

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

Energy Efficiency

Indicator	Score
National energy efficiency planning	66.67
Energy efficiency entities	85.71
Information provided to consumers about electricity usage	50
EE incentives from electricity rate structures	77.78
Incentives & mandates: large consumers	72.22
Incentives & mandates: public sector	75
Incentives & mandates: utilities	29.17
Financing mechanisms for energy efficiency	50
Minimum energy efficiency performance standards	50
Energy labeling systems	33.33
Building energy codes	30
Carbon Pricing	0
Total	51.66

Renewable Energy

Indicator	Score
Legal framework for renewable energy	100
Planning for renewable energy expansion	67
Incentives and regulatory support for renewable energy	75
Attributes of financial and regulatory incentives	78
Network connection and pricing	58
Counterparty risk	100
Carbon pricing and monitoring	0
Total	68.29

Regulatory Indicators for Sustainable Energy (RISE)

Overall Score

39.98

Energy Efficiency

National energy efficiency planning	Score	66.67
Is there legislation or a national action plan that aims to increase EE?		Yes
Name of EE legislation or action plan		National Energy Efficiency Action Plan Draft 214
Is there an energy efficiency goal or target at the national level?		Yes
Natonal target details		50,594 GWh of savings
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?		No
Target details		0
Does the target have a milestone or deadline?		No

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Energy efficiency entities	Score	85.71
Are there governmental and/or independent bodies dedicated to setting EE strategy?		Yes
Name of entity		Ministry of energy, green technology and water, Economic Planning Unit
Are there governmental and/or independent bodies dedicated to setting EE standards?		Yes
Name of entity		Department of Standards Malaysia,
Are there governmental and/or independent bodies dedicated to regulating EE activities of energy suppliers?		Yes
Name of entity		Ministry of energy, green technology and water, Energy commission
Are there governmental and/or independent bodies dedicated to regulating EE activities of energy consumers?		Yes
Name of entity		Ministry of energy, green technology and water, Energy commission
Are there governmental and/or independent bodies dedicated to certifying compliance with equipment EE standards?		Yes
Name of entity		Ministry of energy, green technology and water, Energy commission, SIRIM
Are there governmental and/or independent bodies dedicated to certifying compliance with building EE standards?		Yes
Name of entity		Green building index, GreenRE, Public Works Department

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Are there governmental and/or independent bodies dedicated to selecting and/or approving third party auditors tasked with certifying EE standards?	No
Name of entity	0

Information provided to consumers about electricity usage	Score	50
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	

Regulatory Indicators for Sustainable Energy (RISE)

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
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

Regulatory Indicators for Sustainable Energy (RISE)

Industrial customers	
Do customers receive a bill or report that shows their energy usage compared to previous bills or reports over time?	No
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

EE incentives from electricity rate structures	Score	77.78
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		

Regulatory Indicators for Sustainable Energy (RISE)

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
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)?	No
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)?	No
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

Regulatory Indicators for Sustainable Energy (RISE)

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?	Yes
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?	Yes
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	72.22
What is the threshold for classifying large consumers?		3,000,000 kWh use over 6 months
Large consumer EE mandate/incentive regulations		Efficiency Management of Electrical Energy Regulations 28

Regulatory Indicators for Sustainable Energy (RISE)

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	every 6 months
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?	No
Is verification done by a third party?	No
Are there financial incentives for large consumers to invest in energy efficiency?	Yes
Details	Green Technology Financing Scheme (www.gtfs.my)
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

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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?	No
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)	3401085.94

Incentives & mandates: public sector	Score	75
Are there binding energy savings obligations for public buildings?	Yes	
Are energy savings from efficiency activities at public buildings tracked (either in-house or by a third party)?	Yes	
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	Government Green Procurement	
Do public budgeting regulations and practices allow public entities to retain energy savings?	Yes	
Public budgeting regulations for EE		

Incentives & mandates: utilities	Score	29.17
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Regulatory Indicators for Sustainable Energy (RISE)

