Electricity Regulatory Index for Africa
Detailed Methodology
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African Development Bank Group
Avenue Joseph Anoma
01 B.P. 1387 Abidjan 01, Côte d’Ivoire
Phone: (+225) 27 20 26 10 20
Fax: (+225) 27 20 21 31 00
www.afdb.org
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### Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accountability</strong></td>
<td>The ability of the regulated entity or other stakeholders, as set out in the primary legislation, to challenge the regulator’s decision in the courts through an appeal to a commission or a specialized body.</td>
</tr>
<tr>
<td><strong>Clarity of Roles and Objectives</strong></td>
<td>The definition and codification of the regulator’s functions and duties, including the regulated utility’s obligations in primary or secondary legislation, license, or contract.</td>
</tr>
<tr>
<td><strong>Economic Regulation</strong></td>
<td>The aspect of the regulator’s functions and duties which affect the financial and commercial viability of the utility company and long-term financial sustainability of the sector.</td>
</tr>
<tr>
<td><strong>Electricity Regulatory Index</strong></td>
<td>Refers to the final Electricity Regulatory Index that is obtained by aggregating the results of the Electricity Regulatory Index for Governance and Substance together with results from the Regulatory Outcome Index.</td>
</tr>
<tr>
<td><strong>Electricity Regulatory Index for Governance and Substance</strong></td>
<td>The index obtained by aggregating the scores for the Regulatory Governance Index and the Regulatory Substance Index.</td>
</tr>
<tr>
<td><strong>Energy Labels</strong></td>
<td>Informative labels affixed to manufactured products that indicate a product’s energy performance (usually in the form of energy use, efficiency, and/or energy costs) to provide consumers with the data necessary for making more informed purchase decisions.</td>
</tr>
<tr>
<td><strong>Independence of the Regulator</strong></td>
<td>Institutional, financial and operational autonomy from political authorities and stakeholders.</td>
</tr>
<tr>
<td><strong>Legal Mandate</strong></td>
<td>Primary (or secondary) legislation under which the regulatory body was established.</td>
</tr>
<tr>
<td><strong>Micro-Grid</strong></td>
<td>Mini grids that operate at a smaller size and of generation capacity, ranging between 1 and 10 kW.</td>
</tr>
<tr>
<td><strong>Mini-Grid System</strong></td>
<td>Off-grid small-scale distribution network that provides electricity (usually from 10 kW to 10 MW), to one or more communities, from small generators using fossil fuel, renewable energy technology or a combination of the two.</td>
</tr>
</tbody>
</table>

1 The list of definitions is understood within the context of the Electricity Regulatory Index and its assessment – it is not the strict definitions of the terms.
**Minimum Energy Performance Standards**

The set of procedures and rules detailing the energy performance of manufactured products, sometimes prohibiting the sale of products less energy efficient than the minimum standard.

**Nascent Regulator**

Regulators that have been operational for less than five years or have recently been restructured. These institutions often are at an early stage of organizational development, limited capacity, and leverage to develop and implement regulatory instruments and initiatives.

**Off-Grid System**

A decentralized or isolated power system, without connection, either directly or indirectly, to the distribution or transmission network. Off-grid systems can be categorized as mini-grid, micro-grid, or individual stand-alone systems.

**Open Access to Information**

A situation in which key regulatory instruments and documents including primary legislation, licenses or contracts, consultation documents, regulators comments on consultation documents or tariff decisions are made available to the public, utilities and other stakeholders.

**Participation**

Stakeholder involvement via consultations prior to making regulatory decisions and processes via public hearings, as well as distribution of draft reports for comments to stakeholders.

**Power Purchase Agreement**

A contract between an off-taker or purchaser of electricity and a power producer. A power purchase agreement is tailored to the specific application relevant to the parties. It usually defines certain conditions such as the amount of power to be supplied, the negotiated prices, accounting, and penalties for non-compliance.

**Predictability**

A regulatory environment in which processes and procedures for making key regulatory decisions exist and are known to stakeholders, in addition to well-established public tariff review procedures.

