

**PUBLIC UTILITIES
REGULATORY COMMISSION**



REGULATORY BRIEF

ISSUE 4

An Analysis of Ghana's
Performance in the Electricity
Regulatory Index (ERI) for
Africa

MAY 2023

KEY HIGHLIGHTS

- The ERI is the composite index that measures the level of development of electricity sector regulatory frameworks. It is constructed from the indicators of Regulatory Governance (RGI), Regulatory Substance (RSI) and Regulatory Outcome Index (ROI).
- The RGI evaluates the degree to which the laws, practices, standards, and policies controlling the electricity sector provide for an intentionally acceptable regulatory framework that is readily apparent, foreseeable, and credible using eight indicators.
- The RSI assesses the actual decisions of regulators, as well as the text of their regulations.
- The ROI is assessed on three pillars; Financial performance and Competitiveness, Quality of Service Delivery and Facilitation of Electricity Access.
- Uganda has been the topmost performing country since the inception of the ERI in 2018.
- Ghana's ERI ranking has seen an improvement from 6th position out of 15 participating countries in 2018 to 4th position out of 43 participating countries in 2022.

1. Introduction

This Regulatory brief is to assess the performance of Ghana's regulatory institutions and identify opportunities and foster collaboration for improvement. The brief is synthesized from the 2018- 2022 Electricity Regulatory Index (ERI) for Africa Reports. The (ERI) is a tool developed by the African Development Bank (AfDB) to measure the performance of national electricity regulatory institutions against, set international best practices, and to provide tailored recommendations. It assesses the degree of effectiveness of the regulatory frameworks governing the electricity sector in 43 of the 45 African States with confirmed regulatory authorities. It also assesses the ability of electricity regulatory bodies to successfully carry out the tasks and responsibilities that are pertinent to them as per their mandate.

The goal of the ERI is to highlight key areas of electricity regulation, which need reforms, outline appropriate areas for interventions, and encourage action among stakeholders to address them. Regulators across the African continent have widely adopted the ERI to analyse the regulatory environment and initiatives required to close the identified gaps. Investors

also use the index as a valuable source of information for investment decision making. It is therefore a valuable resource for sector analysis and monitoring the evolution of regulatory frameworks across the continent.

The ERI, which was first launched in 2018, is made up of three pillars, or sub-indices.

1. The Regulatory Governance Index (RGI)

This index, assesses how well the regulatory framework supports electricity sector reforms, promotes efficiency and meets desired economic, financial, environmental and social objectives. It is concerned with the existence and content of electricity regulations.

2. The Regulatory Substance Index (RSI)

This index, assesses how well the regulatory framework is implemented in practice.

3. The Regulatory Outcome Index (ROI),

This index, assesses the outcomes of regulatory processes from the point of view of regulated entities and power consumers, providing insights into how the actions of regulators have affected performance of the sector.

The Score range and interpretations for the various indices are below;

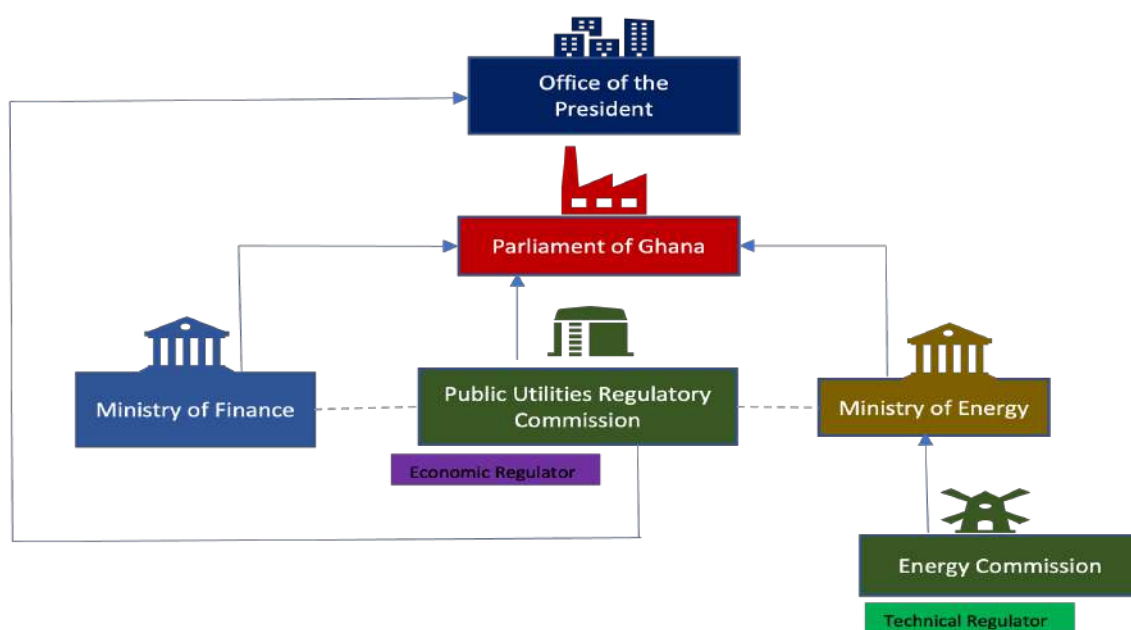
SCORE RANGE	INTERPRETATION
0.800 – 1.000	high level of regulatory development with most elements of a strong policy, regulatory, legal and institutional framework in place.
0.600 – 0.799	substantial level of regulatory development, with existence of many elements of an established supportive regulatory framework. However, there are weaknesses in structure, that do not permit the regulator to have a strong capacity, legal and institutional frameworks.
0.500 – 0.599	medium level of regulatory development, with basic elements of a supportive regulatory framework, limited legal and institutional structures and weak capacity of the regulator.
0.0 – 0.499	low levels of regulatory development, with few or no elements of a supportive regulatory framework. There is insufficient or non-existent legal and institutional structures and a weak and ineffective capacity of the regulator.

