Readiness for Investment in Sustainable Energy (RISE)

March 18, 2015
RISE assesses enabling environment for sustainable energy

[Diagram showing energy access, renewable energy, energy efficiency, and total investment.

- Energy Access: 9 (Actual) vs. 54 (Required)
- Renewable Energy: 228 (Actual) vs. 402 (Required)
- Energy Efficiency: 180 (Actual) vs. 573 (Required)
- Total: 417 (Actual) vs. 1029 (Required)

Scale-up of Financing (both public and private)

Country Outcomes measured by Global Tracking Framework (GTF)

Market Conditions (population, income level, affordability, etc.)
- Macroeconomic Stability (inflation, price stability, etc.)
- Enabling Environment measured by RISE
- Financial Environment (local capital market, access to finance, etc.)
- Other Determinants (resource availability, risk perception, etc.)

Private Sector Participation in investment]
RISE is a unique initiative

- Aimed directly at policymakers
- Encompass all 3 pillars of SE4ALL
- Plan to cover 100+ countries
- Collect and produce primary data

http://rise.worldbank.org
RISE was developed through exhaustive quality assurance steps.

- **Identifying long list of indicators**
  - Consultations
  - Literature review

- **Two-stage Screening**
  - **Stage 1**
    - Objective
    - Comparable
    - Actionable
    - Context neutral
  - **Stage 2**
    - Available
    - Cost effective
    - Consensus

- **Consultations**
  - Consultations with private sector
  - Consultations with countries

- **Expert quality check**
  - Internal advisory group
  - External advisory group

28 RISE indicators

http://rise.worldbank.org
RISE comprises 28 indicators and 85 sub-indicators

Includes 4 cross-cutting indicators that are relevant to all three pillars of SE4ALL

- Fossil fuel subsidy
- Carbon pricing mechanism
- Utility performance
- Retail price of electricity

Indicators are grouped into four different framework categories

- Planning
- Policies and Regulations
- Pricing and Subsidies
- Procedural Efficiency

Scoring methodology

- Each indicator is scored between 0 and 100 and equally weighted
- Distance to frontier (DTF) method is applied for procedural efficiency category
- A “traffic light” indicates scores

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 75</td>
<td>for countries with a score ≥ 75, considered close to good practice</td>
</tr>
<tr>
<td></td>
<td>shows countries that are in between green and red</td>
</tr>
<tr>
<td>≤ 25</td>
<td>for countries with a score ≤ 25, presenting that they have a lot to improve to achieve good practice</td>
</tr>
</tbody>
</table>

http://rise.worldbank.org
RISE was piloted in 17 countries

The pilot includes all SREP countries of the 1\textsuperscript{st} round, but not any new countries.
Global rollout is planned for 2015

- Cover 100+ countries
- ESMAP and IRENA confirmed funding
- RISE will remain a valuable tool for SREP

Pilot lessons will be incorporated

Findings

Data availability is one of the biggest challenges. Statistical capacity building will remain an important agenda going forward. Local experts are essential to collect right information. RISE will continue to utilize local capacity.

It will attempt to establish the causality between RISE and private investment
110 countries are selected for the global rollout

Selection principles

- All RISE pilot countries
- All GTF high-impact countries
- SE4ALL opt-in countries with over 5 millions of population
- Remaining countries by population to fill 110 countries

- Going forward, country coverage will be expanded
Key Findings from the Pilot
RISE indicators in energy access

Planning

- Electrification Plan
  - National Plan
  - Coverage of Grid and Off-grid
  - Regular Update

Policies and Regulations

- Enabling Environment for RE Developers to Invest in Mini-grids
  - Existence of Regulations
  - Regulation Attributes
  - Standards
  - Protection against Expropriation
  - Subsidies or Duty Exemption

- Enabling Environment for Standalone Home Systems
  - National Program
  - Standards
  - Subsidies or Duty Exemption

Pricing and Subsidies

- Funding Support to Electrification
  - Dedicated Funding
  - Subsidy to Household Connection
  - Subsidy to Grid Extension

- Affordability of Electricity

Procedural Efficiency

- Establishing a New Connection
- Permitting a Mini-grid

Energy access indicators

Cross-cutting indicators
Most countries have developed electrification plans to some extent.

Only Liberia and Solomon Islands do not have a national electrification plan, but even these two countries have a plan in draft which is yet to be endorsed.
Subsistence level of electricity is affordable for most of the countries

Cost for subsistence electricity consumption is less than 5% of GNI per household in all countries except Liberia

http://rise.worldbank.org
Enabling environment for mini-grid needs to be improved the most

Only seven countries have regulations on mini-grids with varying attributes. Among them, only four countries have mini-grids operated by private sector.
Time/cost of getting a household electricity connection varies widely

Time ranges from 8 days in India and Solomon Islands to a year in Ethiopia
Cost ranges from US$ 10 in Mongolia to US$ 675 in Vanuatu

<table>
<thead>
<tr>
<th>Countries</th>
<th>Time (days)</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>365</td>
<td>126</td>
</tr>
<tr>
<td>Honduras</td>
<td>17</td>
<td>156</td>
</tr>
<tr>
<td>India</td>
<td>8</td>
<td>74</td>
</tr>
<tr>
<td>Kenya</td>
<td>83</td>
<td>369</td>
</tr>
<tr>
<td>Liberia</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Mali</td>
<td>18</td>
<td>86</td>
</tr>
<tr>
<td>Mongolia</td>
<td>21</td>
<td>10</td>
</tr>
<tr>
<td>Nepal</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>8</td>
<td>470</td>
</tr>
<tr>
<td>Tanzania</td>
<td>69</td>
<td>73</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>28</td>
<td>675</td>
</tr>
<tr>
<td>Yemen</td>
<td>30</td>
<td>303</td>
</tr>
</tbody>
</table>
India, Nepal and Tanzania perform well in energy access

