

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

### Energy Efficiency

Indicator	Score
National energy efficiency planning	91.67
Energy efficiency entities	100
Information provided to consumers about electricity usage	62.5
EE incentives from electricity rate structures	62.96
Incentives & mandates: large consumers	100
Incentives & mandates: public sector	37.5
Incentives & mandates: utilities	62.5
Financing mechanisms for energy efficiency	91.67
Minimum energy efficiency performance standards	33.33
Energy labeling systems	58.33
Building energy codes	50
Carbon Pricing	0
<b>Total</b>	<b>62.54</b>

### Renewable Energy

Indicator	Score
Legal framework for renewable energy	50
Planning for renewable energy expansion	82
Incentives and regulatory support for renewable energy	63
Attributes of financial and regulatory incentives	100
Network connection and pricing	58
Counterparty risk	64
Carbon pricing and monitoring	0
<b>Total</b>	<b>59.57</b>

## Regulatory Indicators for Sustainable Energy (RISE)

<b>Overall Score</b>	40.7
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### Energy Efficiency

National energy efficiency planning	Score	91.67
Is there legislation or a national action plan that aims to increase EE?		Yes
Name of EE legislation or action plan		Thailand Energy Efficiency Development Plan 215-236
Is there an energy efficiency goal or target at the national level?		Yes
National target details		To reduce energy intensity (EI) by 25% in 2030 or 30% in 2036, in comparison with 2010. Units are KTOE savings.
Is there a target for the residential sector?		Yes
Target details		13,633 GWh in Electricity
Does the target have a milestone or deadline?		Yes
Is there a commercial services sector target?		Yes
Target details		37,052 GWh in Electricity
Does the target have a milestone or deadline?		Yes
Is there an industrial sector target?		Yes
Target details		31,843 GWh in Electricity
Does the target have a milestone or deadline?		Yes
Is there a power sector target?		No

## Regulatory Indicators for Sustainable Energy (RISE)

Target details	0
Does the target have a milestone or deadline?	No

Energy efficiency entities	Score	100
Are there governmental and/or independent bodies dedicated to setting EE strategy?	Yes	
Name of entity	Energy Policy and Planning Office	
Are there governmental and/or independent bodies dedicated to setting EE standards?	Yes	
Name of entity	Department of Alternative Energy Development and Efficiency, Electricity Generating Authority of Thailand	
Are there governmental and/or independent bodies dedicated to regulating EE activities of energy suppliers?	Yes	
Name of entity	Energy Regulatory Commission	
Are there governmental and/or independent bodies dedicated to regulating EE activities of energy consumers?	Yes	
Name of entity	Department of Alternative Energy Development and Efficiency	
Are there governmental and/or independent bodies dedicated to certifying compliance with equipment EE standards?	Yes	
Name of entity	Department of Alternative Energy	

## Regulatory Indicators for Sustainable Energy (RISE)

	Development and Efficiency, Electricity Generating Authority of Thailand, Thailand Industrial Standard Institute
Are there governmental and/or independent bodies dedicated to certifying compliance with building EE standards?	Yes
Name of entity	Department of Alternative Energy Development and Efficiency
Are there governmental and/or independent bodies dedicated to selecting and/or approving third party auditors tasked with certifying EE standards?	Yes
Name of entity	Department of Alternative Energy Development and Efficiency

Information provided to consumers about electricity usage	Score	62.5
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	

## Regulatory Indicators for Sustainable Energy (RISE)

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
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?	Yes
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

## Regulatory Indicators for Sustainable Energy (RISE)

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?	Yes
Commercial customers	
Do customers receive a bill or report that shows their energy usage compared to previous bills or reports over time?	Yes
Industrial customers	
Do customers receive a bill or report that shows their energy usage compared to previous bills or reports over time?	Yes
All customers	
Can customers access real time feedback on energy usage (for either prepaid or post-paid systems)?	No
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>62.96</b>
Residential customers		
Are customers charged a flat fee (per connection)?	No	
Are customers charged constant block rates?	No	

