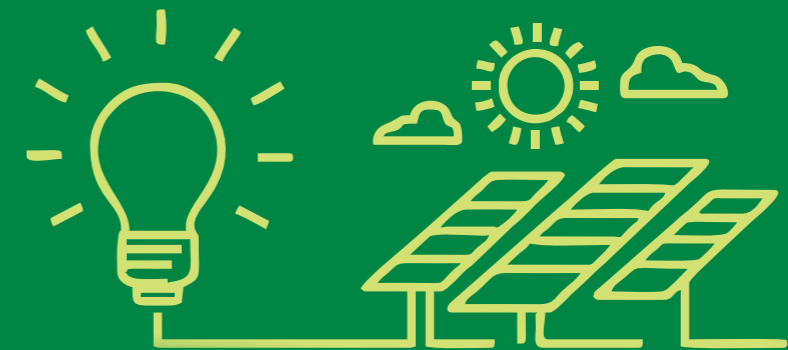




**ECO STEWARD**  
AND HUMANITARIAN FOUNDATION

**POLICY BRIEF**

# ASSESSMENT OF RENEWABLE ENERGY IN NIGERIA



POWERED BY  
LIFT HUMANITY FOUNDATION

SUPPORTED BY





NOTE

# Is Nigeria Ready for Renewable Energy Future?

## Assessment of Renewable Energy Governance in Nigeria

Robert Onyeneke<sup>a</sup>, and Pius Agaji Oko<sup>b</sup>



### KEY MESSAGES

- National and State Institutions, ministries, departments and agencies responsible for energy projects lack capacity (including inadequate infrastructure, financial access and shortage of skilled labor) to deliver on renewable energy development.
- Lacks legislation on grid strengthening and large-scale renewable energy initiatives, as well as guide and regulation for power generation, transmission, and distribution of energy hinder its efficacy.
- Institutional challenges such as unclear role differentiation are a key barrier to effective renewable energy program in Nigeria, often leading to inter-sectoral conflicts and competition over renewable energy funds.
- Disharmony between Renewable Energy initiatives funded by state and non-state actors can hinder the achievement of Renewable projects financing in Nigeria.
- However, Nigeria's commitment to international agreements (NDCs) and homegrown commitments (LT-LEDS) shows interest in Renewable Energy development and sustainable environment.

### OVERVIEW

The importance of renewable energy in Nigeria cannot be overstated. As a fast-developing nation, Nigeria is confronted with rising energy demands, both for its rapidly expanding population and economy. Renewable energy sources, such as solar, wind, and hydropower, provide a cost-effective and sustainable solution to these energy needs. In addition, renewable energy can help lessen Nigeria's reliance on finite and expensive fossil resources. However, effective governance is necessary for successfully integrating renewable energy into Nigeria's energy mix. Governance contexts, such as policies, regulations, and institutions, significantly impact the development of renewable energy in a country. These governance contexts can either support or hinder the development of renewable energy. Thus, it is critical to assess Nigeria's current state of renewable energy governance to identify potential challenges and improvement opportunities. Given the significance of renewable energy for Nigeria's economic and social growth and its ability to alleviate Nigeria's energy concerns, it is vital to perform a thorough assessment of the context and supportiveness of renewable energy

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governance in Nigeria. This study aimed to assess the supportiveness of renewable energy governance in Nigeria. This study shed light on the current state of renewable energy governance in Nigeria and informed the formulation of effective policies and strategies to encourage the expansion of renewable energy in the country. This policy brief discusses an assessment of the renewable energy options were assessed on capacities, governance, policies and regulations, finance models, stakeholder linkages and technology adaptation, based on critical criteria such as cost, maximum capacity, environmental impact, job creation, and security. The outcome of this assessment reveal that energy efficiency and biomass are presently regarded as the most economically efficient renewable energy choices in Nigeria. Conversely, solar, geothermal, wind, nuclear, and hydroelectric options are seen as less cost-effective. Nevertheless, the survey findings imply that although energy efficiency and biomass may offer affordability advantages in terms of initial investment, maintenance, operational expenses, and overall life cycle costs, it would also be prudent to explore the potential merits of solar, geothermal, and wind alternatives.

