



Renewable Energy for Sierra Leone (REESL)

A Roadmap to Energise Rural Sierra Leone

August 2013

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1 Introduction

1.1 The REESL Project

In December 2012, Environmental Foundation for Africa (EFA) secured funding for the following project initiative:

Renewable Energy Empowerment in Sierra Leone (REESL) – A vision to electrify rural Sierra Leone.

(referred to hereafter as “the REESL Project”)

The REESL Project was launched by EFA, in partnership with the Ministry for Energy , Njala University, the Government Technical Institute and the ERM Foundation. Project funding was provided by the Climate and Development Knowledge Network (CDKN). The primary project objective of the REESL Project was as follows:

Lead the execution of a successful innovative process, which catalyses innovation in the Renewable Energy (RE) sector and RE development for rural communities.

The REESL Project involved the following key tasks:

1. Carry out six months of national-level baseline information-gathering across Sierra Leone to examine:
 - the existing and potential availability, applications and socio-economic implications of renewable energy (RE) technology; and
 - opportunities for innovation and social benefit.
2. Establish a RE “Knowledge Base” of credible RE information and materials to inform and facilitate RE development.
3. Develop a network of stakeholder relationships and contacts, connecting those with interests in the RE sector within Sierra Leone and further afield.
4. Host a multi-stakeholder Innovation Workshop (and Renewable Energy Fair) to develop a roadmap and catalyse innovation and RE development for rural communities.

As part of Task 4 (listed above), the REESL team hosted the first ever *National Innovation Workshop* at EFA’s *Biodiversity and Renewable Energy Learning Centre* on Peninsular Road, outside Freetown. This workshop took place on the 18th and 19th of July.

The workshop was developed as a multi-stakeholder initiative involving representatives from the Government of Sierra Leone, the Environmental Protection Agency (EPA), Non-Governmental Organisations (NGOs), civil society, the academic sector, the private sector, rural communities and other relevant stakeholder groups.

Over the course of the two days, the REESL team and workshop attendees worked together to engender and share the knowledge, attitudes and actions needed to catalyse development of the RE sector and empower each of the workshop attendees as “Renewable Energy Ambassadors” who could continue to support development of this RE for communities over the next 12 months. This Roadmap (i.e. this document) has emerged as a key output from that workshop – to reflect the thoughts and contributions of workshop attendees and the mandate that has been established at the workshop by the Renewable Energy Ambassadors.

1.2 *What is a Roadmap?*

A roadmap matches short-term and long-term goals with the specific actions that are required to help realise those goals. It is a plan, which sets out:

- Where are we right now i.e. the current status of the RE sector, relevant to rural communities;
- Where do we want to go i.e. the vision of the Renewable Energy Ambassadors and the REESL team for RE development and rural communities; and
- How do we get there i.e. the key steps to be taken to realise this vision

To develop this roadmap, the REESL team designed a number of workshop sessions to encourage the RE Ambassadors to articulate, discuss and share:

- Where do we want to go (i.e. “our collective vision”); and
- How do we get there?
 - Where are we now?
 - Where are there opportunities for change and where do we need to make changes? and
 - What are the initial actions (key steps) that we need to take to realise those opportunities?

1.3 *What is the purpose of this Roadmap?*

This Roadmap has developed to share the outcomes of the National Innovation Workshop and to fulfil the following immediate objectives.

- Communicate our collective vision for the RE Sector, as articulated by the REESL ambassadors at the workshop;
- Communicate the expectations that we have for one another when working together to develop the RE sector; and
- Share and honour the voluntary commitments that were made by the various stakeholders at the workshop in response to our “call for action”.

Longer-term, we envisage this Roadmap being an important first step to:

- catalyse collaboration and information sharing;

- develop the mandate that is needed to respond to the current “power poverty” facing rural communities in Sierra Leone;
- develop commitment and buy-in for a campaign of immediate and on-going actions to tackle this issue; and
- provide a framework to guide the development of co-ordinated, innovative and collaborative response.

