

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

Energy Access

Indicator	Score
Existence and monitoring of officially approved electrification plan	80
Scope of officially approved electrification plan	75
Framework for grid electrification	100
Framework for minigrids	76.67
Framework for stand-alone systems	68.89
Consumer affordability of electricity	100
Utility Transparency and Monitoring	95.82
Utility Creditworthiness	76.49
Total	84.11

Energy Efficiency

Indicator	Score
National energy efficiency planning	83.33
Energy efficiency entities	85.71
Information provided to consumers about electricity usage	62.5
EE incentives from electricity rate structures	77.78
Incentives & mandates: large consumers	88.89
Incentives & mandates: public sector	25
Incentives & mandates: utilities	66.67
Financing mechanisms for energy efficiency	91.67
Minimum energy efficiency performance standards	66.67
Energy labeling systems	75
Building energy codes	0
Carbon Pricing	0
Total	60.27

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Renewable Energy

Indicator	Score
Legal framework for renewable energy	100
Planning for renewable energy expansion	68
Incentives and regulatory support for renewable energy	75
Attributes of financial and regulatory incentives	100
Network connection and pricing	67
Counterparty risk	57
Carbon pricing and monitoring	0
Total	66.71
Overall Score	70.36

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		Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) with rural electrification as one objective ; Remote Village Electrification programme
Are the electrification plan and the updates publicly available?		Yes
When was the last update of the electrification plan?		2014

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Is there an institution responsible for tracking progress of the plan?	Yes
Name of the tracking institution	Rural Electrification Corporation Limited
Is there a timeframe defined in the electrification plan?	No

Scope of officially approved electrification plan	Score	75
Does the plan target a service level (e.g., power availability, number of guaranteed hours of power supply, etc.)?		Yes
Details on service level target		Minimum electricity supply of 6- 8 hours a day
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	100
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		Office Memorandum - DDUGJY (grants as a

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	percentage of projects' costs)
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
Does the government specify standards of performance on reliability along with new connections (e.g., number of guaranteed hours per day, etc.)?	Yes

Framework for minigrids	Score	76.67
Are minigrids legally allowed to operate in the country?	Yes	
Name and date of the regulation for minigrids	Electricity Act - 2003 (sections 4,5,6 and 14)	
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	

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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	0
Name of the regulation on minigrid tariffs	Rural Electrification Policy - 2006
Are there publicly funded mechanisms to secure viability gap funding for operators?	Yes
Do subsidies exist for minigrids?	Yes
Details on subsidies for minigrids	Upto 30% of capital costs for off-grid solar PV systems if they use PV modules made in India
Name of the document referring to minigrid subsidies	Remote Village Electrification Programme
Do subsidies exist for power generators?	Yes
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?	Yes
Details on duty exemptions for minigrids	Solar equipment
Name of the document referring to mini-grid duty exemptions	Letter from the Ministry

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	of New and Renewable Energy "Grant of exemption of exercise duty and concessional custom duty on the procurement of material / components required for setting up mini-grid and micro-grid photovoltaic solar power plants" - 2013
Do duty exemptions exist for power generators?	Yes
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?	Yes
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	Financial Support for extending subsidy - for installation of 68,000 Solar Photovoltaic lights and small capacity

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	systems through NABARD/RRB's, Nationalized banks and Cooperative banks under Jawaharlal Nehru National Solar Mission (JNNSM)
Name of the document referring to subsidies for stand-alone systems	Power for All
Do duty exemptions exist for stand-alone systems?	No
Details on duty exemptions for stand-alone systems	0
Name of the document referring to duty exemptions for stand-alone systems	0
Do duty exemptions exist for solar modules?	No
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?	No
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

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Are there specific market financing facilities available to support consumers to purchase stand-alone standalone systems?	No
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?	Yes
Are technical standards made publicly available?	Yes
Name of the document detailing technical standards	Guidelines for off-grid and decentralized solar applications & rooftop and other small solar power plants
Are there safety standards for minigrids?	Yes
Are these safety standards made publicly available?	Yes
Name of the document detailing safety standards	Guidelines for off-grid and decentralized solar applications & rooftop and other small solar power plants
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	Minimal Technical Requirements / Standards for Solar PV systems and plants

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Has the government adopted international testing methods?	Yes
Does the regulation accept testing done elsewhere/in another country (vs in-country testing required)?	No
Is there a governmental certified program for solar equipment installers?	No
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