**Quality of Service Code**

The document that establishes the requirements for regulated utilities to deliver an adequate level (within pre-defined thresholds) of quality and reliability in electricity service provided to customers.

**Quality of Service Delivery (Commercial)**

The non-technical aspect of power supply service that describes the relationship and interaction between power utilities and customers with respect to information on outages, meter readings and disputes, consumer account queries, response to consumer complaints, etc.
Quality of Service Delivery (Technical)  
Refers to technical aspect of power quality issues, particularly ensuring continuity of supply, frequency control and voltage quality within set standards and thresholds.

Regulatory Capture  
A situation in which the regulated utilities or any of the sector stakeholders influence the decisions of the regulator by using various approaches or means to compromise a regulator’s decision-making independence.

Regulatory Governance  
the institutional and legal design of the regulatory system that defines the framework within which decisions are made by the regulator.

Regulatory Governance Index  
The index obtained by aggregating the main indicator scores for Regulatory Governance.

Regulatory Outcome  
The impact of regulator’s decisions, actions and activities on the regulated entity, as well as on the entire sector in general.

Regulatory Outcome Index  
The index obtained by aggregating the main indicator scores for Regulatory Outcome.

Regulatory Substance  
Refers to the attributes of regulation linked to the actual actions or decisions of regulators that affect the performance of the regulated industry; the practical operation of regulatory practices and processes that have direct impact on regulatory outcomes.

Regulatory Substance Index  
The index obtained by aggregating the main indicator scores for Regulatory Substance.

Stand-Alone Individual System  
Refers to generation systems that are not connected to the distribution network and which range from household-sized systems of 30–100-watt peak, capable of powering a few bulbs, a fan and possibly a small television, to institutional sizes (100–500-watt peak) for use in schools, health centers, etc.

Technical Regulation  
The aspect of a regulator’s duties and functions that affects the quality and reliability of electricity supply to consumers.

Transparency  
Full disclosure to relevant stakeholders of key regulatory documents, consultation responses, and regulator’s comments and decisions on issues raised during the consultation process.
1. The Context of ERI

The Electricity Regulation Index (ERI) measures the level of development and implementation of regulations in the electricity sector in a country. It assesses not only the development and implementation of regulations, but also the effect of the regulation on actors and stakeholders in the electricity sector. This includes power distribution utility companies and consumers. The insufficiency or absence of regulations appears to be an obstacle in the electricity sector in Africa. ERI is that instrument that highlights the insufficiency. It awakens awareness, identifies challenges and indicates the path to follow to reverse the trend for the development of the electricity sector in all its components.

1.1 Objectives

The objectives of the ERI are to:

- bring into perspective, the delays observed in the introduction and implementation of regulations in the electricity sector across Africa.
- encourage through recommendations, the establishment of solid and effective regulatory frameworks that are able to promote the emergence of a sustainable and responsive electricity sector.
- put in place a methodology to facilitate better data collection from participating countries.
- continuously expand coverage of ERI to cover more African countries.
- give visibility to the level of development of the regulatory framework of the electricity sector in Africa to enable investors make informed decisions on their participation in the sector.
- facilitate and promote universal access to electricity for sustainable development.
- highlight the importance of energy efficiency and renewable energy as important elements in sustainable development, which holds the future in the supply of clean energy and energy use in the world.
- consolidate and improve relations between regulatory authorities and other players in the electricity sector in order to ensure collaboration and sector efficiency.

1.2 Assessment of the regulatory framework

In the theory of regulation of the electricity sector, the establishment of a regulatory framework is based on two essential pillars: regulatory governance and regulatory substance. These two pillars are key to determining how an effective regulatory environment can be used to support reforms in the electricity sector in participating countries. They make it possible to ensure efficiency, sustainability and the achievement of desired political, economic, social and environmental objectives (Smith 1997, Stern and Holder 1999, Brown 2006 and others).
The first pillar, the Regulatory Governance Index (RGI), assesses the institutional and legal design of the regulatory framework regarding the level of development of the laws and other regulatory texts. It also assesses the procedures that will ensure good oversight and monitoring of activities in the electricity sector.

