

Annual Report 2011

Outlook 2012



A report on the progress of the promotion of solar energy in Kenya, Cameroon and Switzerland and the collaboration with World Organization of Scout Movement on the development of Solar Badge for Scouts.

Report by:

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EXECUTIVE SUMMARY

2011 was a year of mixed challenges and successes in many ways. The solar LED lamp production unit in Kenya was boosted with the construction of a new workspace. The quality of the lamp has since improved but uptake in the Kenyan market has stagnated due to high cost of production materials and a high influx of cheap solar products in the local market especially from China and India. However, export of the lamps to the Swiss market has improved but not yet optimum.

We initiated a pilot solar power for school project in Kenya with the aim of providing better learning environment for students. The other goal is to sensitize communities to embrace solar energy and use it in their homes. Besides, there are more opportunities for solar system for private homes especially the 90 percent poor households who use kerosene and firewood for their lighting and cooking needs. We are working with our local partners to supply these poor households with sustainable solar systems at affordable rates.

Solafrica.ch has continued to grow as an organization in 2011. Our collaboration with the World Organization of Scout Movement (WOSM) has opened up new avenues to reach out to young Scouts. Solafrica.ch has developed a solar badge programme that encompasses various solar activities that captures this knowledge to help Scouts learn and use solar energy more effectively in line with scouting principles of living in harmony with nature.

The Climate and Forest Solutions caravan, our flagship project in Cameroon is working with 15 communities by providing solar energy and efficient stoves and improving lives. We train solar technicians in the communities and mobilize them to protect the forest and use the forest sustainably so that the future generation can benefit from it as well.

In Switzerland, we have acquired solar vignette, where we sell solar electricity to customers for their mobile phones, E-bikes and laptops. The profits gained are invested in various solar projects in Switzerland, Kenya and Cameroon.

We are happy to report a successful year, with 2 awards and we thank our donors, partners and volunteers for their tireless contributions. However, much more still needs to be covered next year and we have already planned various activities, as outlined in the outlook 2012.



ABOUT SOLAFRICA.CH

VISION

To improve people's lives by providing sustainable and efficient energy solutions and services to underserved households, communities and schools, through full involvement of youths, Scout organizations and communities.

MISSION

To develop and promote the growth and uptake of solar and other energy efficient solutions, through training, capacity building and providing necessary and suitable materials adapted to the needs of customers.

PEOPLE

BOARD MEMBERS

Dr. Kuno Roth	President
Andres Wirz	Vice president
Marc Lombard	Treasurer
Joshiah Ramogi	Member/ Secretary
Christian Gyr	Project Manager Cameroon/ Congo

STAFF IN SWITZERLAND

Joshiah Ramogi	Executive Director
Stefanie Luginbühl	Project Manager Solarvignette
Nina Waldispühl	Fundraising and Marketing
Gabriela Schneider	Fundraising and Marketing

STAFF IN KENYA

Elizabeth Otieno	Project coordinator
Judy Wandia	Production and Sales
Johannes Orieny	Production and Sales
Fredrick Oginga	Production

EXPERT / CONSULTANTS

Kenneth Akuku	Allrounder (Metal/Woodwork)
Joshua Miyogi	Electrician/Solar expert
Billy Ochieng	Community and social work.

Location

Kenya: we work with our local partners in Nairobi, Kibera slums and Abura village in the western part of Kenya.

Cameroon/DRC: our project is located in the northern, central and eastern part of the country. We have activities in the capitol Kinshasa and in the town of Oshwe.

Switzerland: we are located in Bern and working with schools in the German speaking parts of Switzerland, with workshops in Kandersteg International Scout Centre (KISC).

Awards

In 2011, Solafrica.ch won Swiss Environmental Prize award in the category of organizations, which was accompanied by prize money of CHF. 5000. It was a special award in recognition of our work in providing sustainable lighting solutions to underserved people in Africa. The prize money from the award was invested in the purchase of more solar materials used in the production of Kibera lamps and a part in the salaries of the four solar technicians.