## 1. INTRODUCTION

As a country rich in natural resources, Nigeria has the potential to become a leader in the renewable energy sector (Chanchangi et al., 2022; Edomah et al., 2021; Onyeneke et al., 2022). However, despite its potential, the country currently struggles with energy poverty and a lack of access to reliable electricity (Chanchangi et al., 2022; Emodi et al., 2017). Prioritizing Renewable energy development in Nigeria has the potential to alleviate these issues by providing reliable, affordable, clean and sustainable source of energy, promote sustainable development and create jobs, particularly for women and other marginalized groups (Chanchangi et al., 2022; Onyeneke et al., 2022). Governance challenges hinders the development and operation of renewable energy in Nigeria. Challenges in usability, reliability, affordability and lack of access to

renewable energy, limited financing options for projects, and lack of adequate infrastructure and technical expertise are major obstacles to the sustainable development of the sector (Chanchangi et al., 2022).

**This policy brief is based on the findings of a study which sought to critically analyse the interactions of the Renewable Governance in Nigeria on:**

- Renewable energy alternatives based on criteria such as cost, maximum capacity, environmental impact, job creation, and security
- Nigeria's renewable energy governance context and its sub-components; and
- Governance context's supportiveness for renewable energy development using the gap assessment tool to ascertain supportiveness or restrictiveness to renewable energy development

## 2. METHODOLOGY

The governance analytical framework used is the International Renewable Energy Agency (IRENA) Enabling Components for Off-Grid Renewable Energy Solutions (ECOGRES) and the Governance Assessment Tool (GAT) (for an in-depth discussion, see Nnafie, 2021).

### 2.1 Enabling Components for Off-Grid Renewable Energy Solutions (ECOGRES)

Accelerating progress toward the SDG 7 goal of ensuring access to affordable, reliable, sustainable, and modern energy for all requires concerted action across multiple enabling environments or governance components (IRENA, 2019). According to IRENA (2019), these include policies and regulations, delivery and financing models, institutional frameworks, capacity building, technology adaptation, and multi-stakeholder -and cross-sector interlinkages (see Figure 1).

- Develop new financing models or mechanisms, stimulates investment in renewable energy through incentives, privatization and or establishing partnerships or collaborations with private sector entities to help de-risk investments.
- The adoption of “energy access champions” in all key sectors of Nigeria to ensure that the subsequent reviews of these policies incorporate key elements of renewable energy development. These “energy access champions” are individuals who may already be working in the various sectors and are given the responsibility to champion renewable energy issues in the sectoral policies. To be effective, the capacities of these champions need to be strengthened through appropriate training by renewable energy experts.
- Implement capacity-building and facilitate training programs to build a skilled workforce in the renewable energy sector across states in Nigeria.
- Clearly defining and creating awareness on the agreed upon sector compromises and tradeoffs by relevant state institutions and agencies mandated with integrating renewable energy development across different sectors of the economy. This clarity will help minimise conflicting agendas.
- Invest in and support mechanisms such as public-private partnerships and loan grants to facilitate research and development of new renewable energy technologies to ensure that they are appropriate and effective in their intended contexts
- Policymakers and stakeholders should consider the trade-offs between different renewable energy options and weigh the pros and cons of each option before moving forward with implementation. This will help ensure that the chosen energy source is the best fit across different sectors of the economy and goals of the country.
- Develop an integrated electricity sector framework that addresses challenges and establishes Rural Electrification Agency to increase access to electricity in rural areas

