

Empowering Lives Through Solar Power & Technology



Summary

Energy plays a crucial role in sustainable socio-economic development. Energy has various implications for poverty alleviation, population, health and the environment and invariably influencing the pace of industrial, agricultural and socio-economic development of a nation. Efficient energy production processes can enhance rural/urban and large/small scale industrial development, hence more affordable means of production of goods and services. Sierra Leone finds itself in the unenviable position of being energy deficient. Sierra Leone has a population of 6.4 million. Less than 10% of the population has access to some form of power. Tens of thousands of kids and youths in Sierra Leone study at night using kerosene lanterns and open-flame candles. Many of them are unable to benefit from education programs that are broadcast by the Education Ministry because they do not have radios or batteries. This project will provide renewable technology including solar lamps and solar radios, solar-powered eReaders / laptops - focused on providing a safe and less expensive way for the future leaders of Sierra Leone to study.

Challenge

The 2015 Africa Progress Report states that "600 million people still do not have access to modern energy" and at today's current rate of improvement, every resident of Africa will not have working power until 2080. Children and youths need a reliable source of light and technology to enable them to complete their education and become the leaders of tomorrow.

Because of scarce supply and high costs, electricity represents only 7% of total energy consumption. The large majority of Sierra Leone's population is forced to rely on inefficient and polluting traditional fuels to meet their basic needs, such as kerosene for lighting and fuel-wood and charcoal for cooking. The smoke and flames from kerosene lanterns and open-flame candles are a health risk and hazardous resulting in adverse impacts on personal health and safety as well as on the environment. Current power generation capacity, transmission and distribution remains inefficient and inadequate to accommodate the country's overall power requirements.

Government-owned installed capacity is estimated to be approximately 90 MW, which includes the 50 MW Bumbuna hydroelectric power plant, two thermal power plants at Kingtom (10 MW) and Blackhall Road (16.5 MW), that serve the Freetown Capital Western area. Hydropower from Bumbuna is seasonal, producing less than 20 MW during the dry season often being out of action for days or even weeks. This is a dire situation.

Solution

This project empowers education through safe, renewable and environmentally-friendly devices. These devices include solar lights, solar radios, solar powered eReaders and laptops etc. The kids and youths will now be able to read safely at night - with no risk to their health or lives. Solar-powered technology is a reliable and less expensive solution to the lack of electricity. This use of renewable energy will additionally have a positive impact on global warming and climate change.

Long-Term Impact

The project is an effective intervention that will provide renewable energy and technology to kids and youths as they study. It will save the families hundreds of dollars in recurring expenses over 2-3 years. Also, we will be eliminating the potential for house fires. By providing on-going and consistent power to tools / devices, the educational efforts of the kids and youths will be multiplied. They will additionally have access to additional learning resources. Also, in addition to being environmentally friendly, these devices are easy to install with low energy costs, little maintenance, no emissions, no risk of electrocution and the lights are cool to the touch, making them safe for children. Solar lights continue working even if there has been a power outage. Because the energy isn't coming off of an electrical grid, power outages make no difference. These advantages extend to both the wallet and the environment. In addition to all of this, the benefits of solar lighting are only destined to increase as solar technology advances.



Resources

<http://www.developafrica.org>

[2015 Africa Progress Report](#)

[Replacing Kerosene Lamps with Solar Lighting](#)

[Sustainable Africa](#)

[Energy sector is key to powering prosperity in sub](#)

<https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/10254.pdf>

<http://www.academicjournals.org/journal/JEIF/article-full-text-pdf/DBE0ED72180>

<http://www.solarhome.org/infobenefitsofsolarlighting.html>



Develop Africa, Inc.

LOCATION: Johnson City, Tennessee - USA

WEBSITE: <http://www.developafrica.org>

Facebook Page-<http://www.facebook.com/developafrica>

Twitter Page-<http://www.twitter.com/developafrica>

Google + Page - <https://plus.google.com/b/112795165718965455623/+DevelopafricaOrg/posts>

YouTube - <http://www.youtube.com/developafrica>

Empowering lives in Africa so that they can better themselves, their communities and their nations

Develop Africa was established in 2006 and is a 501c3 non-profit organization is working to establish meaningful and sustainable development in Africa. Develop Africa was birthed out of the vision that human resource development is the key to improving nation building capacity in Africa. Develop Africa is involved in a range of programs in Africa supporting education, microfinance and small businesses, job skills / leadership development training etc.