Name of utility energy efficiency regulation program	
Electricity generation	
Are utilities required to carry out energy efficiency activities in this area?	No
Details	
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
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?	No
Details	
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
Demand-side management -	
Are utilities required to carry out energy efficiency activities in this area?	Yes

Regulatory Indicators for Sustainable Energy (RISE)

Details	awareness only
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?	Yes
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?	Yes
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?	Yes
Are these available as solely market-driven financing mechanisms without any direct government approval, subsidy, authorization or other mediation procedure?	Yes
Are these available as government-driven financing mechanisms?	Yes
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

Financing mechanisms for energy efficiency	Score	50
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)

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Details	
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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?	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?	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?	Yes
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
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Are these available as government-driven financing mechanisms?	Yes
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?	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?	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?	Yes
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
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Are these available as government-driven financing mechanisms?	Yes
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		
Refrigerators		
Have minimum energy performance standards been adopted?		Yes
Details of standards		Liter/kWh
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		Btu/h/W
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?		Yes
Details of standards		Lumen/W

Regulatory Indicators for Sustainable Energy (RISE)

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?	Yes
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	

Regulatory Indicators for Sustainable Energy (RISE)

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	33.33
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	

Regulatory Indicators for Sustainable Energy (RISE)

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?	No
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?	No
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?	No
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

Regulatory Indicators for Sustainable Energy (RISE)

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

Building energy codes	Score	30
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		
When was the code last updated for residential buildings?	0	
When was the code last updated for commercial buildings?	2014	

Regulatory Indicators for Sustainable Energy (RISE)

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
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

Regulatory Indicators for Sustainable Energy (RISE)

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)?	Yes
Details	MIDA tax and investment incentives. EE equipment - high efficiency motor, insulation material and low-e glass RE equipment - photovoltaic panels, solar heating equipment, and biomass furnaces etc. Greentech financing scheme (GTFS), (Credit guarantee, interest rate subsidy). Production or usage of green technology, complete project cost.
LEED incentives	No
Local program details	Green Building Index tax exemptions, Additional capital expenditure to obtain GBI certificate - qualified expense QE is financed. Refer to http://www.greenbuildingindex.org/index.html

Carbon Pricing	Score	0
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	

Regulatory Indicators for Sustainable Energy (RISE)

Renewable Energy

Legal framework for renewable energy	Score	100
Does a legal framework for renewable energy development exist?		Yes
Name of the Law		0
Is private sector ownership of renewable energy generation legally authorized?		Yes

Planning for renewable energy expansion	Score	67
Does an official renewable energy target exist?		Yes
Overall target		Public document - KeTTHA, Ministry of Energy, Green Technology and Water National Renewable Energy Policy and Action Plan - Page 38 table 5.7 - Unable to attach table here -
Solar target		8874 MW
Wind target		
Hydro target		490 MW
Biomass target		1340 MW
Geothermal target		
Does a renewable energy action plan or strategy to attain the target exist?		Yes
Name of the action plan		0

Regulatory Indicators for Sustainable Energy (RISE)

Does the plan or strategy define the amount of investment necessary to meet the RE target?	Yes
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
Is the expansion plan based on a probabilistic approach?	No
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	Unknown as date not published in the book. Grid integration done adhoc as well i. Power Systems Study (PSS) for any RE installation more than 425 kW and above; or ii. Connection Confirmation Check (CCC) for any RE installation more than 12 kW up to 425 kW. (http://seda.gov.my/power_system_study_guideline.html?omaneg=0010100000001010101000100000100000000000000000000000&s=114)

Regulatory Indicators for Sustainable Energy (RISE)

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;	No
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 assessment or equivalent process?	No
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?	No
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

Regulatory Indicators for Sustainable Energy (RISE)

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?	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
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

Regulatory Indicators for Sustainable Energy (RISE)