The remainder of this Roadmap is structured as follows:

- | | |
|---|---|
| Section 2:
Where do we want to go? | This section sets out the collective vision for the RE Sector, as articulated by the REESL ambassadors using coloured cards and the “Future Times” Newspaper on Day 1. |
| Section 3:
How do we get there? | This section sets out the existing RE landscape (as examined during the baseline surveys and briefly discussed during the RE Quiz session) the Ambassador Expectations (or call for action), the resulting action plan. |

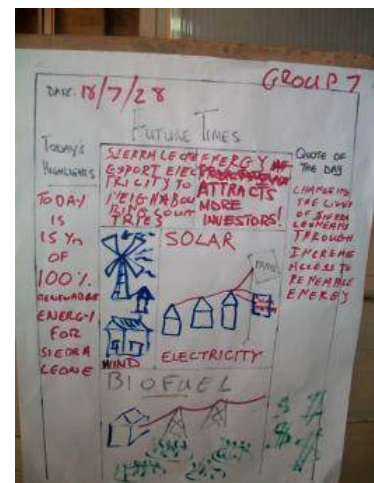
In each section, the information that is presented reflects that which was discussed at the workshop and generated by the ambassadors. As such this roadmap is fully owned by the ambassadors and the REESL team would like to thank each individual for their contribution.

2 *Where do we want to go?*

The overarching vision of the ambassadors was:

“A Rural Sierra Leone fully Empowered by Renewable Energy”

During the workshop, the ambassadors were asked to envisage themselves as editors of the “Future Times”, a newspaper to be produced in Freetown 15 years from now. That newspaper would celebrate the successful achievement of the Ambassadors vision (i.e. rural communities fully empowered by renewable energy) and would feature a number of stories, pictures and testimonies celebrating this achievement. The resulting newspapers were reviewed by the REESL team and collectively articulate the REESL Vision shown overleaf.



The REESL Vision

Our Vision is a Rural Energy Empowerment of Sierra Leone (REESL); a rural Sierra Leone that is fully empowered by renewable energy; a rural Sierra Leone with reliable access to affordable power.

As REESL Ambassadors, we understand that efforts to tackle power poverty are critical to economic development and improved standards of living for rural communities in Sierra Leone. Hydropower, solar power and biomass have significant potential to help Sierra Leone on the journey from power poverty to self-sufficiency. By focusing on the core areas of lighting, cooking, transport and sustainable resource use, we can realise a better future for Sierra Leone.

As Ambassadors for Renewable Energy, we recognise that we all as individuals in our communities and in our organisations, have the power to catalyse change and advocate renewable energy. As we look to the future, we envisage economic growth, employment opportunities, development and improved quality of life - all powered by affordable renewable energy.

We envisage a future where we each help identify the actions to be taken in our own lives, in our homes and in our organisation - to effect change and develop renewable energy for rural communities. To catalyse development of renewable energy we, as REESL Ambassadors, will:

- work collaboratively to ensure opportunities to develop renewable energy for rural communities are realised, and consideration of communities is integral to development of the sector;
- define realistic and achievable objectives supporting our collective vision, working together to achieve those objectives and continually improve access to power in rural areas;
- actively support the development and implementation of a stream-lined regulatory framework, which stimulates development and implementation of renewable energy projects and technology;
- encourage the development of sound RE policy to stimulate and catalyse investment, promote sustainable economic development, improve food security, alleviate poverty and foster environmental stewardship;
- embrace research and development to advance the availability and feasibility of renewable energy; and
- identify and help catalyse responsible development of RE projects of strategic importance including projects, which stimulate economic growth and social well-being, particularly benefitting the rural poor and vulnerable groups.

Signed: _____

REESL Ambassador(s)

Date

3 *How do we get there?*

3.1 *Current levels of RE development*

In advance of the National Innovation Workshop, the REESL team carried out 6 months of baseline community surveys across Sierra Leone to develop a preliminary understanding of current levels of energy use, power demand and community needs. At the REESL workshops, the data that was collected as part of those surveys was discussed by the Ambassadors as part of an interactive quiz session and further discussions regarding the status of RE developments in Sierra Leone were held over the course of 2-day workshop. A number of key points were raised and this information is summarised below as Strengths, Weaknesses, Opportunities and Threats (i.e. SWOT Analysis) facing the RE sector in Sierra Leone and focusing on factors relevant to empowerment of rural communities.

