

## Regulatory Indicators for Sustainable Energy (RISE) 2016 Country Data - Ghana

### Energy Access

Indicator	Score
Existence and monitoring of officially approved electrification plan	80
Scope of officially approved electrification plan	50
Framework for grid electrification	33.33
Framework for minigrids	30
Framework for stand-alone systems	93.33
Consumer affordability of electricity	100
Utility Transparency and Monitoring	99.99
Utility Creditworthiness	14.29
<b>Total</b>	<b>62.62</b>

### Energy Efficiency

Indicator	Score
National energy efficiency planning	75
Energy efficiency entities	85.71
Information provided to consumers about electricity usage	47.92
EE incentives from electricity rate structures	66.67
Incentives & mandates: large consumers	66.67
Incentives & mandates: public sector	25
Incentives & mandates: utilities	25
Financing mechanisms for energy efficiency	0
Minimum energy efficiency performance standards	50
Energy labeling systems	50
Building energy codes	0
Carbon Pricing	0
<b>Total</b>	<b>41</b>

## Regulatory Indicators for Sustainable Energy (RISE)

### Renewable Energy

Indicator	Score
Legal framework for renewable energy	100
Planning for renewable energy expansion	28
Incentives and regulatory support for renewable energy	50
Attributes of financial and regulatory incentives	78
Network connection and pricing	92
Counterparty risk	71
Carbon pricing and monitoring	0
<b>Total</b>	<b>59.86</b>
<b>Overall Score</b>	<b>54.49</b>

### Energy Access

Existence and monitoring of officially approved electrification plan	Score	80
Is there an officially approved national electrification plan?		Yes
If not, is there a draft electrification plan that has been prepared but not yet been approved?		No
Name of the electrification plan		Ghana Sustainable Energy for All Action Plan
Are the electrification plan and the updates publicly available?		No
When was the last update of the electrification plan?		2010
Is there an institution responsible for tracking progress of the plan?		Yes
Name of the tracking institution		Ministry of Energy

## Regulatory Indicators for Sustainable Energy (RISE)

Is there a timeframe defined in the electrification plan?	Yes
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Scope of officially approved electrification plan	Score	50
Does the plan target a service level (e.g., power availability, number of guaranteed hours of power supply, etc.)?		No
Details on service level target		0
Does the electrification plan include both grid and off-grid?		Yes
Does the plan include community facilities?		Yes
Does the plan include productive use?		Yes
Are there geospatial maps conveying the timeframe of planned grid extension?		No
Are these geospatial maps made publicly available?		No

Framework for grid electrification	Score	33.33
Does the government have a dedicated funding line or budget for electrification (e.g., funded national program, budget item, rural electrification fund to finance grid extension)?		Yes
Are there capital subsidies paid to the utilities to provide distribution systems to rural areas/villages?		Yes
Details on funding support for grid electrification		Ghana Sustainable Energy for All Action Plan
Are there consumer financing mechanisms (i.e., utility loans, on bill financing, micro-loans, etc.) and/or direct subsidies available to support the payment of connection fees by consumers?		No
Details on mechanisms to support the payment of connection fees		0

## Regulatory Indicators for Sustainable Energy (RISE)

Does the government specify standards of performance on reliability along with new connections (e.g., number of guaranteed hours per day, etc.)?	No
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Framework for minigrids	Score	30
Are minigrids legally allowed to operate in the country?	No	
Name and date of the regulation for minigrids	0	
Can minigrids be owned and operated by private operators?	Yes	
Do regulations clarify what will occur when the interconnected grid reaches a mini-grid?	No	
To convert from a power producer to a power distributor that buys electricity from the interconnected grid and resells to its local customers	No	
To sell electricity to the interconnected grid operator and no longer sell electricity to retail customers	No	
To sell its distribution grid to the interconnected grid operator and receive compensation for the sale of the asset	No	
Other	No	
Do the regulations detail procedures for consumers to get connected to minigrids?	No	
Do the regulations differ by size of minigrids?	No	
Are mini-grid operators legally allowed to charge a different tariff from the national tariff?	Yes	
Is there a retail electricity tariff schedule for minigrids?	No	
Examples of minigrid tariffs	There isn't any mini-grid operating now. Government is	

## Regulatory Indicators for Sustainable Energy (RISE)

	supporting the construction of new ones.
Name of the regulation on minigrid tariffs	0
Are there publicly funded mechanisms to secure viability gap funding for operators?	No
Do subsidies exist for minigrids?	No
Details on subsidies for minigrids	0
Name of the document referring to minigrid subsidies	0
Do subsidies exist for power generators?	No
Do subsidies exist for energy storage systems?	No
Do subsidies exist for distribution systems?	No
Do subsidies exist for monitoring systems?	No
Do subsidies exist for other equipment related to minigrids?	No
Do duty exemptions exist for minigrid systems?	No
Details on duty exemptions for minigrids	0
Name of the document referring to mini-grid duty exemptions	0
Do duty exemptions exist for power generators?	No
Do duty exemptions exist for energy storage systems?	No
Do duty exemptions exist for distribution systems?	No
Do duty exemptions exist for monitoring systems?	No
Do duty exemptions exist for other equipment related to minigrids?	No