2. An Overview of Ghana’s Electricity Sector Regulation

Ghana’s power sector reforms took shape in the 1990s to increase the effectiveness of electricity service delivery, open the sector up for private participation, and promote competition in generation. The reforms brought about significant institutional and policy changes, all in an attempt to encourage the sector’s transformation in meeting worldwide standards. Prior to these reforms, Volta River Authority (VRA), the primary power utility, a vertically integrated and monopolistic company, owned and operated all assets for electricity generation, transmission, and distribution. These policy changes led to the separation of generation, transmission, and distribution services under the authority of different independent utilities, with

the National Interconnected Transmission System, owned and run by the National Grid Company (GRIDCo), at the heart of the power market transformation.

An assessment of the policy and regulatory framework suggests that, Ghana has done a good job of developing the legal framework, necessary to effectively control the electricity supply sector (UNECA, 2021). To a very large extent, most rules and policies controlling the electricity value chain emanate from the Public Utilities Regulatory Commission Act, 1997 (Act, 538) and the Energy Commission Act, 1997 (Act 541), which are the principal enabling statutes. Both Acts aim at encouraging private sector involvement in the sector, efficiency and transparency in electricity supply and use. For each electricity market segment, there are sufficient provisions in place to guarantee transparency, maintain fairness, and specify the ground rules for all industry participants (without discrimination)



3. Methodology

The Electricity Regulatory Index (ERI) is a composite indicator, which compares regulatory frameworks, which govern the electricity sector in African States to global norms and best practices. This paper adopts a desktop analysis; reviewing and conducting trend analysis, based on various ERI reports, which were produced by the African Development Bank (AfDB) over the five-year period (2018 – 2022). The trend analysis was conducted on three major indexes, sub-indicators and the overall ERI ranking of Ghana over the period under review. The number of sub-indicators for the main ERI pillars used to assess the performance of regulatory authorities increased from 12 in 2018 to 15 in 2019.

Regulatory Governance Index	Regulatory Substance Index	Regulatory Outcome Index
<ul style="list-style-type: none"> Legal Mandate Clarity of Roles and Objectives Independence Transparency of Decisions Participation Open access to information Predictability 	<ul style="list-style-type: none"> Technical Regulation Economic Regulation Commercial Quality of Electricity Licensing Framework 	<ul style="list-style-type: none"> Financial Performance Commercial Quality Technical Quality Electricity Access

4. Trend Of Ghana's Performance (2018 – 2022)

Ghana has participated in all five (5) Electricity Regulatory Index for Africa since its inception in 2018. The ERI has evolved considerably from fifteen (15) countries participating in 2018, to forty-three (43) countries participating in 2021. Generally, Ghana's performance has not been stable over the review period. The country made significant gains in some of the indicators at a point, enhancing its rank, while at certain points, there was a decline, which affected the overall ranking of the country. A trend analysis of the various indicators is presented below.

i. Trends in Regulatory Governance Index (RGI)

This index evaluates the degree to which the laws, practices, standards, and policies

controlling the electricity sector, provide for an internationally acceptable regulatory framework, which is readily apparent, foreseeable, and credible, using eight indicators. The RGI evaluates the institutional and legal structure of the regulatory institution, which is the setting in which regulatory decisions are made.