The team notes that the SWOT Analysis presented below is not comprehensive and simply reflects a snapshot of the views of those present at the workshops and initial thoughts on this matter. Further research and peer review is required to verify the accuracy of the analysis shown.

Table 3.1 SWOT Analysis of the RE Sector in Sierra Leone

Strengths	Weaknesses
<ul style="list-style-type: none"> • Abundant solar resources and hydropower potential. • Sierra Leone has been identified as a pilot SEFA country? • Some existing legislation and policy is already in place. • Many NGOs are doing great work in local areas around Sierra Leone. • Developing core group of involved/engaged/active stakeholders. • Major biomass and hydropower projects of strategic importance are under development by the private sector. • People willing to adopt new technology and ideas when it is a good fit. 	<ul style="list-style-type: none"> • Low level of knowledge and awareness regarding RE technology • Knowledge/experts are compartmentalised - no established forums by which information/knowledge can be shared. • Policy is not always well-informed by adequate research/information and issues with implementation and enforcement. • Limited financial resources. Funding and investment greatly needed. Difficult to borrow money and raise capital. • Low capacity on the ground to implement national/regional initiatives. • Disconnected stakeholder groups and low level of collaborative/strategic work. • Limited capacity/culture of RE maintenance
Opportunities	Threats
<ul style="list-style-type: none"> • Abundant solar resources and hydropower potential. • Develop a network of Ambassadors connecting the key players in the sector and promoting collaboration. • Develop projects to take advantage of abundant sun and rain (seasonal) for solar and hydropower. • Solar, biomass and hydropower have potential to be of national strategic importance. • Attract international NGOs to work with Sierra Leone NGOs and help capacity-building. • Attract international investment as part of the United Nations Sustainable Energy For All (SEFA) initiative. 	<ul style="list-style-type: none"> • Rural areas are underrepresented and RE developments focus on cities. • Land grabbing continues and access to land becomes more difficult. • Strategic power projects export power or send all power to Freetown, excluding the rural poor. • RE projects are not maintained and/or are vandalised by communities. • Deforestation and use of solid biomass continues and exceeds carrying capacity of environment.

3.2 Stakeholder expectations for RE development

As part of the National Innovation Workshop, the REESL team endeavoured to have representatives from the six active “stakeholder groups” in the RE sector in Sierra Leone. These six stakeholder groups were as follows.

- Communities;
- NGOs/Civil Society;
- Academia;
- Donor organisations;
- Private Sector; and
- Regulatory/Administrative Authorities.

At the National Innovation Workshop, many attendees were meeting representatives from each of the stakeholder groups for the first time. Consequently, the team felt it would be beneficial to facilitate a session where the attendees could communicate their expectations for each stakeholder group and each other, to articulate how each group could contribute to the realisation of the REESL Vision. As part of an initial session, each individual noted down the actions that they could take, or change, as an individual in their own home, community and organisation - to support development of RE in Sierra Leone (i.e. “what they could each do, and stop doing”). These actions were recorded on colour cards. The colour cards of each individual were shared with the wider group and two Ambassadors arranged the cards into clusters. Review of the clusters indicated that the majority of the personal and collective actions relating to the following focus areas.



- Cooking
- Lighting
- Transport
- Waste management (i.e. sustainable resource use)

Following on from this session focusing on personal responsibilities, the Ambassadors then worked in mixed groups to define their expectations for each stakeholder group. Each Ambassador was asked to articulate their perception of the role and responsibilities of each stakeholder group and how each group could potentially catalyse the empowerment of rural communities and development of RE. The results of that session are summarised overleaf.

