A review of electricity policy and regulatory frameworks in Africa

Snapshot of the Attractiveness Dimension

28th March, 2023
UNECA HQ Addis Ababa
The attractiveness of market conditions and a market’s ability to ensure the long-term financial viability of assets is the second dimension considered by investors when evaluating a new market.
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Analysis of Regulatory Attractiveness: Generation Segment

- **Contracts regulation**
  - Average: 0
  - Min: 0
  - Max: 2.4

- **Economic regulation**
  - Average: 0.5
  - Min: 1.8
  - Max: 3

- **Incentives**
  - Average: 0
  - Min: 0.8
  - Max: 2

- **Indirect incentives**
  - Average: 0.5
  - Min: 2.1
  - Max: 3

- **Credit Enhancement**
  - Average: 0
  - Min: 1.7
  - Max: 2.5
Define Incentives to Promote Electrification & Decarbonization

15/16 countries lack comprehensive regulatory frameworks to support renewable energy deployment.*

Some of the analysed countries have adopted **best practices** such as:

- Financial incentives designed to align with policy targets & market realities
- Competitive processes for granting financial incentives
- Performance-based incentive mechanisms for utilities

*Countries scoring ≤1.5 in our regulatory review
Analysis of Regulatory Attractiveness: Transmission Segment

- **Contracts regulation**: Average 1.4, Min 0, Max 3
- **Economic regulation**: Average 1.8, Min 0, Max 3
- **Credit Enhancement**: Average 1.2, Min 0, Max 2.5

United Nations Economic Commission for Africa
Establish Effective Contracts Administration

7/16 countries* demonstrate a lack of transparency regarding the terms of key sector contracts (Transmission Service Agreements, concessions) and present possible red tape in contract negotiation.

- Clarity on rights and obligations, performance requirements & remuneration
- Transparency on contract review and approval process
- National regulator involved in the approval of contractual terms

*Countries scoring ≤1.5 in our regulatory review
Analysis of Regulatory Attractiveness: Distribution Segment

- **Contracts Regulation**
  - Average: 0
  - Min: 0
  - Max: 1.8

- **Economic Regulation**
  - Average: 0
  - Min: 0
  - Max: 1.7

- **Credit Enhancement**
  - Average: 0
  - Min: 1.2
  - Max: 3

*United Nations Economic Commission for Africa*
Analysis of Regulatory Attractiveness: Off-grid Segment

- **Contracts regulation**
  - Average: 0
  - Min: 1.3
  - Max: 3

- **Economic regulation**
  - Average: 0
  - Min: 1.2
  - Max: 3

- **Credit Enhancement**
  - Average: 0.5
  - Min: 1.3
  - Max: 3

- **Indirect incentives**
  - Average: 0
  - Min: 2.4
  - Max: 3
Create Conditions for Long-term Financial Viability of the Sector

7/16 countries* lack transparent electricity tariff regulation.

- Effective cost recovery as a core objective of tariff policy
- Detailed and transparent tariff methodologies and tariff setting process
- Frequency of tariff review and updates defined by law
- Dedicated tariff policies for mini-grids

*Countries scoring ≤1.5 in our regulatory review
Questions

1. What measures can African markets take to ensure market signals match investment ambitions? How can decision-makers progress towards cost-reflectivity of electric service while protecting vulnerable customers?

2. Contracts such as PPAs and TSAs are crucial for managing and reducing investment risks. What good practices can be shared to streamline contract negotiation and definition?

3. What are the best practices for targeting incentives to encourage investment?

4. What measures can enhance access to competitive credit conditions and investment facilitation measures?

5. What are the lessons learnt from successful reform experiences in Africa and other regions to transition to economically attractive electricity markets?
What do you think, do you relate to this?
We are here to listen to your comments...

Thank You!
A review of electricity policy and regulatory frameworks in Africa

Snapshot of the Openness Dimension

28th March, 2023
UNECA HQ Addis Ababa
Advancing the electricity sector reform agenda in Africa

The program encourages policy and regulatory reforms towards increased market openness, attractiveness and readiness.