Figure 1: Trend in Ghana's RGI (2018-2022)

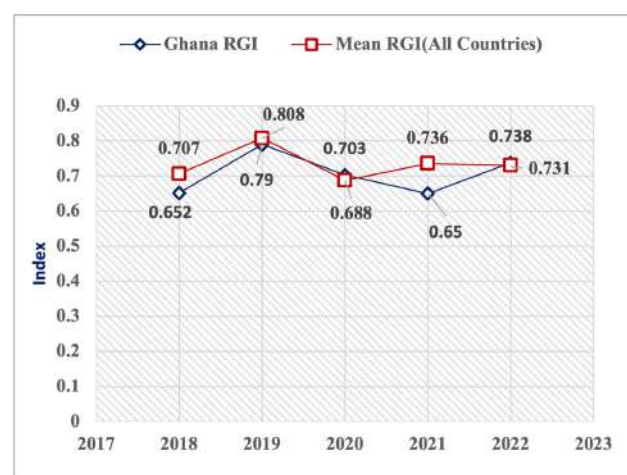


Figure 1, presents Ghana’s performance in terms of laws, practices, standards and policies in the delivery of quality electricity to end-users. In 2018, Ghana recorded an RGI of 0.652 with a commensurate RGI ranking of 11th position. In 2019, Ghana improved on its index value, increasing it to 0.79, however, its RGI ranking dropped to the 25th position, suggesting a general improvement in RGI among participating countries in 2019. Ghana’s index worsened in 2021 recording a value of 0.65 with a corresponding deterioration in RGI ranking to the 34th position. Subsequently, the country recorded a value of 0.738 in 2022 and ranked 23rd out of 43 countries that participated. This indicates a marked improvement over the previous year’s performance. Generally, performance of the country under the regulatory governance index over the period (2018 – 2022), places Ghana in the category referred to as; “Well developed; however, regulator or framework still displays a number of insufficiencies not aligned with international best practice”.

Other than the years 2020 and 2022, the country’s performance under this index has been below the overall mean score for all participating countries. For example, in 2020, Ghana scored an index of 0.703 above the mean score of 0.688. This compares with the mean score of 0.738 achieved in 2022.

Performance trends in key RGI sub indicators

Figure 2: Performance of RGI Sub-Indicators

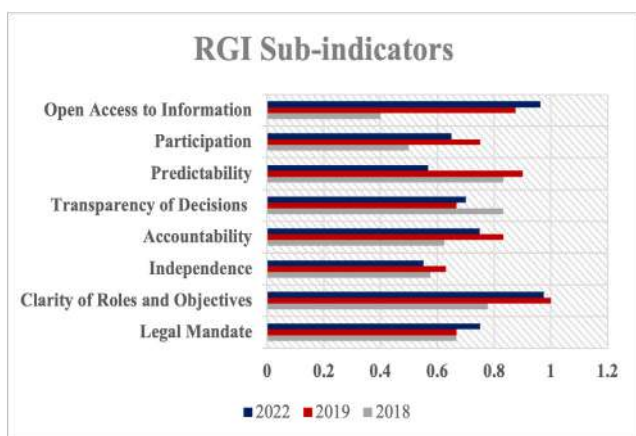


Figure 2 indicates that, the level of open access to information and clarity of roles and objectives have seen significant

improvements between 2018 and 2022. On the other hand, transparency of decisions, participation and predictability shows Ghana is not doing too good. For instance, predictability, dropped significantly between 2018 and 2022. Predictability scores are largely based on the tariff methodology and licensing regimes, while participation is based on the level of consultations on major decisions. The score on independence has not seen much improvement over the period, however, legal mandate of the regulatory institutions has significantly improved.

ii. Trends in Regulatory Substance Index (RSI)

The RSI has seven indicators in all and assesses the actual decisions made by regulators, as well as the text of their regulations. It evaluates how well the electricity sector regulators are executing their mandate and putting rules and procedures in place, which will have an impact on regulatory outcomes. Unlike indicators used under the RGI, the indicators used for this assessment are solely within the domain of regulators. Regulators have the power to enhance their performance under this indicator with little or no inputs from the executive arm of government. The seven indicators which are aggregated to arrive at the RSI value include; Economic Regulation, Technical Regulation, Licensing Frameworks, Institutional Capacity, Renewable Energy Development, Mini-grid and Off-grid Systems and Energy Efficiency Development.