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Do subsidies exist for stand-alone systems?	No
Do subsidies exist for solar modules?	No
Do subsidies exist for batteries?	No
Do subsidies exist for charge controllers?	No
Do subsidies exist for power conditioning equipment?	No
Do subsidies exist for safety equipment?	No
Do subsidies exist for other equipment related to stand-alone systems?	No
Details on subsidies for stand-alone systems	0
Name of the document referring to subsidies for stand-alone systems	0
Do duty exemptions exist for stand-alone systems?	No
Details on duty exemptions for stand-alone systems	100% duty exemption on solar modules
Name of the document referring to duty exemptions for stand-alone systems	0
Do duty exemptions exist for solar modules?	Yes
Do duty exemptions exist for batteries?	No
Do duty exemptions exist for charge controllers?	No
Do duty exemptions exist for power conditioning equipment?	No
Do duty exemptions exist for safety equipment?	No
Do duty exemptions exist for other equipment related to stand-alone systems?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Are there legal restrictions that limit the prices standalone home system retailers or service providers can charge?	No
Are there specific financing facilities available to support operators/consumers to develop/purchase stand-alone home systems?	Yes
Are there specific market financing facilities available to support operators to develop stand-alone systems?	No
Are there specific government financing facilities available to support operators to develop stand-alone systems?	No
Are there specific market financing facilities available to support consumers to purchase stand-alone standalone systems?	Yes
Are there specific government financing facilities available to support consumers to purchase stand-alone standalone systems?	No
Are there technical standards detailing the requirements for minigrids to connect the grid?	No
Are technical standards made publicly available?	No
Name of the document detailing technical standards	0
Are there safety standards for minigrids?	No
Are these safety standards made publicly available?	No
Name of the document detailing safety standards	0
Does the government implement certification programs for minigrid installers?	No
Does the government provide or endorse certification programs for one or more components or equipment required for minigrids?	No
Has the government adopted international quality standards for stand-alone systems?	Yes

## Regulatory Indicators for Sustainable Energy (RISE)

Name of the document detailing quality standards	0
Has the government adopted international testing methods?	Yes
Does the regulation accept testing done elsewhere/in another country (vs in-country testing required)?	Yes
Is there a governmental certified program for solar equipment installers?	Yes
Are there environmental regulations on the disposal of solar devices and standalone home system products or components?	No
Name of document detailing environmental regulations	0

<b>Framework for stand-alone systems</b>	<b>Score</b>	<b>93.33</b>
Are there publicly funded mechanisms to secure viability gap funding for operators?	No	
Do subsidies exist for minigrids?	No	
Details on subsidies for minigrids	0	
Name of the document referring to minigrid subsidies	0	
Do subsidies exist for power generators?	No	
Do subsidies exist for energy storage systems?	No	
Do subsidies exist for distribution systems?	No	
Do subsidies exist for monitoring systems?	No	
Do subsidies exist for other equipment related to minigrids?	No	
Do duty exemptions exist for minigrid systems?	No	



## Regulatory Indicators for Sustainable Energy (RISE)

Details on duty exemptions for minigrids	0
Name of the document referring to mini-grid duty exemptions	0
Do duty exemptions exist for power generators?	No
Do duty exemptions exist for energy storage systems?	No
Do duty exemptions exist for distribution systems?	No
Do duty exemptions exist for monitoring systems?	No
Do duty exemptions exist for other equipment related to minigrids?	No
Do subsidies exist for stand-alone systems?	No
Do subsidies exist for solar modules?	No
Do subsidies exist for batteries?	No
Do subsidies exist for charge controllers?	No
Do subsidies exist for power conditioning equipment?	No
Do subsidies exist for safety equipment?	No
Do subsidies exist for other equipment related to stand-alone systems?	No
Details on subsidies for stand-alone systems	0
Name of the document referring to subsidies for stand-alone systems	0
Do duty exemptions exist for stand-alone systems?	No
Details on duty exemptions for stand-alone systems	100% duty exemption on solar modules

## Regulatory Indicators for Sustainable Energy (RISE)

Name of the document referring to duty exemptions for stand-alone systems	0
Do duty exemptions exist for solar modules?	Yes
Do duty exemptions exist for batteries?	No
Do duty exemptions exist for charge controllers?	No
Do duty exemptions exist for power conditioning equipment?	No
Do duty exemptions exist for safety equipment?	No
Do duty exemptions exist for other equipment related to stand-alone systems?	No
Are there legal restrictions that limit the prices standalone home system retailers or service providers can charge?	No
Are there specific financing facilities available to support operators/consumers to develop/purchase stand-alone home systems?	Yes
Are there specific market financing facilities available to support operators to develop stand-alone systems?	No
Are there specific government financing facilities available to support operators to develop stand-alone systems?	No
Are there specific market financing facilities available to support consumers to purchase stand-alone standalone systems?	Yes
Are there specific government financing facilities available to support consumers to purchase stand-alone standalone systems?	No
Are there technical standards detailing the requirements for minigrids to connect the grid?	No
Are technical standards made publicly available?	No
Name of the document detailing technical standards	0

## Regulatory Indicators for Sustainable Energy (RISE)

Are there safety standards for minigrids?	No
Are these safety standards made publicly available?	No
Name of the document detailing safety standards	0
Does the government implement certification programs for minigrid installers?	No
Does the government provide or endorse certification programs for one or more components or equipment required for minigrids?	No
Has the government adopted international quality standards for stand-alone systems?	Yes
Name of the document detailing quality standards	0
Has the government adopted international testing methods?	Yes
Does the regulation accept testing done elsewhere/in another country (vs in-country testing required)?	Yes
Is there a governmental certified program for solar equipment installers?	Yes
Are there environmental regulations on the disposal of solar devices and standalone home system products or components?	No
Name of document detailing environmental regulations	0
Are there national programs which aim to develop stand-alone systems or support the development of stand-alone systems?	Yes
Details on the national program promoting stand-alone systems	Latest program '200,000 Rooftop Solar Programme'