The Regulatory Substance Index (RSI), the second pillar, assesses the content of regulation and measures actual decisions and actions by the regulators in executing their mandate and how regulators perform their including development and implementing appropriate regulatory instruments to facilitate their oversight of the power sector.

The aim of effective regulation is to improve sector performance. Regulatory decisions and actions should therefore drive sector performance and lead to measurable outcomes on the sector.

Consequently, a third pillar, the Regulatory Outcome Index (ROI), is used to measure the regulatory effect on the electricity utility companies or on the consumers who are directly impacted by the regulators’ decisions and actions.

<table>
<thead>
<tr>
<th>Regulators</th>
<th>Electricity Utility Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory Governance Index (RGI)</td>
<td>Regulatory Substance Index (RSI)</td>
</tr>
<tr>
<td>1-Legal mandate</td>
<td>9- Economic regulation</td>
</tr>
<tr>
<td>2-Clarity of roles and objectives</td>
<td>10- Technical regulation</td>
</tr>
<tr>
<td>3-Independence</td>
<td>11- Licensing framework</td>
</tr>
<tr>
<td>4-Accountability</td>
<td>12- Institutional capacities</td>
</tr>
<tr>
<td>5-Transparency of decisions</td>
<td>13- Development of renewable energies</td>
</tr>
<tr>
<td>6-Predictability</td>
<td>14- Mini grids and off-grid systems</td>
</tr>
<tr>
<td>7-Participation</td>
<td>15- Development of energy efficiency</td>
</tr>
<tr>
<td>8-Access to information</td>
<td>1- Financial performance and competitiveness</td>
</tr>
<tr>
<td></td>
<td>2- Quality of technical and commercial service</td>
</tr>
<tr>
<td></td>
<td>3- Facilitation of access to electricity</td>
</tr>
</tbody>
</table>
2. Construction and Rating of ERI

2.1 Construction of the ERI

The ERI is a composite index of the three indices, namely the Regulatory Governance Index (RGI), the Regulatory Substance Index (RSI) and the Regulatory Outcome Index (ROI). From questionnaires distributed to regulators and electricity utility companies, scores are assigned to each question. The aggregation of these scores makes it possible to determine the scores of the indicators that make up the ERI indices.

The steps for calculating the ERI are as follows:

- **Step 1:** Identification of indicators and sub-indicators for regulatory governance, regulatory substance and regulatory effect
- **Step 2:** Design of the survey questionnaire to obtain information from regulatory authorities and electricity companies
- **Step 3:** Verification and validation of responses obtained from regulatory authorities and electricity companies by checking all the proof where necessary.
- **Step 4:** Determination of RGI and RSI.
- **Step 5:** Aggregation of the RGI and RSI results to calculate the ERIgs.
- **Step 6:** Determination of the regulatory outcome index (ROI) from the results of the questionnaire administered to the electricity utility company concerned.
- **Step 7:** Aggregation of the results of the ERI Governance and Substance (ERIgs) and of the ROI to calculate the ERI.

2.2 The rating methodology and process

The questions are designed in such a way that they can assess the alignment of regulators with international best practices. Each indicator is assigned a score varying between 0.000 and 1.000.

The score for each indicator is calculated in two ways. For indicators that have sub-indicators, the arithmetic mean of the scores of the sub-indicators gives the score of the indicator. For those indicators that do not have sub-indicators, their scores are obtained by taking the arithmetic mean of the scores of the questions that compose them.

To ensure the credibility of the responses, supporting documents are requested for some responses in order to verify the responses. For the type of questions that require proof, the final score is calculated by multiplying the score of the main question and that of the required proof, which can either be one or zero. Example: if the score of the main question is 0.5 and that of the proof question is 1, the result is 0.5 x 1 = 0.5. It is this result which contributes to the calculation of the scores of the indicators and sub-indicators.
2.3 Calculation of RGI, RSI and ERI\textsubscript{GS}

The aggregated scores of indicators for Regulatory Governance Index and Regulatory Substance Index are used to construct an index for Governance and Substance (ERIGS). This preliminary ERI calculation also provides important insights into national regulatory development, without considering the effects of regulatory action on the sector.