Figure 3: Performance in RSI Sub-indicators

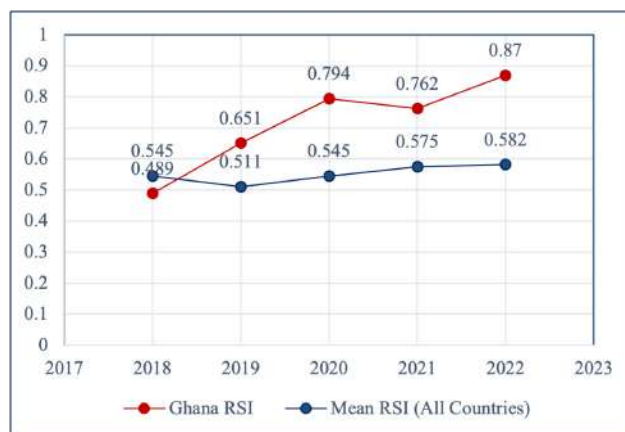
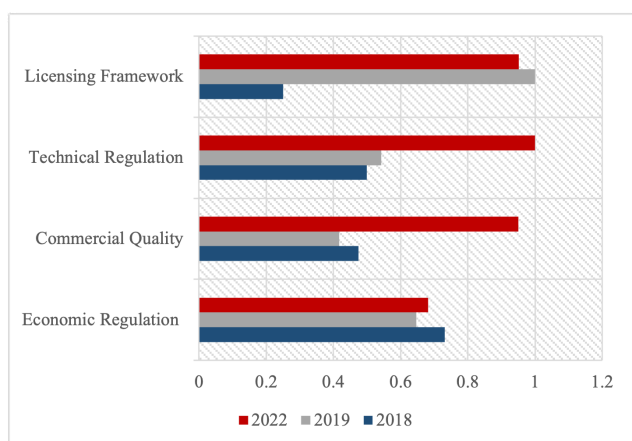


Figure 3 shows that, Ghana’s performance in terms of RSI, has tremendously improved over the review period with only a slight dip in 2021. In 2018, Ghana was in the red zone classified as “Low level of regulatory development”. However, by 2022, the country had improved its rating to the green zone classified as “High level of regulatory development: Most of the elements of a strong policy, regulatory, legal and institutional framework are in place”. Figure 3 above indicates that, aside 2018, Ghana has consistently performed above the overall RSI mean for all 43 participating countries. According to the ERI reports, key to the enhancement in the country’s performance is the development of a detailed tariff methodology in 2019 as part of the concession arrangements to introduce private sector participation in electricity distribution.

Performance trends in key RSI sub indicators

Figure 4.0 below, presents the general performance of Ghana under some of the key sub-indicators of RSI. All indicators pointed to an improved performance over the review period.

Figure 4: Ghana’s Performance in RSI Sub-indicators



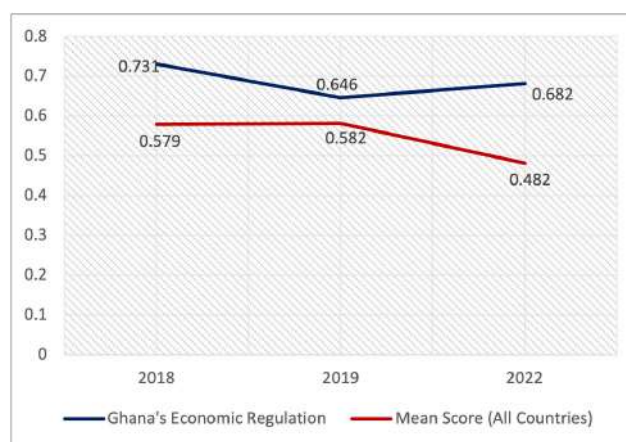
• Economic Regulation

Economic regulation is regarded as the “heartbeat of the electricity sector”, which plays a critical role in sustaining the electricity sector. This assessment of a country is based on the regulator’s ability to develop

a comprehensive tariff guide, which makes provision for a transparent and credible process for major and minor tariff reviews.

Ghana’s performance under this indicator shows a downward trajectory with a slight improvement in 2022. As shown in figure 5.0, the country was scored 0.731 in 2018 on economic regulation, which fell to 0.646 in 2019 and slightly went up to 0.682 in 2022. Generally, this indicator shows a downward trajectory among all participating countries.

Figure 5: Ghana's Performance in Economic Regulation against the Mean Score for all Participating Countries