Analysis covered 16 African countries, providing a comprehensive sample of all African regions.

The analysis focuses on the whole electricity sector value chain:

- Generation
- Transmission
- Distribution
- Off-grid

Results dissemination
Countries case studies elaboration
Dissemination and training events

Policy dialogue & Capacity Building
Country engagement and dissemination of results
Trainings

Country-focused support
Advisory support to interested countries for policy and regulatory reforms

2019
Methodology
Expert workshops
Questionnaires elaboration
Country selection

2020
Data collection
Data collection
High-level local experts' involvement
Validation meetings

2021
Results dissemination

2022
Policy dialogue & Capacity Building

2023
Country-focused support
Advisory support to interested countries for policy and regulatory reforms

Analysis covered 16 African countries, providing a comprehensive sample of all African regions. The analysis focuses on the whole electricity sector value chain:

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United Nations Economic Commission for Africa
The degree of market *openness* is the first element evaluated by investors when scoping for investment opportunities.
Openness Dimension

- **Electricity Sector Strategy**
  - Energy policy & targets

- **System Planning**
  - Generation and network expansion plans & resources mapping

- **Power Sector Governance**
  - Market governance, operational regimes & regulatory authority

- **Power Sector Framework**
  - Unbundling of the electricity service value chain

- **Power Sector Competition**
  - Degree of competition within the market

- **Private Sector Participation Models**
  - Ownership models for private investors

- **Generation Off-taking Options**
  - Business and commercial models

- **Procurement Process**
  - Public infrastructures procurement governance

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United Nations Economic Commission for Africa
Analysis of regulatory Openness in the Generation segment
## Analysis of regulatory Openness in the Transmission segment

<table>
<thead>
<tr>
<th>Category</th>
<th>Average</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity Sector Strategy</td>
<td>0.5</td>
<td>2.1</td>
<td>3</td>
</tr>
<tr>
<td>System Planning</td>
<td>0</td>
<td>2.1</td>
<td>3</td>
</tr>
<tr>
<td>Power Sector Governance</td>
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<td>2.5</td>
<td>3</td>
</tr>
<tr>
<td>Power Sector Framework</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Private Sector Participation Models</td>
<td>1.2</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Procurement Process</td>
<td>1.5</td>
<td>2.2</td>
<td>3</td>
</tr>
</tbody>
</table>
Develop multiple models and routes to market for market operators

- Generation Off-taking Options
- Private Sector Participation Models

5/16 countries* offer single off-taking arrangements.

11/16 countries* have some form of restriction to private sector participation in the transmission service.

- Allow the presence of multiple off-takers’ (i.e. corporate buyers) within the market.
- Adopt regional rules & standards enabling cross-border electricity trade.
- Allow the private sector to build, own, operate, and sell transmission services to the national utility for specific assets.

*Countries scoring ≤1.5 in our regulatory review
Analysis of regulatory Openness in the Distribution segment
Analysis of regulatory Openness in the Off-grid segment

- Electricity Sector Strategy
- System Planning
- Power Sector Framework
- Power Sector Competition
- Private Sector Participation Models
- Procurement Process
- Power Sector Governance

[Graph showing scores and averages]
Establish a level playing field for market players

10/16 countries * are still characterized by vertically integrated utilities, monopoly of certain services and constrained private sector role.

- Independent transmission system operator.
- Legal right to access to electricity networks for all potential users.
- Primary legislation to define market participants obligations and rights to operate
- Clear legal framework for electricity infrastructure procurement.

*Countries scoring ≤1.5 in our regulatory review
Questions

1. In the wake of global economic shocks, how can African countries sustain infrastructure investment? What strategies can be put in place to ensure that investment flows continue?

2. What specific policy and regulatory measures can be implemented to accelerate investment across the infrastructure value chain in Africa?

3. How can governments and the private sector work together to create effective PPPs? What lessons can we learn from successful PPPs in Africa and beyond?

4. What are the challenges and opportunities for private sector investment in achieving sustainable development goals in Africa?