A regulatory outcome assessment is also carried out to ascertain the effect of each regulator’s decision and action on the performance of the power utilities that it regulates and, ultimately on the sector. The Regulatory Outcome Index (ROI) captures the results of this analysis. The ROI is based on primary information obtained from completed questionnaires submitted by power distribution utilities. The results from ERIGS and ROI are combined, as Figure 1 below indicates, to determine the ERI.

The RGI result is obtained by calculating the arithmetic mean of the scores of all the indicators related to regulatory governance. In this case, these are the scores of the eight indicators of regulatory governance. The same is true of the result of the Regulatory Substance Index, which is obtained by taking the arithmetic mean of the scores of the seven indicators that it contains. The results obtained range from 0.000 to 1.000.

With the results of RGI and RSI, the result of the Regulatory Governance and Regulatory Substance Index (ERIGS) is obtained by taking the arithmetic mean of the scores of RGI and RSI for each country. This index indicates the level of development and implementation of regulations in a country. That is:

$$\text{ERI}_{\text{GS}} = \frac{\text{RGI} + \text{RSI}}{2}$$

Illustration of the calculation of RGI, RSI and ERI\textsubscript{GS} for the cases of Country A and Country B

Example of calculation of RGI for Country A and Country B.

The table below presents the scores of Country A and Country B in terms of regulatory governance.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Country A</th>
<th>Country B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal Mandate</td>
<td>0.625</td>
<td>1</td>
</tr>
<tr>
<td>Clarity of Roles</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Independence</td>
<td>0.519</td>
<td>0.668</td>
</tr>
<tr>
<td>Responsibility</td>
<td>0.698</td>
<td>0.698</td>
</tr>
<tr>
<td>Transparency</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Predictability</td>
<td>0.682</td>
<td>0.318</td>
</tr>
<tr>
<td>Participation</td>
<td>0.750</td>
<td>0.860</td>
</tr>
<tr>
<td>Open Access to Information</td>
<td>1</td>
<td>0.875</td>
</tr>
</tbody>
</table>

Figure 1: Calculating the ERI
The values of the RGI for each country are obtained by taking an arithmetic average of the scores of the various indicators relating to regulatory governance in said countries.

For Country A:
\[
RGI = \frac{(0.625 + 1 + 0.519 + 0.698 + 1 + 0.682 + 0.750 + 1)}{8} = 0.784
\]

For Country B:
\[
RGI = \frac{(1 + 1 + 0.668 + 0.698 + 1 + 0.318 + 0.860 + 0.875)}{8} = 0.802
\]

Example of RSI calculation for Country A and Country B

The table below presents the scores of Country A and Country B in terms of regulatory substance.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Country A</th>
<th>Country B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic regulation</td>
<td>0.909</td>
<td>0.773</td>
</tr>
<tr>
<td>Technical regulation</td>
<td>0.857</td>
<td>0.786</td>
</tr>
<tr>
<td>Licensing Framework</td>
<td>0.500</td>
<td>0.900</td>
</tr>
<tr>
<td>Institutional capacities</td>
<td>0.758</td>
<td>0.758</td>
</tr>
<tr>
<td>Development of renewable energies</td>
<td>0.889</td>
<td>0.556</td>
</tr>
<tr>
<td>Mini Grids and Off Grid Systems</td>
<td>0.929</td>
<td>0.571</td>
</tr>
<tr>
<td>Development of Energy Efficiency</td>
<td>0.871</td>
<td>0.214</td>
</tr>
</tbody>
</table>

The values of the RSI for each country are obtained by calculating the arithmetic mean of the scores of the various indicators relating to the regulatory substance in the reference countries.