**Consumer affordability of electricity**

**Score**

**100**

## Regulatory Indicators for Sustainable Energy (RISE)

What is the annual cost of subsistence consumption (30kWh/month) as a percentage of GNI per household of bottom 20 percent of population?	3.18736171570232%
Tariff schedule / tariff structure taken into account	Public Utilities Regulatory Commission Act #538, June 2015
Is there a mechanism to support low-volume consumers such as cross-subsidization, social or lifeline tariff?	Yes

<b>Utility Transparency and Monitoring</b>	<b>Score</b>	<b>99.99</b>
Are the financial statements of the largest generation company publicly available?		Yes
Are the financial statements of the largest transmission company publicly available?		Yes
Are the financial statements of the largest distribution company publicly available?		Yes
Are the financial statements of the largest retail electricity sales company publicly available?		Yes
Are the financial statements of the largest generation company audited?		Yes
Are the financial statements of the largest transmission company audited?		Yes
Are the financial statements of the largest distribution company audited?		Yes
Are the financial statements of the largest retail electricity sales company audited?		Yes
Is the transmission loss rate published in a primary official document (by the utility, regulator or ministry and/or government)?		Yes

## Regulatory Indicators for Sustainable Energy (RISE)

Is the distribution loss rate published in a primary official document (by the utility, regulator or ministry and/or government)?	Yes
Is the bill collection rate published in a primary official document (by the utility, regulator or ministry and/or government)?	Yes
Is the amount of electricity available for sale to end-users published in a primary official document (by the utility, regulator or ministry and/or government)?	Yes
Is the utility operating an incidence/outage recording system (or SCADA/EMS with such functionality)?	Yes
Is the utility measuring the SAIDI and SAIFI or any other measurements for service reliability?	Yes
Are the measurements reported to the regulatory body?	Yes
Are the measurements available to public?	Yes

<b>Utility Creditworthiness</b>	<b>Score</b>	<b>14.29</b>
Current ratio (working capital ratio) of selected utility	0	
EBITDA margin of selected utility	14.29	
Debt service coverage ratio of selected utility	0	
Days payable outstanding of selected utility	0	

## Energy Efficiency

<b>National energy efficiency planning</b>	<b>Score</b>	<b>75</b>
Is there legislation or a national action plan that aims to increase EE?	Yes	

## Regulatory Indicators for Sustainable Energy (RISE)

Name of EE legislation or action plan	Law n° 99-9 of 15 Rabie Ethani 142 corresponding to the 28 July 1999 related to energy conservation
Is there an energy efficiency goal or target at the national level?	Yes
Natonal target details	10% savings in electricity consumption
Is there a target for the residential sector?	No
Target details	0
Does the target have a milestone or deadline?	No
Is there a commercial servcies sector target?	No
Target details	0
Does the target have a milestone or deadline?	No
Is there an industrial sector target?	No
Target details	0
Does the target have a milestone or deadline?	No
Is there a power sector target?	Yes
Target details	10% savings in electricity consumption
Does the target have a milestone or deadline?	No

Energy efficiency entities	Score	85.71
Are there governmental and/or independent bodies dedicated to		Yes

## Regulatory Indicators for Sustainable Energy (RISE)

setting EE strategy?	
Name of entity	Energy Commission / Ghana Standards Authority
Are there governmental and/or independent bodies dedicated to setting EE standards?	Yes
Name of entity	Energy Commission / Ghana Standards Authority
Are there governmental and/or independent bodies dedicated to regulating EE activities of energy suppliers?	Yes
Name of entity	Energy Commission / Ghana Standards Authority
Are there governmental and/or independent bodies dedicated to regulating EE activities of energy consumers?	Yes
Name of entity	Energy Commission / Ghana Standards Authority
Are there governmental and/or independent bodies dedicated to certifying compliance with equipment EE standards?	Yes
Name of entity	Energy Commission / Ghana Standards Authority
Are there governmental and/or independent bodies dedicated to certifying compliance with building EE standards?	Yes
Name of entity	Energy Commission / Ghana Standards Authority
Are there governmental and/or independent bodies dedicated to selecting and/or approving third party auditors tasked with certifying EE standards?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Name of entity	0
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Information provided to consumers about electricity usage	Score	47.92
Residential customers		
Is it mandatory for utilities to provide reports of their energy usage, in a bill or by other means?	Yes	
Commercial customers		
Is it mandatory for utilities to provide reports of their energy usage, in a bill or by other means?	Yes	
Industrial customers		
Is it mandatory for utilities to provide reports of their energy usage, in a bill or by other means?	Yes	
Residential customers		
At what intervals do customers receive these reports (times per year)?	12	
Do the reports include the price levels customers pay for energy usage?	Yes	
Commercial customers		
At what intervals do customers receive these reports (times per year)?	12	
Do the reports include the price levels customers pay for energy usage?	Yes	
Industrial customers		
At what intervals do customers receive these reports (times per year)?	12	



## Regulatory Indicators for Sustainable Energy (RISE)

Do the reports include the price levels customers pay for energy usage?	Yes
Does the regulator track utilities' compliance with laws for providing energy usage information to customers?	No
Residential customers	
Do customers receive a bill or report which compares them to other users in the same region and/or usage class?	No
Method of comparison	N/A
Commercial customers	
Do customers receive a bill or report which compares them to other users in the same region and/or usage class?	No
Method of comparison	N/A
Industrial customers	
Do customers receive a bill or report which compares them to other users in the same region and/or usage class?	No
Method of comparison	N/A
Residential customers	
Do customers receive a bill or report that shows their energy usage compared to previous bills or reports over time?	No
Commercial customers	
Do customers receive a bill or report that shows their energy usage compared to previous bills or reports over time?	No
Industrial customers	
Do customers receive a bill or report that shows their energy usage compared to previous bills or reports over time?	No