Table 3.2 *Ambassador expectations for each stakeholder Group*

EXPECTATIONS	Communities	NGOs/ Civil Society	Academia	Private Sector	Regulatory/Administrative/Governmental Authorities
	<ul style="list-style-type: none"> • Get involved, from Day 1, to ensure their needs and understood and voice is heard. • Fully participate in the development of community RE projects. • Contribute to market studies and studies of community needs. • Take ownership of any RE facilities that are provided. • Ensure security of RE assets in communities. • Maintain equipment/ assets, where relevant. 	<ul style="list-style-type: none"> • Support capacity-building. • Implement initiatives to help raise awareness, share knowledge and information. • Collaborate with the government and private sector. • Hold the government to account. • Facilitate and monitor implementation of RE projects on the ground. 	<ul style="list-style-type: none"> • Lead RE research. • Support capacity-building through provision of relevant training programmes. 	<ul style="list-style-type: none"> • Develop strategic RE power projects. • Provide jobs and support capacity-building. • Catalyse community-led microenterprise. • Support RE entrepreneurs. • Form partnerships to share skills regarding RE development/sales and business management skills. • Engage stakeholders when acquiring land for RE projects. • Develop/Import/Provide affordable RE equipment e.g. solar lamps. • Collaborate with communities regarding sale/distribution of RE products. • Decentralise distribution of RE power and consider rural communities. • Introduce a CSR policy incorporating commitments and objectives that align with the REESL vision. • Identify opportunities for better waste and resource management and implement RE projects involving biomass recycling. 	<ul style="list-style-type: none"> • Work collaboratively with the private sector and donor organisations to develop projects of strategic importance. • Support joint ventures, shared ownership and public-private-partnership, where necessary to reduce the costs of RE developments. • Develop hydropower, biomass and solar projects. Introduce PV installations in rural areas • Carry out a cost-benefit analysis to identify fiscal policies that can catalyse development of the RE sector, including but not limited to: <ul style="list-style-type: none"> – duty waivers (maybe for a defined period) for RE equipment; – phasing out of incandescent imports; – higher taxes on non-RE equipment; – waivers and subsidies for RE technologies or projects; and – any other measures that would help create a good investment environment for RE. • Review the existing legislative/policy framework in consultation with stakeholders to identify regulatory or policy-based mechanisms supporting development of RE including but not limited to: <ul style="list-style-type: none"> – additional or improved Energy/Environmental policy; – harmonisation of the Ministry of Power/Trade and empowerment of the energy division of the MoE; – domestication of global RE legislation and good practice; – policy and guidance aimed towards making land more available for sustainable development of RE projects; and – any other measures that would help create a good investment environment for RE. • Implement local labour policies and make provisions for alternative livelihoods • Raise public awareness regarding RE through national communications, consultations and engagement. <p><u>Township Authorities</u></p> <ul style="list-style-type: none"> • Implement environmental by-laws supporting sustainable RE development • Identify and enforce use of designated waste areas

3.3

Action plan

Following on from the “Expectations” session of the workshop, each Ambassador was asked to identify the Stakeholder Group to which they belonged, and work together with other members of that stakeholder group to consider what actions they could take to respond to the expectations that were articulated by others. As such, each stakeholder group were asked to consider the expectations in *Table 3.2* as a “call to action”, and to brainstorm how they could respond to that call – as individuals, as representatives in their respective organisations, in their communities and as a stakeholder group.

The groups were asked to focus on actions that could be implemented in the next 12 months – to improve the likelihood of momentum being maintained in the next 12 month period and to ensure Ambassadors focused on practical and feasible, critical actions, including “quick wins”, where appropriate.

The following section presents the collective commitments that were volunteered by each of the stakeholder groups with respect to actions to be taken in the next 12 months to catalyse development of RE and realisation of the REESL Vision.