For Country A:
\[
RSI = \frac{(0.909 + 0.857 + 0.500 + 0.758 + 0.889 + 0.929 + 0.871)}{7} = 0.816
\]

For Country B:
\[
RSI = \frac{(0.773 + 0.786 + 0.900 + 0.758 + 0.556 + 0.571 + 0.214)}{7} = 0.651
\]

Example of ERI_{gs} calculation for Country A and Country B.

The values of ERI_{gs} in each country are obtained by taking a simple arithmetic mean of the values of RGI and RSI in the country concerned.

For Country A we have:
\[
ERI_{gs} = \frac{(RGI + RSI)}{2} = \frac{(0.784 + 0.816)}{2} = 0.800
\]

Likewise, for Country B we have:
\[
ERI_{gs} = \frac{(RGI + RSI)}{2} = \frac{(0.802 + 0.651)}{2} = 0.727
\]

2.4 Calculation of ROI

Based on the answers provided to the questionnaires, the ROI is obtained by taking the arithmetic mean of the scores of the indicators that make up the said index. It reflects the regulatory effect on electricity utility companies. It helps to understand and better analyze the effect of regulatory or regulator actions on the performance of electricity companies.

Example of ROI calculation for Country A and Country B.

The table below presents the scores of Country A and Country B in terms of regulatory effect:
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<table>
<thead>
<tr>
<th>Indicators</th>
<th>Country A</th>
<th>Country B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Performance and Competitiveness</td>
<td>0.618</td>
<td>0.529</td>
</tr>
<tr>
<td>Technical and Commercial Quality of Service</td>
<td>0.440</td>
<td>0.500</td>
</tr>
<tr>
<td>Access to Electricity</td>
<td>0.333</td>
<td>0.000</td>
</tr>
</tbody>
</table>

For Country A we have:

\[ \text{ROI} = \frac{(0.618 + 0.440 + 0.333)}{3} = 0.464 \]

For Country B we have:

\[ \text{ROI} = \frac{(0.529 + 0.500 + 0.000)}{3} = 0.343 \]

### 2.5 Calculation of ERI

The calculation of ERI is done by combining the results of ERIGS and those of ROI in each country. ERI reflects the state of development and implementation of the regulation, as well as the effect of said regulation on the actors of the electricity sector, in particular the electricity companies in this case. The ERI results in each country are obtained by taking a geometric mean of the results obtained in ERIGS and those obtained in ROI according to the formula:

\[ \text{ERI} = (\text{ERI}_{GS} \times \text{ROI})^{1/2} \]

Example of ERI calculation for Country A and Country B

For Country A we have:

\[
\text{ERI} = (\text{ERI}_{GS} \times \text{ROI})^{1/2} \\
= (0.800 \times 0.464)^{1/2} \\
= 0.609
\]

For Country B we have:

\[
\text{ERI} = (\text{ERI}_{GS} \times \text{ROI})^{1/2} \\
= (0.727 \times 0.343)^{1/2} \\
= 0.499
\]
3. Data Source

3.1 Questionnaire design

The data for the ERI survey is collected following inquiries directed to regulatory authorities and electricity utility companies. There are two sets of questionnaires. One is for the regulatory authorities and the other for power utilities.

To avoid any undue subjectivity, and to make the data collected more credible and efficient, supporting documents are required for most of the questions addressed to the participants in the survey. The survey is conducted exclusively in countries that have established regulatory authorities and from which the data is collected, as well as from the electricity utility companies. To enable respondents to refer to the responses they provided to similar questions posed in a previous year (N-1), these questions and responses are positioned on the online platform to afford participants the opportunity to consult before answering the questions of year N.

The first set of questionnaires sent to the regulatory authorities is to collect primary data relating to regulatory governance and regulatory substance. The second set of questionnaires sent to utility companies is to measure their conformance to the regulations, codes and their performance in the electricity sector.

3.2 Survey sample

For the purposes of the survey, the following are developed:

- a list of all regulators of the electricity sector in Africa; and
- a list of all electricity distribution utility companies;

The surveyed population is segmented into two groups: (i) regulatory authorities to assess the level of development of regulations in the country concerned and (ii) electricity companies to assess the effect of regulations on their performance. In countries where there are several regulators with specific missions, the responses from each regulator are considered based on their specific missions and functions and the results are consolidated. In countries where there are several electricity utility companies, each is asked to participate individually, and the results are consolidated to obtain the composite result of the country concerned.