Proportion of countries by traffic lights

0% 20% 40% 60% 80% 100%

Affordability of Electricity
Establishing a New Connection
Electrification Plan
Enabling Environment for Standalone Home Systems
Funding Allocation to Electrification
Utility Performance
Enabling Environment for RE Developers to Invest in Mini-grids
Permitting a Mini-grid

http://rise.worldbank.org
RISE indicators in renewable energy

**Planning**
- Planning for Renewable Energy Expansion
  - RE in Expansion Planning
  - RE in Transmission Planning
  - Target with an Action Plan
  - High Quality Resource Mapping

**Policies and Regulations**
- Legal Framework for Renewable Energy
- Regulatory Policies and Procurement
  - Incentives to Grid-connected RE
  - Incentives to Distributed RE
- Regulatory Policies - Policy Design Attributes
  - Predictability
  - Sustainability
  - Accessibility
  - Remuneration Efficiency
- Network Connection and Pricing
  - Connection Cost Allocation
  - Network Usage Pricing
- Public Financial Support Mechanisms
  - Credit Enhancement
  - Utility Payments Guarantee
  - Fiscal Incentives
  - Public Financing Supports

**Pricing and Subsidies**
- Fossil Fuel Subsidy
- Carbon Pricing Mechanism
  - GHG Emission Reduction Target
  - Carbon Pricing Mechanism
- Utility Performance
  - Reporting Practice
  - Financial Performance

**Procedural Efficiency**
- Starting a New Renewable Energy Project

Energy access indicators
Cross-cutting indicators

http://rise.worldbank.org
Countries with RE target often lack planning and resource mapping

Integration into expansion and transmission planning as well as high-quality resource mapping should follow to implement the target.
About half of the countries have a regulatory policy to support RE.

Feed in tariff/premium, renewable portfolio standards and auctions are equally distributed among them.
But regulatory policies differ in design attributes

Developing countries have met only part of attributes that enhances the quality of regulatory policies like feed in tariff/premium, renewable portfolio standards
The ease of getting a RE project running varies enormously

Time to obtain required licenses/permits ranges from 96 days in Maldives to 840 days in Tanzania
Denmark and US score high in renewable energy

Proportion of countries by traffic lights

- Fossil Fuel Subsidy
- Legal Framework for Renewable Energy
- Utility Performance
- Public Financial Support Mechanisms
- Starting a New Renewable Energy Project
- Network Connection and Pricing
- Planning for Renewable Energy Expansion
- Regulatory Policies and Procurement
- Regulatory Policies - Policy Design Attributes
- Carbon Pricing Mechanism
RISE indicators in energy efficiency

### Planning
- National Plan for Increasing Energy Efficiency
  - National EE Target
  - EE Legislation/Action Plan
  - Sub-sectoral Targets
- Entities for EE Policy, Regulation and Implementation
  - Setting EE policy
  - Setting EE standards
  - Regulating EE activities of suppliers
  - Regulating EE activities of consumers
  - Equipment standards compliance
  - Building standards compliance
- Quality of Information Provided to Consumers
  - Reports on Electricity Usage
  - Quality of Information in Report
  - Comparison with Other Users
  - Energy Saving Information
- Incentives or Mandates for Energy Supply Utilities
  - Mandates for Utilities
  - Penalties for Non-compliance
  - Measurement of Savings
  - Third Party Validation
  - Cost Recovery for Utilities
- Incentives or Mandates for Public Entities
  - Obligations for Public Buildings
  - Obligations for Other Public Facilities
  - Public Procurement of EE Products
  - Multi-year Contracts
  - Allowance to Retain Savings

### Policies and Regulations
- Incentives or Mandates for Large-scale Users
  - Mandates for Large-scale Users
  - Penalties for Non-compliance
  - Measurement of Savings
  - Incentives for Large-scale Users
- Minimum Energy Efficiency Performance Standards
  - Appliances
  - Lighting
  - Electric Motors
  - Industrial Equipment
  - Regular Update
  - Penalties for Non-compliance
- Energy Labeling System
  - Appliances
  - Lighting
  - Electric Motors
  - Industrial Equipment
- Building Energy Codes
  - Residential Buildings
  - Commercial Buildings
  - Compliance System
  - Renovated Buildings
  - Building Energy Information

### Pricing and Subsidies
- Incentives from Electricity Pricing
  - Electricity Pricing
  - Charges to Large Customers
- Fossil Fuel Subsidy
- Carbon Pricing Mechanism
  - GHG Emission Reduction Target
  - Carbon Pricing Mechanism
- Retail Price of Electricity
Only four countries have national energy efficiency targets

About half of the pilot countries do not have any target, legislation or action plan.
Only about a third of the countries have building energy codes. Compliance system or application to renovated buildings is not prevalent among them.
Denmark and US are farthest ahead in energy efficiency

Proportion of countries by traffic lights

- Fossil Fuel Subsidy
- Quality of Information Provided to Consumers
- Incentives from Electricity Pricing
- Entities for EE Policy, Regulation and Implementation
- Energy Labeling Systems
- National Plan for Increasing EE
- Minimum Energy Efficiency Performance Standards
- Incentives or Mandates for Large-scale Users to Invest in EE
- Incentives or Mandates for Public Entities to Invest in EE
- Incentives or Mandates for Energy Supply Utilities to Invest in EE
- Carbon Pricing Mechanism
- Building Energy Codes

http://rise.worldbank.org
India performs the best in RISE among developing countries

* Armenia, Chile, Denmark, Maldives and the U.S. were given full points to energy access as they do not have access challenges
Thank you