Framework for stand-alone systems	Score	68.89
Are there publicly funded mechanisms to secure viability gap funding for operators?	Yes	
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Is there a governmental certified program for solar equipment installers?	No
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	"Off-Grid & Decentralized Solar Applications" scheme for promoting Off-Grid & Decentralized Solar Applications

Consumer affordability of electricity	Score	100
What is the annual cost of subsistence consumption (30kWh/month) as a percentage of GNI per household of bottom 20 percent of population?	0.578836107954911%	
Tariff schedule / tariff structure taken into account	MERC Mid-Term Review Order for Rlnfra-D for FY 2012-13 to FY 2015-16	
Is there a mechanism to support low-volume consumers such as cross-subsidization, social or lifeline tariff?	Yes	

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Utility Transparency and Monitoring	Score	95.82
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
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)?		No
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

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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

Utility Creditworthiness	Score	76.49
Current ratio (working capital ratio) of selected utility	25	
EBITDA margin of selected utility	25	
Debt service coverage ratio of selected utility	25	
Days payable outstanding of selected utility	1.4905925926	

Energy Efficiency

National energy efficiency planning	Score	83.33
Is there legislation or a national action plan that aims to increase EE?	Yes	
Name of EE legislation or action plan	0	
Is there an energy efficiency goal or target at the national level?	Yes	
National target details	6.686 million tonnes of oil equivalent	
Is there a target for the residential sector?	No	
Target details	0	
Does the target have a milestone or deadline?	No	

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Is there a commercial services sector target?	No
Target details	0
Does the target have a milestone or deadline?	No
Is there an industrial sector target?	Yes
Target details	3.475 million tonnes of oil equivalent
Does the target have a milestone or deadline?	Yes
Is there a power sector target?	Yes
Target details	3.211 million tonnes of oil equivalent
Does the target have a milestone or deadline?	Yes

Energy efficiency entities	Score	85.71
Are there governmental and/or independent bodies dedicated to setting EE strategy?	Yes	
Name of entity	Bureau of Energy Efficiency	
Are there governmental and/or independent bodies dedicated to setting EE standards?	Yes	
Name of entity	Bureau of Energy Efficiency	
Are there governmental and/or independent bodies dedicated to regulating EE activities of energy suppliers?	Yes	
Name of entity	Bureau of Energy Efficiency	

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Are there governmental and/or independent bodies dedicated to regulating EE activities of energy consumers?	Yes
Name of entity	Bureau of Energy Efficiency
Are there governmental and/or independent bodies dedicated to certifying compliance with equipment EE standards?	Yes
Name of entity	Bureau of Energy Efficiency
Are there governmental and/or independent bodies dedicated to certifying compliance with building EE standards?	No
Name of entity	0
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	Bureau of Energy 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		

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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
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

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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?	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

EE incentives from electricity rate structures	Score	77.78
Residential customers		
Are customers charged a flat fee (per connection)?	No	

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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?	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

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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
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?	Yes
Industrial customers	
Are customers charged based on real-time pricing?	No

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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?	Yes

Incentives & mandates: large consumers	Score	88.89
What is the threshold for classifying large consumers?		tonnes of oil equivalent/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
Details		lower specific energy consumption
Are energy audits mandated for large consumers?		Yes
Are energy efficiency progress reports mandated for large consumers?		Yes
Interval of reports		annual
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

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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?	No
Details	0
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?	Yes
Details	Tradable energy savings certificates
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?	Yes
Primary Energy Consumption (MJ - latest GTF data from 2012)	9807024.998

Incentives & mandates: public sector	Score	25
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	

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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	66.67
Name of utility energy efficiency regulation program		
Electricity generation		
Are utilities required to carry out energy efficiency activities in this area?	Yes	
Details		heat rates
Are energy savings or other target indicators measured to track performance in meeting EE requirements?		N/A
Are the requirements measured/validated by an independent third party?		N/A
Are there penalties in place for non-compliance with EE requirements?		N/A
Are there mandates or incentives for new and/or brownfield co-generation?	Yes	
Transmission & distribution		
Are utilities required to carry out energy efficiency activities in this area?	Yes	

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Details	0.95
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?	No
Demand-side management -	
Are utilities required to carry out energy efficiency activities in this area?	Yes
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?	Yes
Do utilities provide customers incentives for demand response, such as peak-time rebates?	Yes
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

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

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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?	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?	Yes
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		
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?	Yes	

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Are credit lines available for energy efficiency investments?	No
Are energy services agreements or ESCOs available for energy efficiency investments?	Yes
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
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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?	Yes
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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?	Yes
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

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
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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?	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