## Regulatory Indicators for Sustainable Energy (RISE)

All customers	
Can customers access real time feedback on energy usage (for either prepaid or post-paid systems)?	Yes
Do customers have the ability to manage energy usage levels remotely (through apps or other technology mediums that can track real time usage)?	No

<b>EE incentives from electricity rate structures</b>	<b>Score</b>	<b>66.67</b>
Residential customers		
Are customers charged a flat fee (per connection)?	No	
Are customers charged constant block rates?	No	
Are customers charged declining block rates?	No	
Are customers charged increasing block rates?	Yes	
Commercial customers		
Are customers charged a flat fee (per connection)?	No	
Are customers charged constant block rates?	No	
Are customers charged declining block rates?	No	
Are customers charged increasing block rates?	Yes	
Industrial customers		
Are customers charged a flat fee (per connection)?	No	
Are customers charged constant block rates?	Yes	
Are customers charged declining block rates?	No	

## Regulatory Indicators for Sustainable Energy (RISE)

Are customers charged increasing block rates?	Yes
Residential customers	
Do customers pay energy charges (per kWh)?	Yes
Do customers pay demand charges (per kW)?	Yes
Do customers pay reactive power charges (per kVAR)?	Yes
Commercial customers	
Do customers pay energy charges (per kWh)?	Yes
Do customers pay demand charges (per kW)?	Yes
Do customers pay reactive power charges (per kVAR)?	Yes
Industrial customers	
Do customers pay energy charges (per kWh)?	Yes
Do customers pay demand charges (per kW)?	Yes
Do customers pay reactive power charges (per kVAR)?	Yes
Residential customers	
Are customers charged based on real-time pricing?	No
Are customers charged based on variable peak pricing?	No
Are customers charged based on critical peak pricing?	No
Are tariffs adjusted according to seasons?	No
Do customers pay according to time-of-day electricity use or receive peak-time rebates?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Commercial customers	
Are customers charged based on real-time pricing?	No
Are customers charged based on variable peak pricing?	No
Are customers charged based on critical peak pricing?	No
Are tariffs adjusted according to seasons?	No
Do customers pay according to time-of-day electricity use or receive peak-time rebates?	No
Industrial customers	
Are customers charged based on real-time pricing?	No
Are customers charged based on variable peak pricing?	No
Are customers charged based on critical peak pricing?	No
Are tariffs adjusted according to seasons?	No
Do customers pay according to time-of-day electricity use or receive peak-time rebates?	No

Incentives & mandates: large consumers	Score	66.67
What is the threshold for classifying large consumers?		Bulk customers (consumption of 6 GWh/year)
Large consumer EE mandate/incentive regulations		
Is it required for the consumption and/or savings of large-scale energy users to be tracked and documented on a regular basis?		Yes
Are efficiency targets mandated for large consumers?		Yes

## Regulatory Indicators for Sustainable Energy (RISE)

Details	Power factor should be at least 0.9
Are energy audits mandated for large consumers?	No
Are energy efficiency progress reports mandated for large consumers?	No
Interval of reports	0
Are energy-management systems mandated for large consumers?	No
Details	0
Are there penalties in place for non-compliance with regulatory obligations for large consumers?	Yes
Is there a measurement and verification program in place?	Yes
Is verification done by a third party?	No
Are there financial incentives for large consumers to invest in energy efficiency?	Yes
Details	Non-payment of power factor surge
Are there tax incentives for large consumers to invest in energy efficiency?	No
Are there other incentives for large consumers to invest in energy efficiency?	No
Details	0
Is there a program to publicly recognize large-scale users that have achieved significant energy savings measures?	No
Are energy savings and/or financial savings publicized?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Does the program offer assistance (from a government or independent entity) to large-scale users to identify energy savings investments opportunities?	No
Primary Energy Consumption (MJ - latest GTF data from 2012)	424144.07

<b>Incentives &amp; mandates: public sector</b>	<b>Score</b>	<b>25</b>
Are there binding energy savings obligations for public buildings?	No	
Are energy savings from efficiency activities at public buildings tracked (either in-house or by a third party)?	No	
Are there binding energy savings obligations for other public facilities (may include water supply, wastewater services, municipal solid waste, street lighting, transportation, and heat supply)?	No	
Are energy savings from efficiency activities at other public facilities tracked?	No	
Is there a specific policy or mandated guidelines for public procurement of energy-efficient products and services?	Yes	
Public procurement guidelines for EE		
Do public budgeting regulations and practices allow public entities to retain energy savings?	No	
Public budgeting regulations for EE		

<b>Incentives &amp; mandates: utilities</b>	<b>Score</b>	<b>25</b>
Name of utility energy efficiency regulation program		
Electricity generation		