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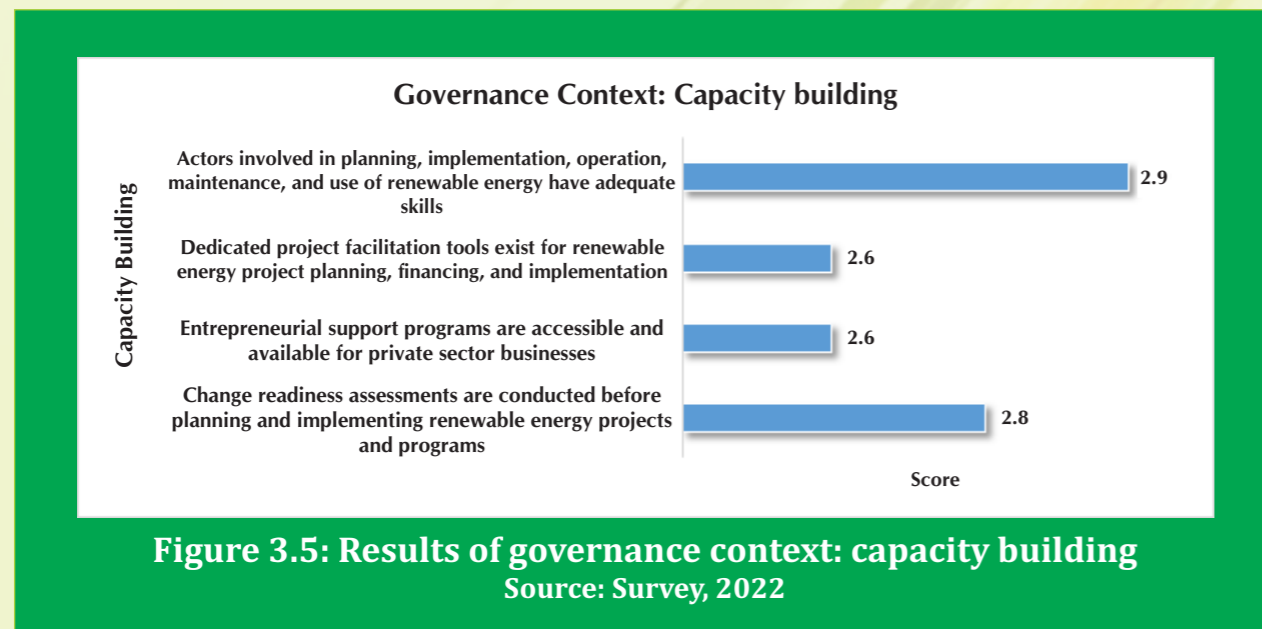
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**3.5 Capacity building:** there is a recognition of the importance of capacity-building in the renewable energy sector, but there may be areas where capacity-building efforts can be improved.



#### 4 CONCLUSION

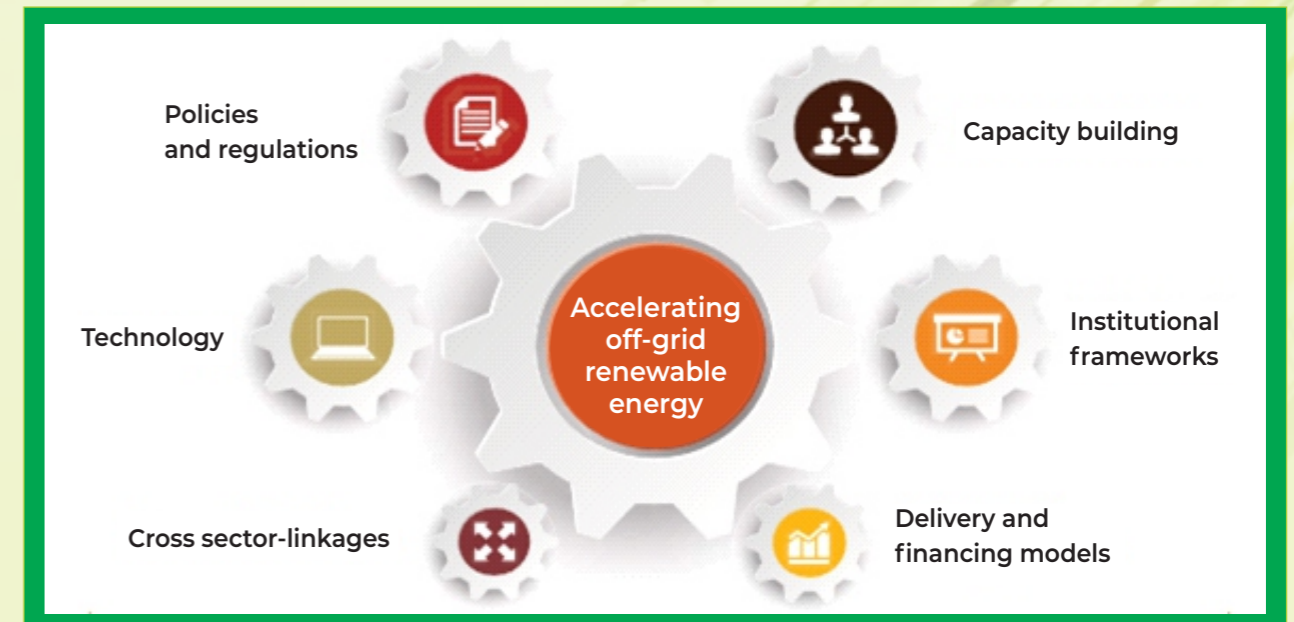
- Efficiency and biomass are currently perceived as the most cost-effective.
- Most options have a relatively low maximum capacity, except for hydroelectric.
- Respondents perceive the environmental impact of various options as moderate
- Nuclear energy is considered to have a more significant negative impact.
- The overall job creation potential of various options is moderate, with wind and geothermal having a lesser potential for job creation and economic impact.
- Solar, wind, biomass, and efficiency have a moderate to a high level of security in terms of risks, disruptions, and disasters.