3.3 The initiation and administration of the survey

Invitations to participate in the ERI survey are usually sent electronically to regulators and utilities in the countries where proof of the existence of an independent regulator has been established. The waiting period for responses is one month after the questionnaires are sent out. Experts in electricity sector regulation are recruited to assist the African Development Bank team. In each country, the regulator and another electricity company appoint a focal point.

3.4 Data collection

Since the emergence of the Covid-19 pandemic, an electronic platform has been set up through which questionnaires are completed and returned online to the African Development Bank. Beforehand, for reasons of confidentiality and preservation of the integrity of the responses, a unique username and password are sent to each participating country. These identifiers are unique for each regulator and for each distribution utility. Where there are several electricity utility companies or several regulators, each institution (regulatory authority or electricity utility company) receives their identifiers different from the others. Answers are provided to the questionnaires by the entities through the focal point or the previously designated person, who is the sole holder of
the username and password. The control of the filling and the validation of the answers internally to the company are organized before the submission of the completed questionnaire on the online platform. The system is designed in such a way that the responses sent online on the platform cannot be modified by the African Development Bank team.

3.5 Data validation

Some discrepancies have been observed in terms of answers provided for the same question in the previous years. There have sometimes been incomplete or incomprehensible answers. A record is made of discrepancies in the regulator group as well as the group of electricity utility companies. When a discrepancy is observed for the same question between the previous year (N-1) and that of year N, a validation process is initiated where the organizations’ focal point is interviewed and requested to provide further supporting documents where necessary. In the absence of supporting documents, clarifications are requested from the respondents concerned during a validation session with representatives of the regulator and the utility. Alternatively, emails are sent to the concerned parties. In the cases of incomplete or incomprehensible answers, clarifications or proof of certain statements are requested from the institution or respondent for a better understanding. At the end of this process, the data is consolidated for each regulator and each utility company in a country.

Some principles have been agreed and communicated to respondents beforehand. They include the following:

- The evidence that must be produced to justify certain responses must be as detailed as possible to facilitate verification and give credibility to the response. For example, if it is a law, the respondent must give the year of promulgation of the law, the title, the section, the chapter and the article concerned to facilitate the verification, and for the proof to be considered. Otherwise (in some cases a web address was given without links to the document, section or other required details) the proof is not considered. This resulted in changes in the scores assigned to institutions.

- As another mode of data validation, changes in position or rankings are subject to in-depth verification.

3.6 Data processing

The data collected from regulators makes it possible to construct 15 indicators around which the regulatory governance (RGI) and regulatory substance (RSI) indices are developed. Utility company data is grouped around three indicators that make up the Regulatory Outcome Index (ROI) on utility performance.

In countries where there are several regulators with specific mandates, the responses are solicited from each of them based on their specific mandates, and the results are consolidated. In countries where there are several electricity utility companies, the companies are asked to participate individually, and the results are consolidated to obtain the composite result of the country concerned. This methodology made it possible to resolve the case of Ghana, which has two regulatory authorities in the electricity sector. This was also the case for Nigeria, which has several electricity companies.
4. Comparative Analysis From Year to Year

From year to year, the following observations have been made:

- There was an increase in the number of countries that responded to the survey.
- There was an increase in the number of countries that submitted completed questionnaires, and these were ranked.
- The questionnaires have evolved with more questions for regulators to refine the analysis, and a reduction for utilities to eliminate some apparently duplicated questions.
- The questions requiring justification increases every year to give more credibility to the information provided or the statements made in the answers that are provided.
5. Classification and Interpretation of Scores

The classification of the countries for each index is done according to color bands, which reflect the level of development of the regulatory framework in participating countries. To avoid a dispersion in the understanding of the results, four colors have been retained.