Table 3.3 *Voluntary Commitments of each Stakeholder Group*

	Communities	Non-Governmental Organisations	Academia	Private Sector	Regulatory/ Administrative/ Governmental Authorities
VOLUNTARY COMMITMENTS	<p>In the next 12 months we will:</p> <ul style="list-style-type: none"> • provide effective local labour and community members to support RE project development in our community; • volunteer community members to be trained as RE service providers and maintenance personnel; • ensure that the community members who are trained regulate the use of RE equipment, regularly check it, maintain it and help ensure its security; • sensitise communities to the value of RE through communication and consultation; and • take ownership of RE facilities, where appropriate, and implement effective by-laws to safeguard them. <p>We will:</p> <ul style="list-style-type: none"> • Contribute effectively to any market studies and studies of community needs in our area to determine the value of RE projects and the costs associated with operation and maintenance. <p>We will:</p> <ul style="list-style-type: none"> • Encourage our community people to reduce deforestation of the western area; and • buy RE equipment, where appropriate, to ensure more energy efficient lighting and cooking. 	<p>In the next 12 months, we will:</p> <ul style="list-style-type: none"> • work with relevant institutions (e.g. the GTI, international NGOs, the private sector and the government) to train youth regarding RE installation, maintenance, repair and monitoring (and provide start-up kits, if possible); • lead/facilitate RE research: <ul style="list-style-type: none"> – look at international best practice and identify affordable and cost effective RE; and – investigate cost-effective and feasible RE projects and technologies for rural communities. • disseminate and share research findings, government policy and knowledge regarding RE and raise awareness in communities through community workshops, local radio, exhibitions and other traditional activities; • organise a workshop for local NGOs on RE - supported by international NGOs, government and local stakeholders – to agree detailed action plans; • develop a “Yellow Pages” directory of RE Ambassadors, stakeholders and useful contacts. • hold government accountable: track expenditure on RE, ensure quality in the supply of RE products and equipment, support the RE department of the MoE; • participate in policy development and implementation; • monitor implementation of RE projects on the ground (develop metrics and monitoring methods); and • facilitate engagement (bottom up and top down) and lobby donors regarding international financing and investment. 	<p>In the next 12 months we will:</p> <ul style="list-style-type: none"> • form a group of active researchers; • develop a prioritised list of research topics; • develop at least one relevant research proposal; • identify individuals who can train-the-trainer; • define a RE training curriculum or programme; and • facilitate provision of training and capacity-building of relevant expertise. 	<p>In the next 12 months we will:</p> <ul style="list-style-type: none"> • Develop company RE/CSR policies, objectives and strategies that align with the REESL Vision. • Implement RE projects that empower rural communities and address the focus areas of lighting, cooking and/or transport. • Work with NGOs to engage communities from Day 1 when developing RE projects to provide technical training to youth regarding installation, operation and maintenance and to sensitise communities regarding the value of RE. • Support local RE entrepreneurs and community-based RE projects and companies e.g. with training, resources, distribution and marketing. • Develop clear procedures guiding the land-use and acquisition and ensuring more effective consultation with communities. • Investigate opportunities and implement projects relating to waste management and alternative use of waste as an energy resource. 	<p>In the next 12 months we will:</p> <ul style="list-style-type: none"> • Work collaboratively with the private sector and donor organisations to develop projects of strategic importance. • Develop microhydro projects and PV Installation in rural areas. • Secure resources and mandate needed to carry out a review and cost-benefit analysis of the existing legislative and policy framework governing RE development (fiscal policy, environmental policy, energy policy and RE policy) and identify measures supporting development of RE. • Implement local labour policies when developing RE projects and ensure project plans include provisions for alternative livelihoods where appropriate. • Raise public awareness regarding RE through national communications, consultations and engagement.

3.4

Co-ordinated action

At every stage during the two day National Innovation Workshop, Ambassadors voiced their belief in the need for co-ordinated action to catalyse strategic development of renewable energy. As indicated in *Section 3.1*, a number of RE projects are already underway in rural communities all over Sierra Leone but many Ambassadors were not aware of these projects and had not previously engaged with key members of other stakeholder groups working in this sector. A primary objective of the workshop was therefore to create a network for empowered Ambassadors who could continue to work together going forward to catalyse innovation in this sector. The REESL team believes this Roadmap, in its current form, will help empower each Ambassador to develop their own individual/company RE strategy as it provides sufficient insight into the current status of the RE market, the vision for Sierra Leone and the priority steps that can be implemented by each group in pursuit of that vision.

As noted in *Section 1.1*, the REESL Project was launched by Environmental Foundation for Africa (EFA) with funding from the Climate and Development Knowledge Network (CDKN). EFA are currently progressing an application for extended funding to continue the co-ordination role they have adopted to date. Should that application be successful, EFA envisages a number of additional meetings and workshops over the course of the next 24 months to further catalyse development and innovation in this area and help co-ordinate the actions needed to achieve the REESL Vision. With that in mind, the REESL team have developed a short list of Priority Actions that each Ambassador can implement in the next month, and in advance of the next meeting. This list of priority actions is provided overleaf. We would ask each Ambassador to review the actions listed, implement them to the best of your ability in the next four weeks and provide any feedback to EFA.