#### 5. RECOMMENDATION

To overcome the challenges associated with renewable energy governance in Nigeria, the following are the suggested policy options for policymakers to act on:

- Nigeria should prioritize inclusion of multiple stakeholders such as private sector and civil society in renewable energy initiatives and programs. This inclusion will minimise the probability of leaving out vital issues and foster cooperation in addressing Renewable energy development across various levels of governance.
- Setting up effective inter-agency partnership, institutional collaborations and information-sharing platforms across different agencies with the aim of addressing energy access and promoting the development of knowledge networks issues related to climate change and foster knowledge networks.

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#### 2.2. Methods of data collection and analysis

The assessment was based on a Likert scale analysis using 5 as the cut-off (mid-point) point. Secondly, Nigeria's renewable energy governance context was analysed using the data from the interview.

Third, the governance context's characteristics were assessed. Also, using the same data, a governance assessment tool (GAT) was used to determine the supportiveness or restrictiveness of the governance contexts on renewable energy development. The framework considers five supportiveness or governance quality criteria:

1. **Extent:** are all relevant aspects of governance considered? **Options: No (score 1), To an extent (score 2), or yes (score 3)**
2. **Coherence:** Are the governance dimensions components reinforcing rather than contradicting each other? **Options: Contradicting (score 1) or Reinforcing (score 2).**
3. **Flexibility:** are multiple pathways to achieve the goals allowed or embraced, depending

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on opportunities and threats as they arise?  
Options: No (score 1), To an extent (score 2), or yes (score 3)