<table>
<thead>
<tr>
<th>Colors / Range of scores</th>
<th>Interpretations</th>
</tr>
</thead>
</table>
| 0.800 to 1.000           | A high level of regulatory development  
Most of the elements of a strong political, regulatory, legal and constitutional framework are in place. |
| 0.600 to 0.799           | Substantial level of regulatory development  
Setting up several elements of a framework favorable regulatory framework, although with gaps that do not allow the regulatory authority to have strengthened institutional and legal capacities and structures. |
| 0.500 to 0.599           | Average level of regulatory development  
Existence of basic elements of a regulatory framework. However, the capacity of the regulator is limited due to the weak evolution of institutional and legal structures. |
| 0.000 to 0.499           | Low level of regulatory development  
Little or no regulatory framework in place. Lack or insufficiency of institutional or legal structures limiting the capacities of the regulatory authority. |
6. Limitations

The ERI survey has limits on the methodological level, the determination of the sampling, the design, the interpretation of the results and the post-Covid-19 environment.

6.1 Methodology

The ERI is built around indicators and sub-indices. There appears to be an inequality in the weight of the sub-indices. Some are built based on eight indicators. Some are built on seven indicators and still others a little less. The sub-indices therefore seem not to have the same weight, but the methodological constraints mean that they are all taken on the same equal footing. Any analysis on the development and implementation of electricity sector regulation in a country should take this into account.

6.2 In terms of design

The differences in the development of regulations and the level of electrification in certain countries put forward a problem in the preparation of the questionnaire. Respondents are not at the same level of development of electrification. This gives certain limitations in the design of the questionnaires. To help participants understand the questions, it is often necessary to present them in very simple terms to also split up certain questions to proceed step by step to the desired result. It is necessary to reconcile two objectives: (i) to cover the widest possible field of the regulations and (ii) to take stock of the time taken by the respondent to fully complete the questionnaire.

6.3 Sampling

The aim of the survey is to cover all African countries in which an electricity sector regulatory authority has been established. Currently, out of 54 countries in Africa, only 45 have set up and operationalized electricity regulatory authorities.

Sometimes a few of them do not respond to the invitation to complete and send back responses to the questionnaires. This continues to limit the number of the participants.

6.4 Limitation caused by Covid-19

The administration of the ERI survey has generally been organized in such a way to provide sufficient time for face-to-face consultations between the Bank and the participating countries. Within the context of the Covid-19 pandemic, engagement, follow up and validation process has all been virtual which may impact the level of understanding of the respondents of the ERI survey and extend the validation process.

6.5 In terms of interpretation

The ERI indicates the level of evolution and development of the regulatory framework and its implementation in a country. On a purely scientific level, it does not characterize the level of infrastructure development or the rate of electrification in a country. It cannot therefore determine on its own the decision by any person to invest in any given country. The ERI does not provide for other indicators like country risk, economic risk, business climate or environment, ease of repatriation of profits, inflation, cost of capital, macro frameworks and microeconomic indicators in a country. A potential investor relies on all these elements to determine his or her willingness to invest in a country or in a sector such as electricity.

6.6 In terms of the conflict of powers

In almost all African countries, electricity utility companies existed before the advent of...
regulatory authorities. The utilities are strong and powerful in the political and administrative environment. Thus, some electricity companies do not feel obliged to refer to the regulatory authorities for the implementation of regulatory provisions, or to comply with the injunctions and sanctions given by the latter. This creates a blockage in the implementation of regulatory frameworks to govern the electricity sector. This situation is also felt in relations between the government and the regulator and does not facilitate the development of a regulatory framework conducive to investments and the development of the electricity sector. The ERI survey does not provide a solution to such an environment.

6.7 Viability of the sector

The ERI survey shows how the electricity sector needs to be organized to be viable and attract investors. By putting in place incentive regulations, countries can create an attractive environment for investments and create the conditions for the development of the sector. However, it is not only a question of creating these conditions; there are externalities including political, economic and cyclical parameters.
Electricity Regulatory Index for Africa
Detailed Methodology