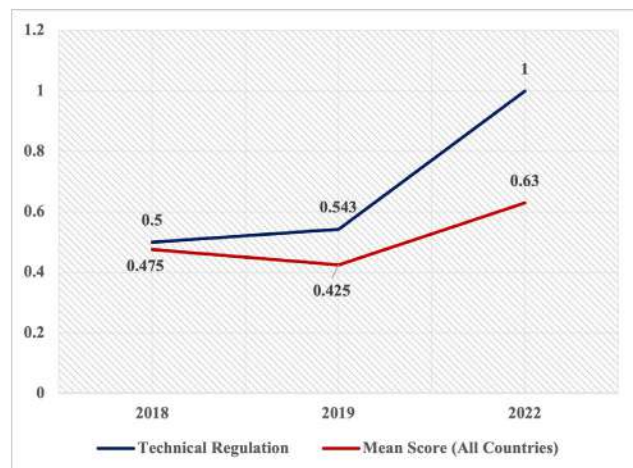


It can be observed from Figure 5 that, although this indicator deteriorated and gradually picked up, Ghana’s performance in all years was still above the overall average for all participating countries. This is largely attributed to the country’s development of a detailed tariff methodology in 2019 as part of the concession arrangements to introduce private sector participation in electricity distribution. According to the 2021 ERI report, the major cause of the downward trend of Economic Regulation among the participating countries including Ghana is non-robustness of the tariff methodology. Although many countries have developed tariff methodologies, many of these methodologies do not have all the requisite attributes of best practices such as tariff indexation and automatic adjustments, schedules for major tariff reviews, and documented formulae for calculating end-user tariffs.

• Technical Regulation

The technical regulation indicator assesses whether the regulator has defined standards for the following: technical and commercial quality of service; frequency and duration of outages; time for the provision of grid

Figure 6: Performance in Technical Regulation against mean score



connection and restoration of supply; conditions and technical requirements for grid connection; the grid code for interconnected power systems and codes for the distribution system.

Ghana's performance under this indicator has been a tremendous upward trajectory; from the lowest level of the yellow rated zone in 2018 to the top-most part of the green rated zone in 2022. The country has performed above the average score for all participating countries in this indicator. Generally, technical regulation is on an upward trend among all participating countries. Participating countries are beginning to develop transmission and distribution grid codes, as well as quality-of-service regulations/codes and are carrying out assessment of quality-of-service performance indicators for regulated utilities.

• Licensing Framework

This indicator assesses how regulators streamline activities of various actors in the electricity sector by developing simplified frameworks for electricity investment. This involves how transparent regulators are with procedures that guide the processes investors require to acquire licenses to participate in the electricity sector.

Figure 7: Performance in Licensing framework

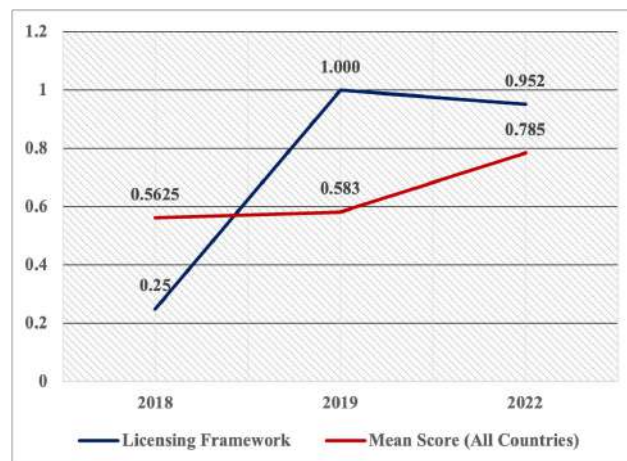


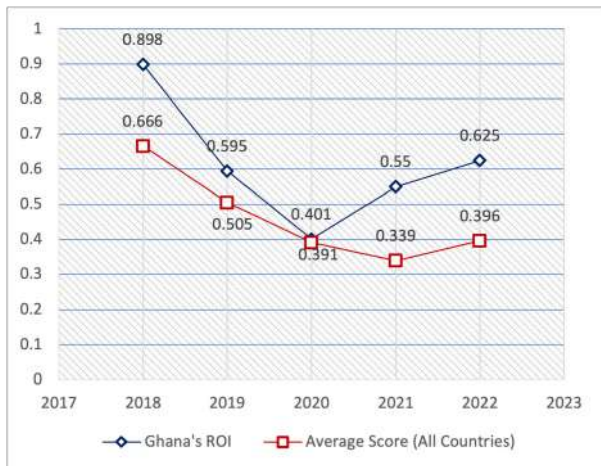
Figure 7.0 shows the trend of Ghana's performance regarding licensing framework over the period 2018 through 2022. In 2018, Ghana was within the red zone, scoring 0.25, far below the overall average score of 0.563. However, in 2019, the country experienced an increase from the red zone to the upper limit in the green zone, far beyond the average score of 0.583. This improvement was reversed in 2022, when the country's performance in licensing dropped marginally to 0.952, from the value of 1.0 in 2019. Generally, the performance of participating countries under the licensing indicator has been on an upward trajectory. ERI attributes this progress to more countries developing and publishing transparent procedures, which serves as a guide to investors in the acquisition of requisite licenses to enter the power sector

iii. Trends in Regulatory Outcome Index (ROI)

The regulatory outcome index for utilities is an assessment of how the actions and decisions of regulators, impact the regulated utilities and the entire sector. This indicator consists of three sub-indicators; financial performance and competitiveness, quality of service delivery (commercial and technical) and facilitating electricity access. The financial performance and competitiveness indicator is based on the cost of service and operational inefficiencies of the utility service provider. Generally, financial performance and competitiveness of utilities is a major contributor to the downward trajectory of the overall ROI.