Minimum energy efficiency performance standards	Score	66.67
EE standards regulations		
Refrigerators		
Have minimum energy performance standards been adopted?	Yes	
Details of standards		kWh/year
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?	No	
Air conditioners		
Have minimum energy performance standards been adopted?	Yes	

Regulatory Indicators for Sustainable Energy (RISE)

Details of standards	W/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?	No
Lighting equipment	
Have minimum energy performance standards been adopted?	Yes
Details of standards	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?	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

Regulatory Indicators for Sustainable Energy (RISE)

Other industrial equipment	
Have minimum energy performance standards been adopted?	Yes
Details of standards	KVA
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?	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

Regulatory Indicators for Sustainable Energy (RISE)

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	75
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	
Is the labeling scheme based on external/international standards?	No	
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?	Yes	
Industrial electric motors		
Have energy efficiency labeling schemes been adopted?	Yes	

Regulatory Indicators for Sustainable Energy (RISE)

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?	Yes
Is the labeling scheme mandatory?	Yes
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	
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	0
Are there energy efficiency codes for new residential buildings?	No	
Are there energy efficiency codes for new commercial buildings?	No	

Regulatory Indicators for Sustainable Energy (RISE)

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
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 code?	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	No

Regulatory Indicators for Sustainable Energy (RISE)

code?	
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
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

Carbon Pricing	Score
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		Electricity Act 2003
Is private sector ownership of renewable energy generation legally authorized?		Yes

Planning for renewable energy expansion	Score	68
Does an official renewable energy target exist?		Yes
Overall target		10,000 MW Capacity added
Solar target		5000
Wind target		4150
Hydro target		150
Biomass target		500
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

Regulatory Indicators for Sustainable Energy (RISE)

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	2012
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

Regulatory Indicators for Sustainable Energy (RISE)

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?	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;	No
Wind atlas is based on modeling inputs covering at least a 10 year period;	Yes
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

Regulatory Indicators for Sustainable Energy (RISE)

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
Hydro 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 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
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?	Yes

Regulatory Indicators for Sustainable Energy (RISE)

Does the country publish or endorse a national geothermal resource map or atlas?	Yes
The government has collected and recorded well data at potential geothermal sites?	Yes
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)?	Yes
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

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	No	

Regulatory Indicators for Sustainable Energy (RISE)

Feed-in tariff - Wind	Yes
Feed-in tariff - Hydro	Yes
Feed-in tariff - Biomass	Yes
Feed-in tariff - Geothermal	No
Government body in charge	Maharashtra Electricity Regulatory Commission
Projects guaranteed off-take	Yes
Solar Feed-in-tariff Price (\$ cents/kWh)	
Solar Feed-in-tariff Max. capacity (single)	
Solar Feed-in-tariff Max. capacity (total)	
Solar Feed-in-tariff Closing date	
Wind Feed-in-tariff Price (\$ cents/kWh)	9
Wind Feed-in-tariff Max. capacity (single)	
Wind Feed-in-tariff Max. capacity (total)	
Wind Feed-in-tariff Closing date	
Hydro Feed-in-tariff Price (\$ cents/kWh)	9
Hydro Feed-in-tariff Max. capacity (single)	25 MW
Hydro Feed-in-tariff Max. capacity (total)	NA
Hydro Feed-in-tariff Closing date	NA
Biomass Feed-in-tariff Price (\$ cents/kWh)	10

Regulatory Indicators for Sustainable Energy (RISE)

Biomass Feed-in-tariff Max. capacity (single)	1 MW
Biomass Feed-in-tariff Max. capacity (total)	NA
Biomass Feed-in-tariff Closing date	NA
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	
Competitive bidding	Yes
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)	

Regulatory Indicators for Sustainable Energy (RISE)

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	Yes
Mandates	Yes
Generation premium	Yes
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	Yes
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

Regulatory Indicators for Sustainable Energy (RISE)

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
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)?		Yes
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	67
Are there rules defining the allocation of connection costs?		No
What is the type of the connection cost allocation policy (i.e. shallow/deep)?		N/A
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

Regulatory Indicators for Sustainable Energy (RISE)

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
connection cost document	Andhra Pradesh Solar Power Policy, 2015
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	57
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		29
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

Regulatory Indicators for Sustainable Energy (RISE)

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)?	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)?	No
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

Regulatory Indicators for Sustainable Energy (RISE)

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	Eastern Power Distribution Company of Andhra Pradesh Limited (APEPDCL)
data - 17.1. Current ratio (working capital ratio)	1
data - 17.2 Debt Service Coverage Ratio	2
data - 17.3 Days payable outstanding	172
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	1
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