5. How can Africa position itself as an attractive investment destination for global capital?
What do you think, do you relate to this?
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Thank You!
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Snapshot of the Readiness dimension

28th March, Addis Ababa

United Nations Economic Commission for Africa

RESA AFRICA FOUNDATION
The degree of markets’ readiness to support the integration and secure operation of new infrastructures, necessary to ensure system reliability and quality, is the third dimension considered by private investor in markets’ assessment.
Readiness Dimension

**System Planning**
- Network Development Plan

**Grid Access**
- Grid connection and operation agreements

**Authorisations & Permits**
- Land access, environmental permits and one-stop-shop

**Grid Code**
- Access to network, system operation rules & ancillary services

**Mini-grid Integration**
- Regulation for off-grid arrival

**System Quality and Security Standards**
- Quality and security standards for networks

**Access to Data**
- Public availability of data
Analysis of Regulatory Readiness: Generation Segment

- **Authorisations & Permits**: Min 2, Average 2.5, Max 3
- **System Planning**: Min 0, Average 2.4, Max 3
- **Grid Code**: Min 0, Average 1.9, Max 3
- **Grid Access**: Min 0, Average 1.7, Max 3
- **System Quality and Security Standards**: Min 0, Average 2.5, Max 3
- **Access to Data**: Min 0, Average 1, Max 2.5

Min, Average, Max
Establish system development and operation rules

6/16 countries* lack or have incomplete grid code regulation and lack transparent rules for market operation and dispatch.

2/3 of the reviewed countries shows good practices in dealing with grid code regulation by:

- Mandate responsible authority for grid code development.
- Adopt and enforce, connection, operation and planning sub-codes.
- Appropriate requirements for VRE plants integration.
- Monitor compliance with grid connection codes.

*Countries scoring ≤1.5 in our regulatory review
Analysis of Regulatory Readiness: Transmission Segment

Authorisations & Permits

Grid Code

Grid Access

System Quality and Security Standards

Access to Data

Min  Average  Max

2  2.3  2.5

2.4  3

1.7  3

2.5  3

2.4  3
Analysis of Regulatory Readiness: Distribution Segment

Authorisations & Permits

Grid Code

Grid Access

System Quality and Security Standards

Access to Data

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Ensure open access and integration to the grid system

Grid access is a challenge in **8/16 countries** due to lack of clarity on responsibilities and cost allocation related to grid connection and on tariff conditions for access and usage of the grid.

**40% of the countries** adopted exhaustive legislation concerning grid access based on:

- Non-discriminatory third-party access to networks
- Streamlined grid connection process
- Standardised system access contracts
- Consultative transmission network charge setting

*Countries scoring ≤1.5 in our regulatory review*
Analysis of Regulatory Readiness: Off-grid Segment

Authorisations & Permits
- Min: 1.5
- Average: 2.4
- Max: 3

Access to Data
- Min: 3
- Average: 3
- Max: 3

Off-grid System integration
- Min: 0
- Average: 1.1
- Max: 3

System Quality and Security Standards
- Min: 0
- Average: 1.5
- Max: 3

United Nations Economic Commission for Africa
10/14 countries lack regulation for off-grid system integration, thus increasing the risk of stranded assets and the uncertainty around off-grid investments. *

Some pioneer countries adopted legislation offering long-term integration options for off-grid systems:

- Comprehensive master plan for electricity infrastructure development.
- Define technical standards for mini-grid integration with main network.
- Establish commercial models for mini-grid operators in case of grid arrival.

*Countries scoring ≤1.5 in our regulatory review
Questions

1. What are the most critical aspects that African countries should consider when adopting grid regulation policies?

2. Are there valuable lessons from successful international experiences of private sector participation in transmission and distribution from which African countries could learn?

3. How can African countries revise their regulatory frameworks to safe and reliable integration of renewables in their grid systems?

4. How can grid regulation policies be tailored to promote regional integration and cooperation in the electricity sector?

5. How can regulatory frameworks be designed to ensure African markets are ready to welcome and integrate new infrastructures and ensure safe project implementation?
What do you think, do you relate to this?
We are here to listen to your comments...

Thank You!