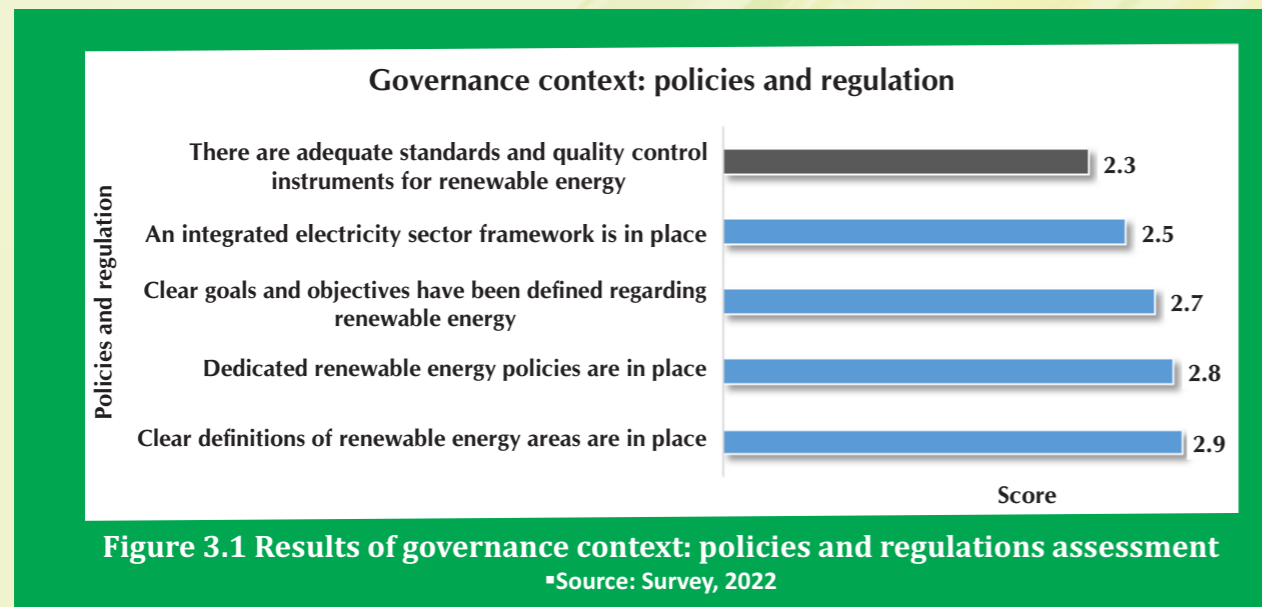
4. **Intensity:** how strongly do the regime elements push for changes in the status quo? **Options: No (score 1), To an extent (score 2), or yes (score 3)**
5. For the following question in each **Governance Context:** **"Have any of these conditions changed over time, or are they likely to change in the foreseeable future?" Options: Positive change (score 3), No change (score 2), or Negative change (score 1).**

The assessment is based on a Likert scale analysis: 2 is the cut-off point (supportive) for **Extent, Flexibility, and Intensity**. For Coherence, less than 1.5 is contradicting (or restrictive), and greater than or equal to 1.5 is reinforcing (or supportive). For Trend, less than 1 is negative (or restrictive), 1 to 2 is no change, and greater than 2 is positive (or supportive). See the results and discussion in table 3.1 to 3.5 below.