## Regulatory Indicators for Sustainable Energy (RISE)

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?	Yes
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
Are customers charged increasing block rates?	No
Residential customers	
Do customers pay energy charges (per kWh)?	Yes
Do customers pay demand charges (per kW)?	No
Do customers pay reactive power charges (per kVAR)?	No
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

## Regulatory Indicators for Sustainable Energy (RISE)

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
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



## Regulatory Indicators for Sustainable Energy (RISE)

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	100
What is the threshold for classifying large consumers?	Electricity meter > 1,000 kW, Transformer >1,175 kVA, Energy Usage > 20 million MJ per year	
Large consumer EE mandate/incentive regulations	Energy Data Reporting system in Thailand	
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?	No	
Details	0	
Are energy audits mandated for large consumers?	No	
Are energy efficiency progress reports mandated for large consumers?	Yes	
Interval of reports	1 Year	
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	

## Regulatory Indicators for Sustainable Energy (RISE)

Is there a measurement and verification program in place?	Yes
Is verification done by a third party?	Yes
Are there financial incentives for large consumers to invest in energy efficiency?	Yes
Details	Equity investment, equipment leasing under the ESCO Revolving Fund Phase III which are available for all users not only large scale users
Are there tax incentives for large consumers to invest in energy efficiency?	Yes
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?	Yes
Are energy savings and/or financial savings publicized?	Yes
Does the program offer assistance (from a government or independent entity) to large-scale users to identify energy savings investments opportunities?	Yes
Primary Energy Consumption (MJ - latest GTF data from 2012)	669.8297143

Incentives & mandates: public sector	Score	37.5
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)?	Yes	

## Regulatory Indicators for Sustainable Energy (RISE)

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	

Incentives & mandates: utilities	Score	62.5
Name of utility energy efficiency regulation program	Thailand Energy Efficiency Development Plan 215-236	
Electricity generation		
Are utilities required to carry out energy efficiency activities in this area?	Yes	
Details	N/A	
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?	Yes	
Are there penalties in place for non-compliance with EE requirements?	No	

## Regulatory Indicators for Sustainable Energy (RISE)

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	Transmission Losses
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?	Yes
Are there penalties in place for non-compliance with EE requirements?	No
Demand-side management -	
Are utilities required to carry out energy efficiency activities in this area?	Yes
Details	kWh savings
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?	Yes
Are there penalties in place for non-compliance with EE requirements?	No
Is there a demand-side management department within the selected utility?	Yes
Do utilities provide customers incentives for demand response, such as peak-time rebates?	Yes

## Regulatory Indicators for Sustainable Energy (RISE)

Is there public budget funding available for utilities to recover costs associated with or revenue lost from mandated energy efficiency activities?	Yes
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
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

## Regulatory Indicators for Sustainable Energy (RISE)

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
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

Financing mechanisms for energy efficiency	Score	91.67
Residential sector		

## Regulatory Indicators for Sustainable Energy (RISE)

Are there tax incentives available for energy efficiency investments?	Yes
Are there discounted "green" mortgages available for energy efficiency investments?	Yes
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?	Yes
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?	Yes
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Details	
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Are these available as government-driven financing mechanisms?	No
Commercial services sector	
Are there tax incentives available for energy efficiency investments?	Yes
Are there discounted "green" mortgages available for energy efficiency investments?	Yes
Is on-bill financing/re-payment available for energy efficiency investments?	No
Are credit lines available for energy efficiency investments?	Yes
Are energy services agreements or ESCOs available for energy efficiency investments?	Yes



## Regulatory Indicators for Sustainable Energy (RISE)

Are green bonds available for energy efficiency investments?	No
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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
Industrial sector	
Are there tax incentives available for energy efficiency investments?	Yes
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?	Yes
Are energy services agreements or ESCOs available for energy efficiency investments?	Yes

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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

<b>Minimum energy efficiency performance standards</b>	<b>Score</b>	<b>33.33</b>
EE standards regulations		Energy Standards & Labeling (ES&L) Implementation in Thailand
Refrigerators		
Have minimum energy performance standards been adopted?	Yes	
Details of standards		Unit Energy Consumption(kWh/year) E.g._x000D_One door