Through training, scholarship, investment and partnerships Develop Africa is helping to develop Africa's people through the promotion of transformational education, resource development, investment training and strategic empowerment. Our premise is based on the notion that in order to change one's personal, national or organizational status there must necessarily be a "change in the thinking and processing pattern of the mind."

We envision an African continent fully developed in terms of its human and resource capacity, free from poverty; ignorance, and civil conflict and where the poorest and most vulnerable people become "leaders" and effectively manage their national resources.

We are involved in the following targeted activities:

- care for orphans

- job skills training
- microfinance / micro-lending and small business training
- scholarships
- books, school and teaching supplies
- basic computer training and computers
- mosquito nets, vitamin supplements, start up tool kits (such as sewing machines), school uniforms, Personal Protective Equipment for health workers etc.

Examples of specific activity: We provide -

- job skills training
- microfinance / micro-lending and small business training
- scholarships
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Sierra Leone- Full Country Profile available at https://en.wikipedia.org/wiki/Sierra_Leone

Sierra Leone (ⁱ/sɪˈɛərəˈliːoʊni, ⁱ-liːoʊn/)^[5] officially the **Republic of Sierra Leone**, is a country in [West Africa](#). It is bordered by [Guinea](#) on the north, [Liberia](#) in the south-east, and the [Atlantic Ocean](#) in the south-west. Sierra Leone has a [tropical climate](#), with a diverse environment ranging from [savannah](#) to [rainforests](#). Sierra Leone has a total area of 71,740 km² (27,699 sq mi)^[6] and a population of 7,075,641 (based on 2015 national census).^[1] Sierra Leone is divided into four geographical regions: the [Northern Province](#), [Eastern Province](#), [Southern Province](#) and the [Western Area](#), which are subdivided into [fourteen](#)

districts. Freetown is the capital, largest city and its economic and political centre. Bo is the second largest city. The other major cities are Kenema, Makeni, and Koidu Town.

About sixteen ethnic groups inhabit Sierra Leone, each with its own language and customs. The two largest and most influential are the Temne and the Mende people. The Temne are predominantly found in the north of the country, while the Mende are predominant in the south-east. Although English is the official language spoken at schools and government administration, the Krio language is the most widely spoken language across Sierra Leone and is spoken by 97% of the country's population. The Krio language unites all the different ethnic groups in the country, especially in their trade and social interaction with each other.

Sierra Leone is a predominantly Muslim country,^{[7][8][9]} though with an influential Christian minority.^[10] Sierra Leone is regarded as one of the most religiously tolerant nations in the world. Muslims and Christians collaborate and interact with each other peacefully. Religious violence is very rare in the country.

Sierra Leone has relied on mining, especially diamonds, for its economic base. It is also among the largest producers of titanium and bauxite, a major producer of gold, and has one of the world's largest deposits of rutile. Sierra Leone is home to the third-largest natural harbour in the world. Despite exploitation of this natural wealth, 70% of its people live in poverty.^[11]

Sierra Leone became independent in 1961. Government corruption and mismanagement of the country's natural resources contributed to the Sierra Leone Civil War (1991 to 2002), which for more than a decade devastated the country. This proxy war left more than 50,000 people dead, much of the country's infrastructure destroyed, and over two million people displaced as refugees in neighbouring countries.

More recently, the 2014 Ebola outbreak overburdened the weak healthcare infrastructure, leading to more deaths from medical neglect than Ebola itself. It created a humanitarian crisis situation and a negative spiral of weaker economic growth. The country has an extremely low life expectancy at 57.8 years.^[10]

Sierra Leone is a member of many international organisations, including the United Nations, the African Union, the Economic Community of West African States (ECOWAS), the Mano River Union, the Commonwealth of Nations, the African Development Bank, and the Organisation of Islamic Cooperation.