The second recognition, our solar lamp project in Kibera received an honorary Mention at the Prix ARC in Austria. The Prix Ars Electronica, initiated in 1987, has earned a reputation as the definitive barometer of trends in the international media art scene. Juries composed of leading experts in their respective fields converge annually to select the most outstanding contemporary works and to honor their creators with Golden Nicas, the "Oscars of media art." Mr Andres Wirz, Solafrica.ch vice president, travelled to Austria and received the award.



PROJECTS 2011

BACKGROUND INFORMATION

Less than 15 % of the households in Kenya have access to grid electricity. Most households depend on kerosene lamps, candles and firewood as their main sources of lighting. These lighting sources produce smoke, poor light and cause fire accidents. In addition, fumes from the kerosene lamps when inhaled are a health hazard to human beings and contribute to greenhouse gas emissions.

Children and young people are more vulnerable in Africa as they have to sit close to the kerosene lamps while reading or doing their homework. The smoke from the kerosene lamps are directly inhaled and cause respiratory diseases and severe eye damage when used for long periods of time.

The Kenya government imports kerosene fuel, while candles are manufactured locally. Firewood is collected from forests and woodlands. Kerosene is expensive (1 litre=Sfr. 1.50) and not affordable to many people hence they use firewood collected for free from forests. This action is putting pressure on trees leading to massive deforestation and the attendant consequences. Furthermore, families' small budgets are over stretched, as they have to buy medicine to treat smoke related diseases that could otherwise be prevented if the families used better lighting and cooking devices.

Schools in rural and peri-urban areas also use kerosene lamps (pressure lamps) to light up classrooms at night. The kerosene lamps are loud, consume a lot of kerosene and are risky as they often burst and cause serious fire accidents.

The energy situation and needs in Kenya and Cameroon are similar and reflect the actual situation in other countries in Africa. The paradox is that, African receives a lot of sunshine throughout the year, which unfortunately, is hardly used to generate electricity. The main reasons being:

- Solar Photovoltaic systems are expensive especially the initial cost compared to kerosene and firewood which can be bought in small quantities or collected for free from the forest respectively.
- Lack of awareness of alternative energy sources in the market. In some remote areas people only know of kerosene and firewood and have never heard of electricity or solar photovoltaic systems before.
- Misconception that renewable energy sources like solar belong only to the rich.
- Negative experience from first time solar buyers due to malfunctioning solar photovoltaic systems. These malfunctions are mostly due to poor installation from untrained personnel and cheaply available inferior quality materials.

Energy needs in Africa must be addressed sooner rather than later as it`s hindering meaningful development. Solafrica.ch sees prospects working with young people in a multifaceted approach to deal with the energy situation and create green jobs.

Kenyan and Cameroonian youths have been identified as the driving force for this change and Solafrica.ch has been and will continue to train youth to be solar technicians and be change agents and multipliers. Partnering with the Kenya Scouts Association has opened doors to reach even a wider audience as they have a wide grassroots footing in Kenya. They work with communities in the villages and we are happy to be associated with them to help improve the living standards of 40 million Kenyans without proper (sustainable) lighting sources.



The Kenya youth solar project is an innovative youth-led project initiated in 2009 working hand in hand with young people from poor families. The project trains young solar technicians who design, install and maintain solar photovoltaic (PV) systems in homes and schools for people who do not have access to electricity. Besides, the project has established a solar LED lamp production unit that produces and services portable lamps for the low-income people in Kenya. A part is exported to Switzerland and sold and the profit earned is used to subsidize the cost of a lamp in Kenya to make the price affordable to poor people.

The project aims to promote the access to affordable and sustainable energy solutions, through training of youths to be solar technicians. We also train the young technicians on business skills thus building capacity within communities and creating green jobs, thereby improving people's lives.

The project is being undertaken by two partners in Kenya namely, Kibera Community Youth Program (K.C.Y.P) a youth organization in Kibera slum Nairobi and Kenya Scouts Association (KSA) with over 400,000 Scout members.

Since the project's inception in August 2009, over 1000 portable solar lamps have been produced. The assembled lamps are sold at subsidized rates in Africa and very poor kids get the lamps for free, thanks to donations and a sales promotion in Switzerland named "*One child One lamp*", whereby a customer buys 2 lamps and receives 1, and a poor African child gets one at a subsidized rate or for free. Pre-assembled lamps are used in solar workshops in Switzerland. In addition, we have organized and executed 3 solar trainings, 2 exhibitions and capacity building exercises besides solar PV system installations in private homes and in schools in Kenya.