## Regulatory Indicators for Sustainable Energy (RISE)

Are utilities required to carry out energy efficiency activities in this area?	Yes
Details	heat rate of 111 kJ/kWh for simple cycle plants and 86 for combined cycle plants
Are energy savings or other target indicators measured to track performance in meeting EE requirements?	Yes
Are the requirements measured/validated by an independent third party?	No
Are there penalties in place for non-compliance with EE requirements?	Yes
Are there mandates or incentives for new and/or brownfield co-generation?	No
Transmission & distribution	
Are utilities required to carry out energy efficiency activities in this area?	Yes
Details	Maximum 3.5% losses for transmission
Are energy savings or other target indicators measured to track performance in meeting EE requirements?	Yes
Are the requirements measured/validated by an independent third party?	No
Are there penalties in place for non-compliance with EE requirements?	Yes
Demand-side management -	
Are utilities required to carry out energy efficiency activities in this area?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Details	0
Are energy savings or other target indicators measured to track performance in meeting EE requirements?	No
Are the requirements measured/validated by an independent third party?	No
Are there penalties in place for non-compliance with EE requirements?	No
Is there a demand-side management department within the selected utility?	No
Do utilities provide customers incentives for demand response, such as peak-time rebates?	No
Is there public budget funding available for utilities to recover costs associated with or revenue lost from mandated energy efficiency activities?	No
Is there compensation for revenue losses via a tracking account available for utilities to recover costs associated with or revenue lost from mandated energy efficiency activities?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Are there credit lines available for utilities to recover costs associated with or revenue lost from mandated energy efficiency activities?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No



## Regulatory Indicators for Sustainable Energy (RISE)

Are there partial risk guarantees available for utilities to recover costs associated with or revenue lost from mandated energy efficiency activities?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Is there program cost recovery available for utilities to recover costs associated with or revenue lost from mandated energy efficiency activities?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Is there ESCO financing available for utilities to recover costs associated with or revenue lost from mandated energy efficiency activities?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Is there on-bill financing/re-payment available for utilities to recover costs associated with or revenue lost from mandated energy efficiency activities?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Are there any other financing mechanisms available for utilities to recover costs associated with or revenue lost from mandated energy efficiency activities?	0
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No

<b>Financing mechanisms for energy efficiency</b>	<b>Score</b>	<b>0</b>
Residential sector		
Are there tax incentives available for energy efficiency investments?		No
Are there discounted "green" mortgages available for energy efficiency investments?		No
Is on-bill financing/re-payment available for energy efficiency investments?		No
Are credit lines available for energy efficiency investments?		No
Are energy services agreements or ESCOs available for energy efficiency investments?		No
Are green bonds available for energy efficiency investments?		No
Is vendor credit and/or leasing available for energy efficiency investments?		No
Are partial risk guarantees available for energy efficiency investments?		No
Are there any other financing mechanisms available for energy efficiency investments?		No

## Regulatory Indicators for Sustainable Energy (RISE)

Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
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Are these available as government-driven financing mechanisms?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Details	
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Commercial services sector	
Are there tax incentives available for energy efficiency investments?	No
Are there discounted "green" mortgages available for energy efficiency investments?	No
Is on-bill financing/re-payment available for energy efficiency investments?	No
Are credit lines available for energy efficiency investments?	No
Are energy services agreements or ESCOs available for energy efficiency investments?	No
Are green bonds available for energy efficiency investments?	No
Is vendor credit and/or leasing available for energy efficiency investments?	No
Are partial risk guarantees available for energy efficiency investments?	No
Are there any other financing mechanisms available for energy efficiency investments?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
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Are these available as government-driven financing mechanisms?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Details	
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Industrial sector	
Are there tax incentives available for energy efficiency investments?	No
Are there discounted "green" mortgages available for energy efficiency investments?	No
Is on-bill financing/re-payment available for energy efficiency investments?	No
Are credit lines available for energy efficiency investments?	No
Are energy services agreements or ESCOs available for energy efficiency investments?	No
Are green bonds available for energy efficiency investments?	No
Is vendor credit and/or leasing available for energy efficiency investments?	No
Are partial risk guarantees available for energy efficiency investments?	No
Are there any other financing mechanisms available for energy efficiency investments?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
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Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No
Details	
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	No
Are these available as government-driven financing mechanisms?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Minimum energy efficiency performance standards	Score	50
EE standards regulations	Ghana_Energy Efficiency Regulations, LI_1958	
Refrigerators		
Have minimum energy performance standards been adopted?	Yes	
Details of standards	A star rating of at least one star (Energy efficiency Index of less than 52 and greater 42) The Climate Class of the refrigerator must be Tropical (T) or Sub-tropical (ST)	
Is there a verification program in place?	Yes	
Is it carried out by a third party?	Yes	
Is there a penalty for non-compliance with energy efficiency standards?	Yes	
Are the standards based on external/international standards?	Yes	
Air conditioners		
Have minimum energy performance standards been adopted?	Yes	
Details of standards	Energy Efficiency ratio of at least 2.8	
Is there a verification program in place?	Yes	
Is it carried out by a third party?	Yes	
Is there a penalty for non-compliance with energy efficiency standards?	Yes	



## Regulatory Indicators for Sustainable Energy (RISE)

Are the standards based on external/international standards?	Yes
Lighting equipment	
Have minimum energy performance standards been adopted?	Yes
Details of standards	umens of 33 lumens/watt
Is there a verification program in place?	Yes
Is it carried out by a third party?	Yes
Is there a penalty for non-compliance with energy efficiency standards?	Yes
Are the standards based on external/international standards?	Yes
Industrial electric motors	
Have minimum energy performance standards been adopted?	No
Details of standards	0
Is there a verification program in place?	No
Is it carried out by a third party?	No
Is there a penalty for non-compliance with energy efficiency standards?	No
Are the standards based on external/international standards?	No
Other industrial equipment	
Have minimum energy performance standards been adopted?	No
Details of standards	0
Is there a verification program in place?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Is it carried out by a third party?	No
Is there a penalty for non-compliance with energy efficiency standards?	No
Are the standards based on external/international standards?	No
Light duty vehicles	
Have minimum energy performance standards been adopted?	No
Details of standards	0
Is there a verification program in place?	No
Is it carried out by a third party?	No
Is there a penalty for non-compliance with energy efficiency standards?	No
Are the standards based on external/international standards?	No
Heavy duty vehicles	
Have minimum energy performance standards been adopted?	No
Details of standards	0
Is there a verification program in place?	No
Is it carried out by a third party?	No
Is there a penalty for non-compliance with energy efficiency standards?	No
Are the standards based on external/international standards?	No