## Regulatory Indicators for Sustainable Energy (RISE)

	refrigerators, $AV \geq 100$ litres, $158 + (0.43 * AV)$ , $AV < 100$ litres, $278 + (0.74$
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	Minimum Energy Efficiency Ratio (EER), W/W 2.53-2.82
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
Lighting equipment	
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

## Regulatory Indicators for Sustainable Energy (RISE)

Are the standards based on external/international standards?	No
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
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

## 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
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

<b>Energy labeling systems</b>	<b>Score</b>	<b>58.33</b>
Refrigerators		
Have energy efficiency labeling schemes been adopted?	Yes	
Is the labeling scheme mandatory?	Yes	
Is the labeling scheme based on external/international standards?	Yes	
Air conditioners		
Have energy efficiency labeling schemes been adopted?	Yes	
Is the labeling scheme mandatory?	Yes	

## Regulatory Indicators for Sustainable Energy (RISE)

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



## Regulatory Indicators for Sustainable Energy (RISE)

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>50</b>
Are there energy efficiency codes for new residential buildings?	No	
Are there energy efficiency codes for new commercial buildings?	Yes	
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?	Yes	
Is there any provision for regular updates to the code for new residential buildings?	No	
Is there any provision for regular updates to the code for new commercial buildings?	Yes	
EE building code regulations	Ministerial Regulation on Types, Size, Standards, Criteria and Methodology in Designing Energy Conservation Buildings B.E. 2552	
When was the code last updated for residential buildings?	0	
When was the code last updated for commercial buildings?	2009	
Is there a system to ensure compliance with building energy efficiency codes?	Yes	

## Regulatory Indicators for Sustainable Energy (RISE)

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?	Yes
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?	Yes
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?	Yes
Is there a mandatory standardized rating or labeling system for the energy performance of existing buildings?	No
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	Yes

## Regulatory Indicators for Sustainable Energy (RISE)

of new building stocks that must be LEED certified)?	
Details	Low interest rate loan/tax incentives
LEED incentives	No
Local program details	Building Energy Code

<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>50</b>
Does a legal framework for renewable energy development exist?		No
Name of the Law		0
Is private sector ownership of renewable energy generation legally authorized?		Yes

<b>Planning for renewable energy expansion</b>	<b>Score</b>	<b>82</b>
Does an official renewable energy target exist?		Yes

## Regulatory Indicators for Sustainable Energy (RISE)

Overall target	All three. Percentage of Electricity Generation (326,119 GWh), Cumulative Installed Capacity (19,634.4 MW), Capacity Added during 2015-2036 (12,144 MW), Percentage of Fuel Mix (20.11%)
Solar target	6,000 MW
Wind target	3,002 MW
Hydro target	Small 376 MW, Large 2,906 MW
Biomass target	5,570 MW
Geothermal target	0.3 MW
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
Does an electricity generation plan that includes renewable energy development exist?	Yes
Name of the generation plan	0

## Regulatory Indicators for Sustainable Energy (RISE)

Is the expansion plan based on a probabilistic approach?	Yes
Does the current transmission planning consider renewable energy scale-up?	Yes
Name of the transmission plan	0
Has the country conducted a variable renewable energy integration study?	Yes
Name of the integration study	0
Year of the integration study	2015
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;	Yes
Solar atlas is based on modeling inputs covering at least a 10 year period;	Yes
Solar atlas is accompanied by an explanation of the methodology and instrumentation	Yes
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 assessment or equivalent process?	No
Are the solar resource planning or zoning guidance outputs publically available?	No

## Regulatory Indicators for Sustainable Energy (RISE)

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;	No
Wind atlas has a spatial resolution of 5km or less;	No
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?	Yes
Has the wind resource planning or zoning guidance been undertaken as part of a strategic environmental and social assessment or equivalent process?	Yes
Are the wind resource planning or zoning guidance outputs publically available?	Yes
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?	No
Hydro atlas is validated by ground-based water run-off data and/or site surveys from potential sites;	No
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