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?	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 governmentn has collected and recorded well data at potential geothermal sites?	No
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?nt process?	No
Are the geothermal resource planning or zoning guidance outputs publically available?	No

Regulatory Indicators for Sustainable Energy (RISE)

Incentives and regulatory support for renewable energy	Score	75
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		No
Feed-in tariff - Hydro		Yes
Feed-in tariff - Biomass		Yes
Feed-in tariff - Geothermal		Yes
Government body in charge		SEDA (Sustainable Energy Development Authority Malaysia)
Projects guaranteed off-take		Yes
Solar Feed-in-tariff Price (\$ cents/kWh)		18
Solar Feed-in-tariff Max. capacity (single)		30MW
Solar Feed-in-tariff Max. capacity (total)		204
Solar Feed-in-tariff Closing date		Not applicable projects have to be operationalized the same year as FIT approval
Wind Feed-in-tariff Price (\$ cents/kWh)		
Wind Feed-in-tariff Max. capacity (single)		

Regulatory Indicators for Sustainable Energy (RISE)

Wind Feed-in-tariff Max. capacity (total)	
Wind Feed-in-tariff Closing date	
Hydro Feed-in-tariff Price (\$ cents/kWh)	6
Hydro Feed-in-tariff Max. capacity (single)	30MW
Hydro Feed-in-tariff Max. capacity (total)	18
Hydro Feed-in-tariff Closing date	Not applicable projects have to be operationalized the same year as FIT approval
Biomass Feed-in-tariff Price (\$ cents/kWh)	7
Biomass Feed-in-tariff Max. capacity (single)	30MW
Biomass Feed-in-tariff Max. capacity (total)	75
Biomass Feed-in-tariff Closing date	Not applicable projects have to be operationalized the same year as FIT approval
Geothermal Feed-in-tariff Price (\$ cents/kWh)	11
Geothermal Feed-in-tariff Max. capacity (single)	30MW
Geothermal Feed-in-tariff Max. capacity (total)	
Geothermal Feed-in-tariff Closing date	Not applicable projects have to be operationalized the same year as FIT approval
Competitive bidding	No
Auction 1 - Year	

Regulatory Indicators for Sustainable Energy (RISE)

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	
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,	Yes

Regulatory Indicators for Sustainable Energy (RISE)

investment tax credits, tax reductions?)	
Investment tax credit	Yes
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?	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
Is the market entry mechanism for private RE projects defined? (e.g. 1st come 1st served; tenders)	Yes	
Details		0
Are projects subject to development timelines or milestones?	Yes	
Are tariffs indexed (in part or in whole) to an international currency or to inflation?	No	
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	

Regulatory Indicators for Sustainable Energy (RISE)

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

Network connection and pricing	Score	58
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?)	No	
Do the rules consider customer type/size in determining eligibility for purchasing electricity from a third party?	No	
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	

Regulatory Indicators for Sustainable Energy (RISE)

Are there provisions in the power exchange rules that allow for plant forecasting?	N/A
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Counterparty risk	Score	100
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		21
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
Is the transmission loss rate published in a primary official document (by the utility, regulator or ministry and/or government)?		No
Is the distribution loss rate published in a primary official document (by the utility, regulator or ministry and/or government)?		No
Is the bill collection rate published in a primary official document (by the utility, regulator or ministry and/or government)?		No

Regulatory Indicators for Sustainable Energy (RISE)

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
Are the data available to the public?	Yes
Name of the selected utility	Tenaga Nasional Berhad
data - 17.1. Current ratio (working capital ratio)	2
data - 17.2 Debt Service Coverage Ratio	3
data - 17.3 Days payable outstanding	91
data - 17.4 EBITDA margin	0

Regulatory Indicators for Sustainable Energy (RISE)

Current ratio (working capital ratio) of selected utility	25
Debt Service Coverage Ratio of selected utility	25
Days payable outstanding of selected utility	17
EBITDA margin of selected utility	25

Carbon pricing and monitoring	Score	0
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