The assessment of ROI is purely based on the perspective of utilities on the mandate of the regulator and the regulatory structure. It examines the outcome of regulatory actions from the perspective of distribution utilities and consumers. The overall ROI is determined by taking the average ROI score for utilities and that of consumers.

Figure 8: Performance in ROI

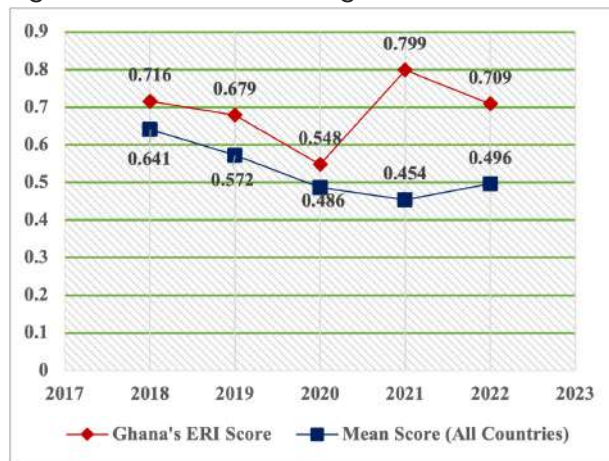


Ghana's performance under this indicator has not been very encouraging as the country's score declined from 0.898 in 2018 (Green Zone) to 0.401 (Red Zone) in 2020, before recovering marginally to 0.55 in 2021 and to 0.625 in 2022 (Yellow Zone). For the period under review, this performance, remained above the average score for all participating countries. Figure 8 shows a downward trend for the average score of ROI over the period. The ERI reports attribute this trend to the poor financial health of the utilities and the level of sector debt. Given that, most regulators are unable to effectively implement provisions in their tariff methodologies, these tariffs are not cost-reflective, which deprives utilities of the needed operating funds.

iv. Trends in Electricity Regulatory Index (ERI)

ERI is the composite index that measures the level of development of electricity sector regulatory frameworks. The ERI is constructed from the indicators of Regulatory Governance, Regulatory Substance and Regulatory Outcome. The RGI and RSI jointly measure the effectiveness of a regulatory climate in a country that supports electricity sector reforms, promote efficiency, while attaining the ultimate goals of the country.

Figure 9: Ghana's ERI score against mean score



From figure 9, Ghana's performance on the ERI score has been above average for each year over the period under review. Ghana started on a moderately high score of 0.716 in 2018, but declined to 0.679 in 2019 and to 0.548 in 2020, before recovering to 0.799 in 2021 and marginally declining again to 0.709 in 2022.

Figure 10: Ghana's ranking in ERI for Africa



Figure 10 presents the ERI ranking of Ghana over the years (2018 – 2022). With a score of 0.716 in 2018, Ghana ranked 6th out of 15 participating countries on the ERI ladder but declined to 10th position, with a score of 0.679 out of 36 countries and further declining to 16th position with a score of 0.548 in 2020. The country however recovered to score 0.799 falling within the Green zone and ranking 7th in 2021 on the ERI ladder.

5. Shortfalls and Ups in Ghana's Regulatory Sector

Figure 11 presents a list of actions that have been undertaken in Ghana to improve on the country's performance. Some of these actions are decisions implemented over the period (2018 – 2022).

Figure 11: Ups in Ghana's regulatory sector (2018-2022)