**Energy labeling systems**

**Score**

**50**

## Regulatory Indicators for Sustainable Energy (RISE)

Refrigerators	
Have energy efficiency labeling schemes been adopted?	Yes
Is the labeling scheme mandatory?	Yes
Is the labeling scheme based on external/international standards?	No
Air conditioners	
Have energy efficiency labeling schemes been adopted?	Yes
Is the labeling scheme mandatory?	Yes
Is the labeling scheme based on external/international standards?	Yes
Lighting equipment	
Have energy efficiency labeling schemes been adopted?	Yes
Is the labeling scheme mandatory?	Yes
Is the labeling scheme based on external/international standards?	No
Industrial electric motors	
Have energy efficiency labeling schemes been adopted?	No
Is the labeling scheme mandatory?	No
Is the labeling scheme based on external/international standards?	No
Other industrial equipment	
Have energy efficiency labeling schemes been adopted?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Is the labeling scheme mandatory?	No
Is the labeling scheme based on external/international standards?	No
Light duty vehicles	
Have energy efficiency labeling schemes been adopted?	No
Is the labeling scheme mandatory?	No
Is the labeling scheme based on external/international standards?	No
Heavy duty vehicles	
Have energy efficiency labeling schemes been adopted?	No
Is the labeling scheme mandatory?	No
Is the labeling scheme based on external/international standards?	No

<b>Building energy codes</b>	<b>Score</b>	<b>0</b>
Are there energy efficiency codes for new residential buildings?	No	
Are there energy efficiency codes for new commercial buildings?	No	
Is the energy efficiency code for new residential buildings its own stand-alone, separate code or part of the overall building code?	No	
Is the energy efficiency code for new commercial buildings its own stand-alone, separate code or part of the overall building code?	No	
Is there any provision for regular updates to the code for new residential buildings?	No	

## Regulatory Indicators for Sustainable Energy (RISE)

Is there any provision for regular updates to the code for new commercial buildings?	No
EE building code regulations	
When was the code last updated for residential buildings?	0
When was the code last updated for commercial buildings?	0
Is there a system to ensure compliance with building energy efficiency codes?	No
Is it carried out by a third party?	No
Are renovated residential buildings required to meet a building energy codee?	No
Are renovated commercial buildings required to meet a building energy code?	No
Is the energy efficiency code for renovated residential buildings different from the code for new buildings?	No
Is the energy efficiency code for renovated commercial buildings different from the code for new buildings?	No
Is the energy efficiency code for renovated residential buildings its own stand-alone, separate code or part of the overall building code?	No
Is the energy efficiency code for renovated commercial buildings its own stand-alone, separate code or part of the overall building code?	No
Is there any provision for regular updates to the code for renovated residential buildings?	No
Is there any provision for regular updates to the code for renovated commercial buildings?	No
Is there a mandatory standardized rating or labeling system for the energy performance of existing buildings?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Is the labeling scheme or rating adopted from external standards?	No
Are commercial and residential buildings required to disclose property energy usage at the point of sale or when leased?	No
Are large commercial and residential buildings required to disclose property energy usage annually?	No
Are there mandates or targets for new building stocks to achieve high quality energy efficiency certifications, such as LEED (Leadership in Energy & Environmental Design) (e.g. percentage of new building stocks that must be LEED certified)?	No
Details	0
LEED incentives	No
Local program details	0

<b>Carbon Pricing</b>	<b>Score</b>	<b>0</b>
Is there a carbon pricing mechanism in place?	No	
For any carbon pricing mechanism (e.g. carbon tax, emission trading system), what is the portion of national GHG emissions covered)?	0	
Is there a monitoring, reporting and verification system for greenhouse gas emissions in place?	No	

## Renewable Energy

<b>Legal framework for renewable energy</b>	<b>Score</b>	<b>100</b>
Does a legal framework for renewable energy development exist?	Yes	

## Regulatory Indicators for Sustainable Energy (RISE)

Name of the Law	RENEWABLE ENERGY ACT 2011 (ACT 832)
Is private sector ownership of renewable energy generation legally authorized?	Yes

Planning for renewable energy expansion	Score	28
Does an official renewable energy target exist?		Yes
Overall target		10% in national energy mix
Solar target		
Wind target		
Hydro target		
Biomass target		
Geothermal target		
Does a renewable energy action plan or strategy to attain the target exist?		Yes
Name of the action plan		0
Does the plan or strategy define the amount of investment necessary to meet the RE target?		No
The amount of investment identified		0
Is there an institution responsible for tracking progress in renewable energy development?		Yes
Name of the institution		0

## Regulatory Indicators for Sustainable Energy (RISE)

Does an electricity generation plan that includes renewable energy development exist?	No
Name of the generation plan	0
Is the expansion plan based on a probabilistic approach?	N/A
Does the current transmission planning consider renewable energy scale-up?	No
Name of the transmission plan	0
Has the country conducted a variable renewable energy integration study?	No
Name of the integration study	0
Year of the integration study	
Does the country have sufficient resource abundance to warrant a solar resource atlas?	Yes
Does the government publish or endorse a solar resource atlas or other data on the abundance and quality of the resource?	Yes
Solar atlas is validated by at least 5 ground-based measurements taken for a period of at least a year;	Yes
Solar atlas has a spatial resolution of 5km or less;	No
Solar atlas is based on modeling inputs covering at least a 10 year period;	No
Solar atlas is accompanied by an explanation of the methodology and instrumentation	No
Has the country carried out strategic planning or produced zoning guidance to inform the commercial development of solar resources?	No
Has the solar resource planning or zoning guidance been undertaken as part of a strategic environmental and social	No