Table 3.4 *Priority actions for all Ambassadors*

	Stakeholder Group					Complete?	
	Non-Governmental Organisations	Private Sector	Government/Regulatory/ Administrative Authorities	Communities	Academia		
Priority Actions for Ambassadors	We will:	We will:	We will:	We will:	We will:	<input type="checkbox"/>	YES
	<ul style="list-style-type: none"> Read the REESL Vision, sign it and post it in the area where I work. 	<ul style="list-style-type: none"> Read the REESL Vision, sign it and post it in the area where I work. 	<ul style="list-style-type: none"> Read the REESL Vision, sign it and post it in the area where I work. 	<ul style="list-style-type: none"> Read the REESL Vision, sign it and post it in my community. 	<ul style="list-style-type: none"> Read the REESL Vision, sign it and post it in the area where I work. 	<input type="checkbox"/>	NO
	<ul style="list-style-type: none"> Talk about the RE vision within my organisation and with my colleagues. 	<ul style="list-style-type: none"> Talk about the RE vision within my organisation and with my colleagues. 	<ul style="list-style-type: none"> Talk about the RE vision within my organisation and with my colleagues. 	<ul style="list-style-type: none"> Talk about the RE vision within my community. 	<ul style="list-style-type: none"> Talk about the RE vision within my organisation and with my colleagues. 	<input type="checkbox"/>	YES
	<ul style="list-style-type: none"> Talk to at least three people about the National Innovation Workshop and any insights/knowledge I gained at the workshop. 	<ul style="list-style-type: none"> Talk to at least three people about the National Innovation Workshop and any insights/knowledge I gained at the workshop. 	<ul style="list-style-type: none"> Talk to at least three people about the National Innovation Workshop and any insights/knowledge I gained at the workshop. 	<ul style="list-style-type: none"> Talk to at least three people about the National Innovation Workshop and any insights/knowledge I gained at the workshop. 	<ul style="list-style-type: none"> Talk to at least three people about the National Innovation Workshop and any insights/knowledge I gained at the workshop. 	<input type="checkbox"/>	YES
						<input type="checkbox"/>	NO
	<ul style="list-style-type: none"> Talk about the REESL Roadmap within my organisation, including the Ambassador expectations for NGO's and the voluntary commitments made by NGOs. 	<ul style="list-style-type: none"> Talk about the REESL Roadmap within my organisation, including the Ambassador expectations for the private sector and the voluntary commitments made by the private sector. 	<ul style="list-style-type: none"> Talk about the REESL Roadmap within my organisation, including the Ambassador expectations for my group and the voluntary commitments made by my group. 	<ul style="list-style-type: none"> Talk about the REESL Roadmap within my community, including the Ambassador expectations for communities and the voluntary commitments made by communities. 	<ul style="list-style-type: none"> Talk about the REESL Roadmap within my community, including the Ambassador expectations for the academic sector and the voluntary commitments made by the academic sector. 	<input type="checkbox"/>	YES
						<input type="checkbox"/>	NO
<ul style="list-style-type: none"> Do the REESL Quiz with my colleagues. 	<ul style="list-style-type: none"> Do the REESL Quiz with my colleagues. 	<ul style="list-style-type: none"> Do the REESL Quiz with my colleagues. 	<ul style="list-style-type: none"> Do the REESL Quiz with my colleagues. 	<ul style="list-style-type: none"> Do the REESL Quiz with my colleagues. 	<input type="checkbox"/>	YES	
					<input type="checkbox"/>	NO	
<ul style="list-style-type: none"> Record any questions asked by others, the level of interest in similar initiatives, and report back to EFA. 	<ul style="list-style-type: none"> Record any questions asked by others, the level of interest in similar initiatives, and report back to EFA. 	<ul style="list-style-type: none"> Record any questions asked by others, the level of interest in similar initiatives, and report back to EFA. 	<ul style="list-style-type: none"> Record any questions asked by others, the level of interest in similar initiatives, and report back to EFA. 	<ul style="list-style-type: none"> Record any questions asked by others, the level of interest in similar initiatives, and report back to EFA. 	<input type="checkbox"/>	YES	
					<input type="checkbox"/>	NO	