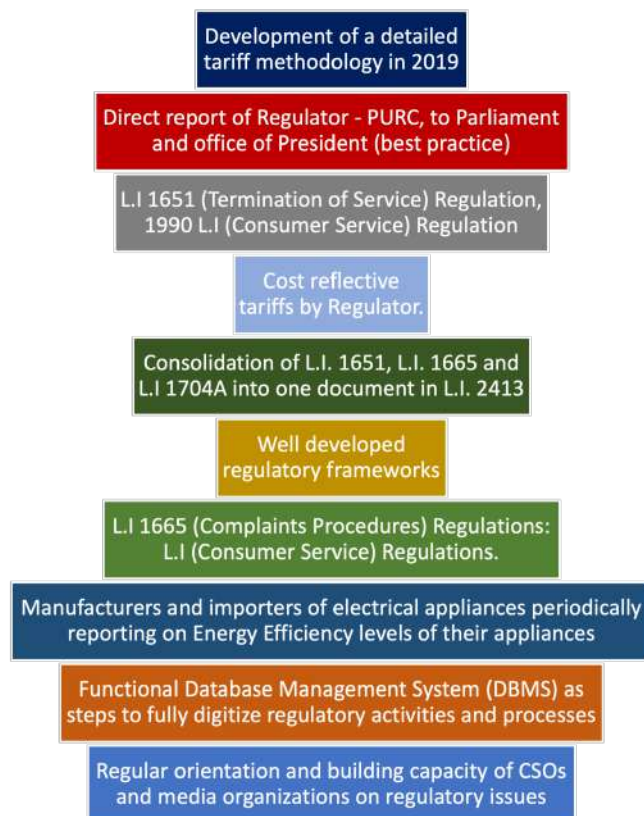
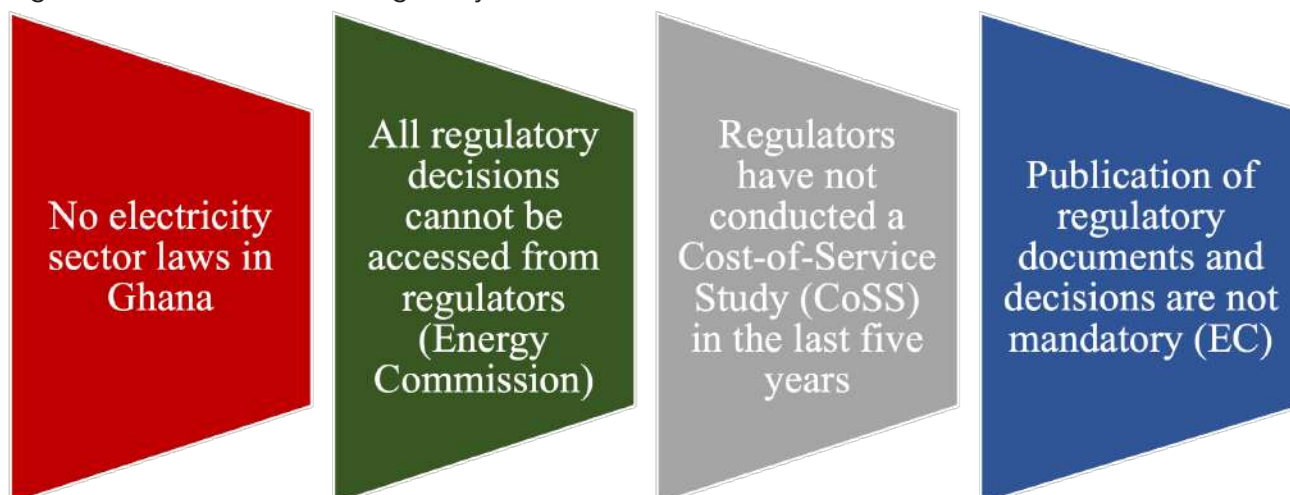


Figure 12 presents a list of shortfalls that have caused Ghana's ranking to decline over the years.

Figure 12: Shortfalls in Ghana's regulatory sector



6. Comparative Findings with the Top Performing Country

This section compares Ghana with the top performing country in the 2022 ERI for Africa. According to the 2022 ERI report, Uganda has maintained the 1st position since the inception of the ERI in 2018. This section seeks to leverage on some best practices from Uganda to enable Ghana improve on its position in the next ERI ranking. Under this section, we compare some of the key indicators used for the determination of the ERI.

Figure 13: Ghana’s performance in ROI against the best performing country (Uganda)

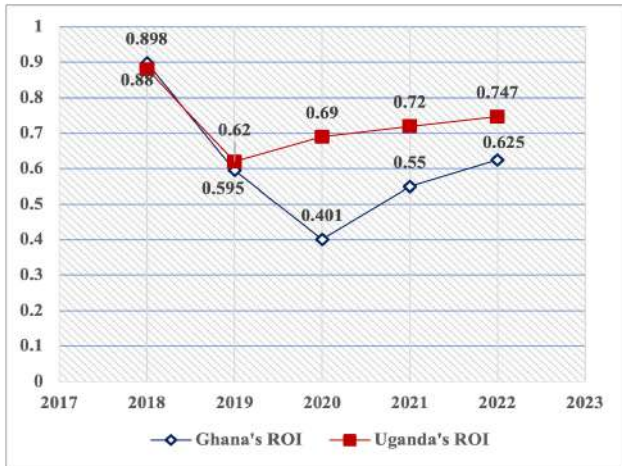


Figure 13 compares ROI for Ghana and Uganda from 2018 to 2022. On the measure of ROI, Ghana performed marginally better than Uganda in 2018 with both countries declining in 2019. Ghana however dropped more points to 0.595 compared to Uganda at 0.62. In 2020, Uganda improved its value to 0.69 and maintained an upward trajectory to 0.747 in 2022. On the other hand, Ghana declined to the red zone with a score of 0.401 before recovering to a value of 0.55 in 2021 and subsequently to 0.625 in 2022. According to the 2022 ERI report, Uganda’s 2018–2019 decline was as a result of “revenue requirements for licensed utilities and Capital Expenditure (CapEx) reconciliations from the regulated asset base”. The necessary measures put in place by Ghana to tackle the above challenge resulted in the subsequent gradual improvement in the ROI.