## Regulatory Indicators for Sustainable Energy (RISE)

assessment or equivalent process?	
Are the solar resource planning or zoning guidance outputs publically available?	No
Does the country have sufficient resource abundance to warrant a wind resource atlas?	Yes
Does the government publish or endorse a wind resource atlas or other data on the abundance and quality of the resource?	Yes
Wind atlas is validated by at least 5 ground-based measurements taken for a period of at least a year;	Yes
Wind atlas has a spatial resolution of 5km or less;	Yes
Wind atlas is based on modeling inputs covering at least a 10 year period;	No
Wind atlas is accompanied by an explanation of the methodology and instrumentation	No
Has the country carried out strategic planning or produced zoning guidance to inform the commercial development of wind resources?	No
Has the wind resource planning or zoning guidance been undertaken as part of a strategic environmental and social assessment or equivalent process?	No
Are the wind resource planning or zoning guidance outputs publically available?	No
Does the country have sufficient resource abundance to warrant a hydro resource atlas?	Yes
Does the country publish or endorse a national hydro resource map or atlas?	Yes
Hydro atlas is validated by ground-based water run-off data and/or site surveys from potential sites;	Yes

## Regulatory Indicators for Sustainable Energy (RISE)

Hydro atlas is accompanied by an explanation of the methodology and instrumentation	No
Has the country carried out strategic planning or produced zoning guidance to inform the commercial development of hydro resources?	No
Has the hydro resource planning or zoning guidance been undertaken as part of a strategic environmental and social assessment or equivalent process?	No
Are the hydro resource planning or zoning guidance outputs publically available?	No
Does the country have sufficient resource abundance to warrant a biomass resource atlas?	No
Does the country publish or endorse a national biomass resource map or atlas?	No
Biomass atlas is validated by ground-based survey or officially reported data;	No
Biomass atlas is accompanied by an explanation of the methodology and instrumentation.	No
Has the biomass resource planning or zoning guidance been undertaken as part of a strategic environmental and social assessment or equivalent process?	No
Are the biomass resource planning or zoning guidance outputs publically available?	No
Does the country have sufficient resource abundance to warrant a geothermal resource atlas?	No
Does the country publish or endorse a national geothermal resource map or atlas?	No
The government has collected and recorded well data at potential geothermal sites?	No

## Regulatory Indicators for Sustainable Energy (RISE)

Does the government publish a national geological map?	No
The government has supported surface exploration (geological; geochemical; temp; gradient) at potential sites?	No
The government has supported test drilling at at least one site (slim bore or full well)?	No
The government has supported the creation of a reservoir model at at least one site?	No
Has the country carried out strategic geothermal resource planning or produced zoning guidance to inform the commercial development of the resource?	No
Has the geothermal resource planning or zoning guidance been undertaken as part of a strategic environmental and social assessment or equivalent process?	No
Are the geothermal resource planning or zoning guidance outputs publically available?	No

<b>Incentives and regulatory support for renewable energy</b>	<b>Score</b>	<b>50</b>
Is there at least one scheme to support renewable energy per unit of electricity generated? (e.g., feed-in tariff, competitive bidding/auction, mandates, generation premiums, production tax credits)?	Yes	
Feed-in tariff	Yes	
Feed-in tariff - Solar	Yes	
Feed-in tariff - Wind	Yes	
Feed-in tariff - Hydro	Yes	
Feed-in tariff - Biomass	Yes	

## Regulatory Indicators for Sustainable Energy (RISE)

Feed-in tariff - Geothermal	No
Government body in charge	Public Utility Regulatory Commission
Projects guaranteed off-take	Yes
Solar Feed-in-tariff Price (\$ cents/kWh)	18
Solar Feed-in-tariff Max. capacity (single)	20 MW
Solar Feed-in-tariff Max. capacity (total)	150 MW
Solar Feed-in-tariff Closing date	N/A
Wind Feed-in-tariff Price (\$ cents/kWh)	16
Wind Feed-in-tariff Max. capacity (single)	N/A
Wind Feed-in-tariff Max. capacity (total)	300 MW
Wind Feed-in-tariff Closing date	N/A
Hydro Feed-in-tariff Price (\$ cents/kWh)	17
Hydro Feed-in-tariff Max. capacity (single)	100 MW
Hydro Feed-in-tariff Max. capacity (total)	No Limit
Hydro Feed-in-tariff Closing date	N/A
Biomass Feed-in-tariff Price (\$ cents/kWh)	18
Biomass Feed-in-tariff Max. capacity (single)	No Limit
Biomass Feed-in-tariff Max. capacity (total)	No Limit
Biomass Feed-in-tariff Closing date	N/A

## Regulatory Indicators for Sustainable Energy (RISE)

Geothermal Feed-in-tariff Price (\$ cents/kWh)	
Geothermal Feed-in-tariff Max. capacity (single)	
Geothermal Feed-in-tariff Max. capacity (total)	
Geothermal Feed-in-tariff Closing date	N/A
Competitive bidding	No
Auction 1 - Year	
Auction 1 - Technology	
Auction 1 - Project-specific tender and size (MW)	
Auction 1 - Auction for total and size (MW)	
Auction 1 - Standard PPA and Term	
Auction 1 - Price ceiling	No
Auction 1 - Winning bid (\$ cents/kWh)	
Auction 1 - Government body in charge	
Auction 2 - Year	
Auction 2 - Technology	
Auction 2 - Project-specific tender and size (MW)	
Auction 2 - Auction for total and size (MW)	
Auction 2 - Standard PPA and Term	
Auction 2 - Price ceiling	No
Auction 2 - Winning bid (\$ cents/kWh)	