## Regulatory Indicators for Sustainable Energy (RISE)

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?	Yes
Does the country publish or endorse a national biomass resource map or atlas?	Yes
Biomass atlas is validated by ground-based survey or officially reported data;	Yes
Biomass atlas is accompanied by an explanation of the methodology and instrumentation.	Yes
Has the biomass resource planning or zoning guidance been undertaken as part of a strategic environmental and social assessment or equivalent process?	Yes
Are the biomass resource planning or zoning guidance outputs publically available?	Yes
Does the country have sufficient resource abundance to warrant a geothermal resource atlas?	Yes
Does the country publish or endorse a national geothermal resource map or atlas?	Yes
The governmentn has collected and recorded well data at potential geothermal sites?	No
Does the government publish a national geological map?	Yes
The government has supported surface exploration (geological; geochemical; temp; gradient) at potential sites?	Yes
The government has supported test drilling at at least one site (slim bore or full well)?	No

## Regulatory Indicators for Sustainable Energy (RISE)

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?nt 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>63</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	
Feed-in tariff - Geothermal	No	
Government body in charge	Energy Policy and Planning Office and Energy Regulatory Commission	
Projects guaranteed off-take	No	



## Regulatory Indicators for Sustainable Energy (RISE)

Solar Feed-in-tariff Price (\$ cents/kWh)	16
Solar Feed-in-tariff Max. capacity (single)	? 90 MW
Solar Feed-in-tariff Max. capacity (total)	Not specified yet
Solar Feed-in-tariff Closing date	To be announced in the next round of power purchase
Wind Feed-in-tariff Price (\$ cents/kWh)	17
Wind Feed-in-tariff Max. capacity (single)	10 MW
Wind Feed-in-tariff Max. capacity (total)	Not specified yet
Wind Feed-in-tariff Closing date	To be announced in the next round of power purchase
Hydro Feed-in-tariff Price (\$ cents/kWh)	14
Hydro Feed-in-tariff Max. capacity (single)	? 200 kW
Hydro Feed-in-tariff Max. capacity (total)	Not specified yet
Hydro Feed-in-tariff Closing date	To be announced in the next round of power purchase
Biomass Feed-in-tariff Price (\$ cents/kWh)	15
Biomass Feed-in-tariff Max. capacity (single)	10 MW
Biomass Feed-in-tariff Max. capacity (total)	280.43 MW including biogas
Biomass Feed-in-tariff Closing date	43070
Geothermal Feed-in-tariff Price (\$ cents/kWh)	n/a

## Regulatory Indicators for Sustainable Energy (RISE)

Geothermal Feed-in-tariff Max. capacity (single)	n/a
Geothermal Feed-in-tariff Max. capacity (total)	
Geothermal Feed-in-tariff Closing date	
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)	
Auction 2 - Government body in charge	

## Regulatory Indicators for Sustainable Energy (RISE)

Winning bid guaranteed off-take	No
Mandates	No
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?)	Yes
Investment tax credit	No
Accelerated depreciation	No
Reduction in import taxes	Yes
Reduction in sales tax or other taxes	Yes
Does the country provide prioritized access to the grid for RE?	Yes
Do RE projects receive priority in dispatch?	No
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	100
Is the market entry mechanism for private RE projects defined? (e.g. 1st come 1st served; tenders)	Yes	
Details		0

## Regulatory Indicators for Sustainable Energy (RISE)

Are projects subject to development timelines or milestones?	Yes
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)?	N/A
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>58</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)?	No	
Do the rules define the size and allocation of costs for transmission and distribution wheeling charges? (e.g., wheeling charges, locational pricing?)	N/A	
Do the rules consider customer type/size in determining eligibility for purchasing electricity from a third party?	N/A	

## Regulatory Indicators for Sustainable Energy (RISE)

connection cost document	0
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

<b>Counterparty risk</b>	<b>Score</b>	<b>64</b>
Does the government offer or allow backing of utility payments (e.g. through a letter of credit, escrow account, payment guarantee, or other)?	No	
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	Metropolitan Electricity Authority
data - 17.1. Current ratio (working capital ratio)	2
data - 17.2 Debt Service Coverage Ratio	2
data - 17.3 Days payable outstanding	30
data - 17.4 EBITDA margin	0
Current ratio (working capital ratio) of selected utility	25
Debt Service Coverage Ratio of selected utility	25
Days payable outstanding of selected utility	25
EBITDA margin of selected utility	16

<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