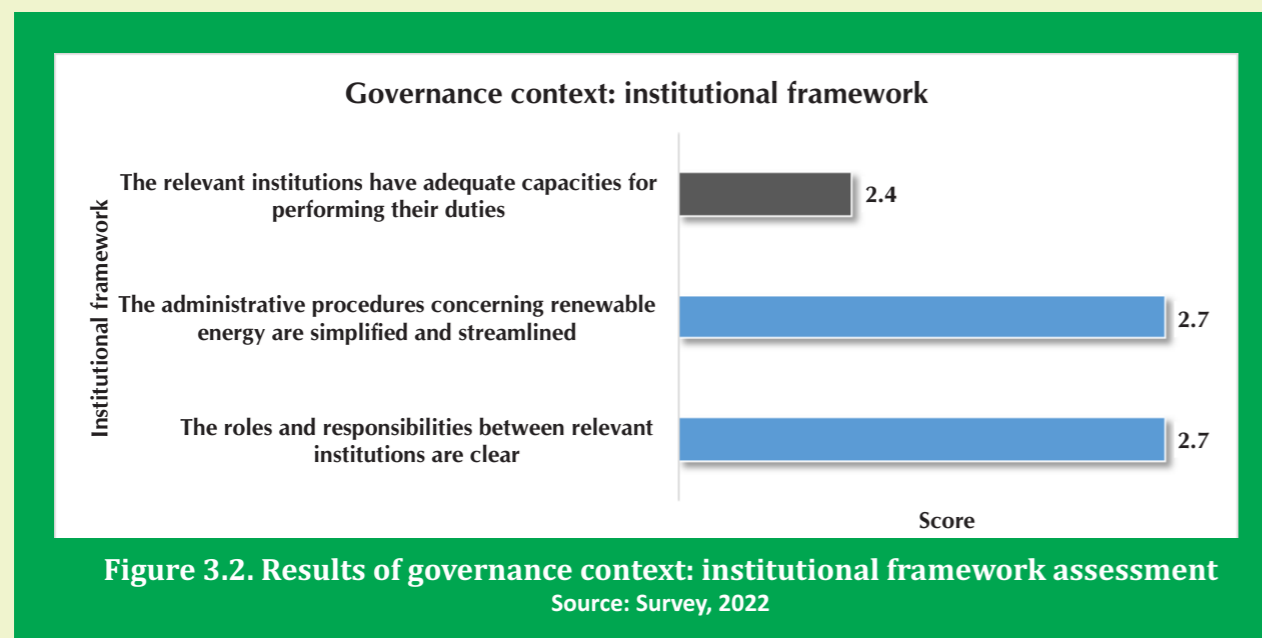
### 3. RESULTS AND DISCUSSION

**3.1 Policies and regulations:** Some areas need improvement. Specifically, there may be weaknesses in renewable energy policies and regulations, specifically regarding standards and quality control. Most respondents do not feel that there are adequate standards and quality control instruments for renewable energy.