## Regulatory Indicators for Sustainable Energy (RISE)

Auction 2 - Government body in charge	
Winning bid guaranteed off-take	No
Mandates	Yes
Generation premium	No
Production tax credit	No
Does the government offer other direct fiscal incentives for renewable energy (e.g. capital subsidies, grants or rebates, investment tax credits, tax reductions?)	No
Investment tax credit	No
Accelerated depreciation	No
Reduction in import taxes	No
Reduction in sales tax or other taxes	No
Does the country provide prioritized access to the grid for RE?	Yes
Do RE projects receive priority in dispatch?	Yes
Are there provisions to compensate seller if offtake infrastructure is not built in time?	No
Are there mechanisms to compensate RE projects for lost generation due to certain curtailments after project commissioning?	No

Attributes of financial and regulatory incentives	Score	78
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Is the market entry mechanism for private RE projects defined? (e.g. 1st come 1st served; tenders)	Yes
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## Regulatory Indicators for Sustainable Energy (RISE)

Details	0
Are projects subject to development timelines or milestones?	No
Are tariffs indexed (in part or in whole) to an international currency or to inflation?	Yes
If there is a guaranteed tariff, is there a mechanism to adjust the level of the tariff for new entrants (e.g., declination)?	Yes
If there is a guaranteed tariff, is there a mechanism to differentiate tariffs based on the size of the generation plant?	Yes
If there is competitive bidding/auctions, are there provisions to ensure full and timely project completion (e.g., bid-bonds, project milestones, eligibility requirements)	N/A
If there is a renewable energy mandate, can it be met with tradable certificates (e.g., RECs, ROCs, TECs)?	No
Is the price subsidy/benefit implied by a renewable energy incentive program passed through in full or in part to the final electricity consumer?	Yes

<b>Network connection and pricing</b>	<b>Score</b>	<b>92</b>
Are there rules defining the allocation of connection costs?	Yes	
What is the type of the connection cost allocation policy (i.e. shallow/deep)?	Deep	
Are there rules that allow electricity customers to purchase power directly from a third party (i.e. an entity other than the designated utility in a service area)?	Yes	
Do the rules define the size and allocation of costs for transmission and distribution wheeling charges? (e.g., wheeling charges, locational pricing?)	Yes	
Do the rules consider customer type/size in determining eligibility for purchasing electricity from a third party?	Yes	

## Regulatory Indicators for Sustainable Energy (RISE)

connection cost document	RENEWABLE ENERGY ACT 2011 (ACT 832)
Does the country have a grid code that includes measures or standards addressing variable renewable energy?	Yes
Is there more than one balancing area in the country?	No
Are there rules for exchanging power between balancing areas that penalize variable renewable energy (e.g. through imbalance penalties)?	N/A
Are there provisions in the power exchange rules that allow for plant forecasting?	N/A

Counterparty risk	Score	71
Does the government offer or allow backing of utility payments (e.g. through a letter of credit, escrow account, payment guarantee, or other)?		Yes
Information disclosure		33
Are the financial statements of the largest utility publicly available?		0
Are the financial statements of the largest generation company publicly available?		Yes
Are the financial statements of the largest transmission company publicly available?		Yes
Are the financial statements of the largest distribution company publicly available?		Yes
Are the financial statements of the largest retail electricity sales company publicly available?		Yes
Are the following metrics published in a primary official document (by the utility, regulator or ministry and/or government)?		0



## Regulatory Indicators for Sustainable Energy (RISE)

Is the transmission loss rate published in a primary official document (by the utility, regulator or ministry and/or government)?	Yes
Is the distribution loss rate published in a primary official document (by the utility, regulator or ministry and/or government)?	Yes
Is the bill collection rate published in a primary official document (by the utility, regulator or ministry and/or government)?	Yes
Is the amount of electricity available for sale to end-users published in a primary official document (by the utility, regulator or ministry and/or government)?	Yes
Information Auditing	33
Financial statements independently audited?	0
Are the financial statements of the largest generation company audited?	Yes
Are the financial statements of the largest transmission company audited?	Yes
Are the financial statements of the largest distribution company audited?	Yes
Are the financial statements of the largest retail electricity sales company audited?	Yes
Monitoring Reliability	0
Is the utility operating an incidence/outage recording system (or SCADA/EMS with such functionality)?	Yes
Is the utility measuring the SAIDI and SAIFI or any other measurements for service reliability?	Yes
Are the data reported to the regulatory body?	Yes

## Regulatory Indicators for Sustainable Energy (RISE)

Are the data available to the public?	Yes
Name of the selected utility	ECG
data - 17.1. Current ratio (working capital ratio)	1
data - 17.2 Debt Service Coverage Ratio	N/A
data - 17.3 Days payable outstanding	381
data - 17.4 EBITDA margin	0
Current ratio (working capital ratio) of selected utility	0
Debt Service Coverage Ratio of selected utility	0
Days payable outstanding of selected utility	0
EBITDA margin of selected utility	14

<b>Carbon pricing and monitoring</b>	<b>Score</b>	<b>0</b>
Is there a carbon pricing mechanism in place?		No
For any carbon pricing mechanism (e.g. carbon tax, emission trading system), what is the portion of national GHG emissions covered)?		0%
Is there a monitoring, reporting and verification system for greenhouse gas emissions in place?		No