Figure 14: Ghana’s performance in RGI against the best performing country (Uganda)

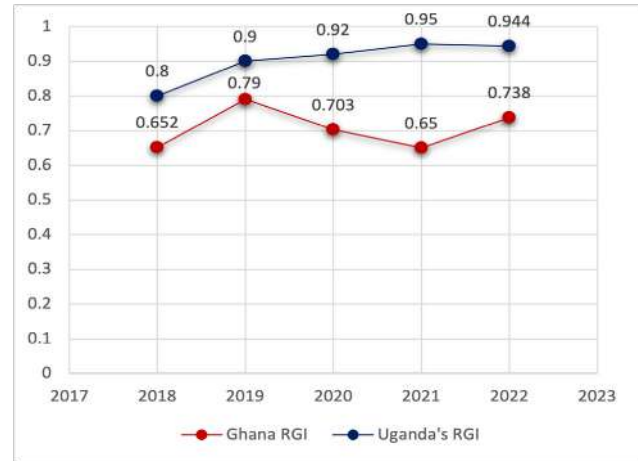


Figure 14 gives a graphical presentation of the performance of Ghana and Uganda under the RGI indicator. The chart shows the gap that exists between the two countries with regard to the eight sub-indicators used to measure the RGI. While the RGI for Uganda shows a constant improvement, Ghana’s RGI depicts an unstable trend over the period. Uganda achieved this upward trend following the country’s development of eight new regulations and instruments used to regulate operations of the electricity sector.

Figure 15: Ghana’s performance in RSI against the best performing country (Uganda)

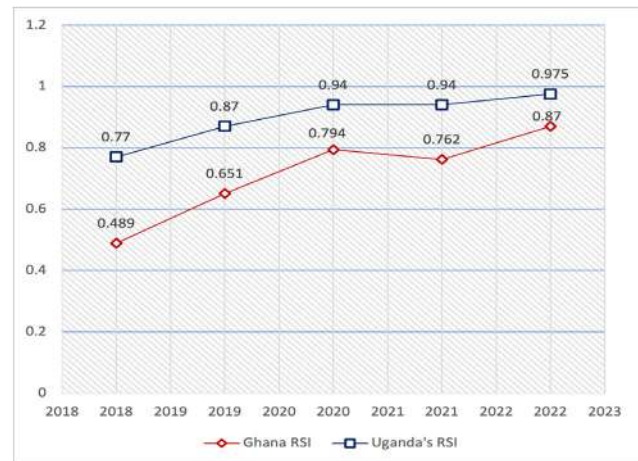


Figure 15 compares the performance of Ghana and Uganda on the Regulatory Substance Index (RSI) for the period 2018 – 2022. In both instances, there has been a constant upward trend of RSI for both countries although Ghana’s performance was still below that of Uganda over the period. Uganda started off from the high points of 0.77 in

2018 and rose gradually to 0.975 in 2022, while Ghana started from a low point of 0.489 and rose gradually to a score of 0.87 in 2022. According to the ERI report, Uganda's RSI high score emanates from the fact that it is the only African country that regularly publishes updates of the tariffs of all of its generation units, underscoring its transparency.

7. Recommendation

The paper earlier highlighted some shortfalls of Ghana, which have resulted in low scoring points over the years. There is the need to take necessary steps towards changing the status of these shortfalls in order to further enhance the rank of the country. Subsequently, the following are recommended for necessary action;

- Deliberate and urgent steps should be taken towards ensuring that all regulatory decisions are accessible through online portals and physical engagements
- Regulators (PURC & EC) should make an effort to conduct a Cost-of-Service Study (CoSS).
- There should be synergy between the licensing framework and tariff setting.
- Steps should be taken to develop an electricity sector law for the country.

- Ghana should endeavour to regularly publish updates of the tariffs in order to underscore transparency.
- There should be a cooling off period for key staff of utility companies who would want to work with the regulator and vice versa.
- Members of the Regulatory Boards should be given fixed tenures of office, renewable once. Commencement and expiry dates of appointments for Board members should differ. This will at all times, ensure institutional memory on the Board

8. References

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