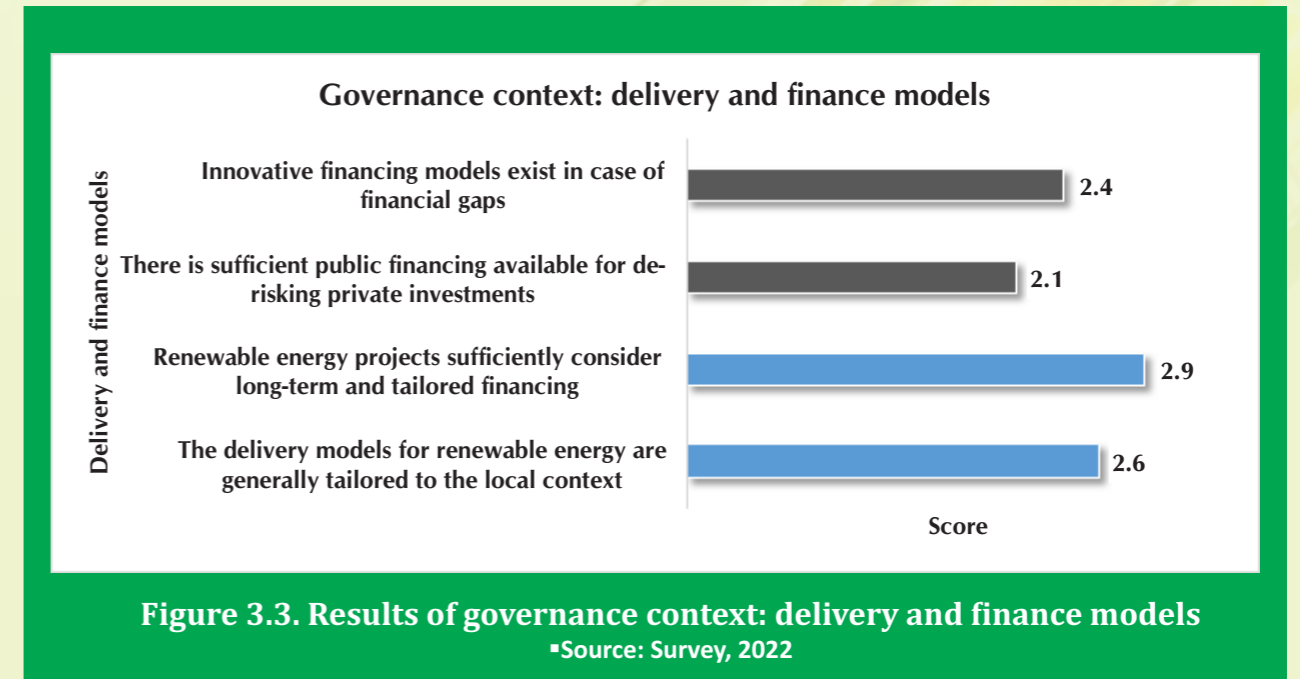


### 3.2 Institutional framework:

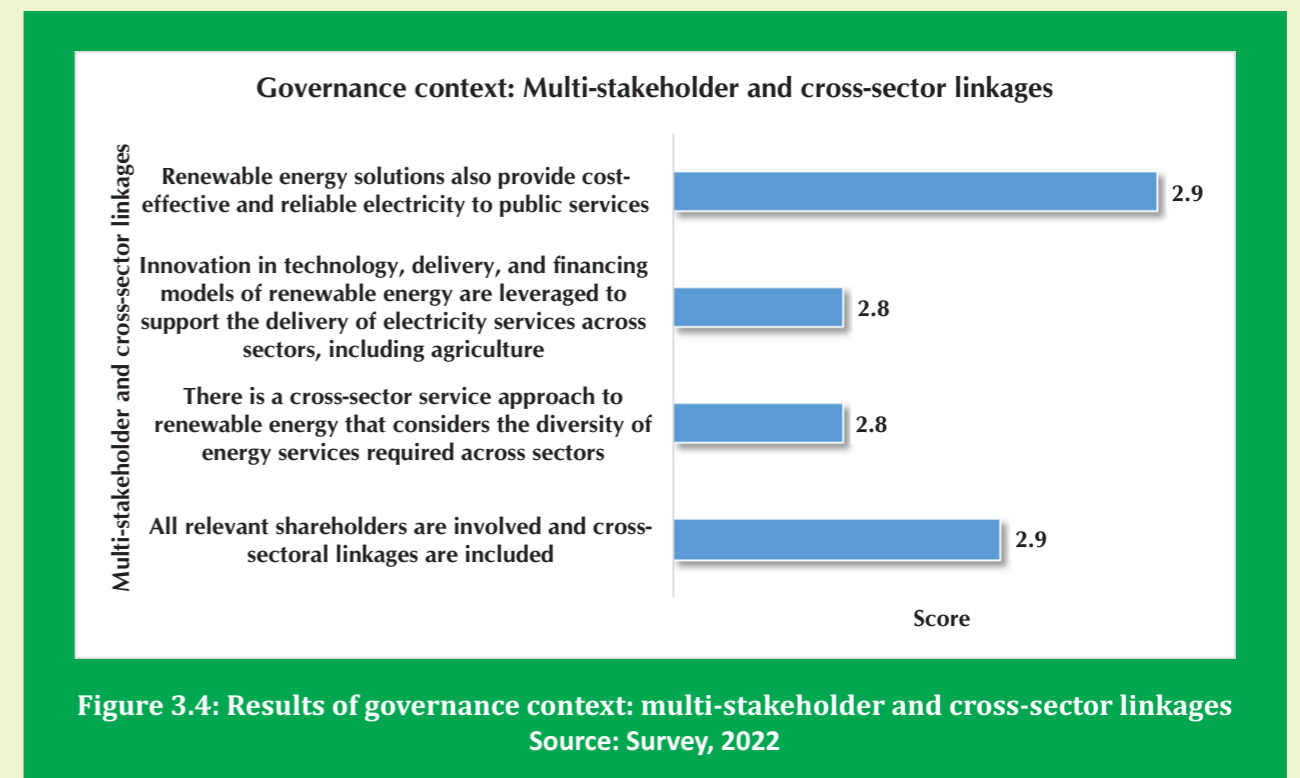
There is a need for further clarification of roles and responsibilities between relevant institutions in Nigeria's governance of renewable energy. Most respondents believe that the administrative procedures concerning renewable energy are mostly simplified and streamlined, but there is still room for improvement. Most respondents do not feel that the relevant institutions have strong capacities for performing their duties in renewable energy governance, indicating a need to



**3.3 Delivery and finance models:** some areas need improvement. Specifically, there may be weaknesses in renewable energy delivery and finance models, specifically in filling financial gaps and providing sufficient public financing to de-risk private investments.



**3.4 Multi-stakeholder and cross-sector linkages:** some areas need improvement. Specifically, there may be room for improvement in how renewable energy solutions provide cost-effective and reliable electricity to public services and how innovations in technology, delivery, and financing models of off-grid renewable energy are leveraged to support the delivery of electricity services across sectors, including agriculture.



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