KENYA

1. PRODUCTION OF SOLAR LAMPS IN KENYA

In January, the workspace for the production of the solar lamps in Kenya was enlarged and refurbished to provide more room and storage facility. Until then, some activities like wood cutting were done outdoors, making it impossible to work during rainy season.

Solafrica.ch supplied the necessary building materials like timber, iron sheets, cement, doors, windows and nails while Kibera youths, with the help of a carpenter, erected the workshop. This has improved the working environment and boosted morale of the youths.

At the project's inception, the 4 Kibera youth who produce the lamps did not have prior carpentry or electrical experience but after two years working to produce the lamps, they have now gained skills, confidence and experience to produce very good quality lamps for the Kenyan market and some for export to Switzerland and other parts of the world.

Solafrica.ch provides raw materials like solar panels, LED and rechargeable batteries, while the wood for making the casing is sourced locally in Kenya. We have identified "*Neem*" wood as the most suitable for making the lamp as they are easy to work with and grow very fast. The trees are harvested in a sustainable way to ensure long-term supply is assured. Locally the seeds and leaves from the Neem tree are considered a Panacea for treatment of many diseases in humans and plants.

The uptake of Kibera lamps has however been slow due to the price factor and other challenges like inflation, a strong Swiss franc and an influx of cheap but inferior competing products in the market. We have not penetrated the market as we had hoped for but we have negotiated with our solar supplier for price reduction of materials by 30 per cent next year to make the lamps more affordable.

In 2011, Kibera youths exported 400 lamps to Switzerland. The lamps have been used for workshops in Switzerland, South Africa and Mexico to sensitize young people about solar energy and open dialogue on issues of climate change. Kibera lamps have also brought joy to many people`s hearts as a unique handmade gift in Swiss homes.

Thanks to Kibera lamp buyers in Switzerland, we have been able to subsidize the prices in Kenya by 90 per cent. Another 50 poor children have benefited from free lamps. However, a large population can still not afford it and we need to reduce the price even further. That will be our main focus next year.

2. SOLAR POWER FOR KENYAN SCHOOLS

About 70 per cent of Secondary schools in Kenya are boarding schools in which students are housed within the school during the term and only return home during school holidays. This means that students study and sleep within the school compound. About 99 per cent of these schools still rely on Kerosene lamps to light up classrooms, dining halls, sleeping hostels (dormitories) and libraries.

A Solar power station was developed last year by Kibera youths to solve this problem. It has a simple concept of a "plug and play" system. The technology is simple as the battery, charge controller and inverter are enclosed inside a box. There is an inlet plug for the solar panels to charge the battery and an outlet plug for lighting and charging electronic devices. The idea was developed out of the realisation that people fiddle with solar photovoltaic systems after installation leading to malfunctions. The school system will minimise this practice and bring confidence to solar users.

One such system has been installed in a classroom at Nyangere mixed secondary school in rural western Kenya. The system enables students and teachers of Nyangere to extend their studies at night and early morning with about 4 hours. Students are very happy that they can do their homework in a bright well-lit classroom. The school board and the headmaster are interested and willing to install solar systems in the remaining classrooms and the administration building. A final decision will be made in their next meeting in December 2011.

The proposed solar systems will besides light, also power a laptop, a printer and charge mobile phones for teachers and the surrounding community. Furthermore, the school will be able to easily enrol students to national examinations online. The process used to be tedious as two teachers had to travel 70 km to the nearest town with Internet café to enrol students. Often, the teachers have been forced to stay overnight due to bad roads and slow Internet speeds. This will hopefully improve next year and the teachers will be relieved from these troubles and concentrate on teaching. Mobile phone charging and a barbershop will be established to generate income for the school for repair and maintenance of the solar system.

Financing such a system is expensive and a challenge for poor schools as most students struggle to pay school fees and a lack of government support for such infrastructure. This means communities have to finance building their own schools while the government provides teachers. Banks too find the risks too high and unable to lend money to schools for the installations. Solafrica.ch is working with school boards and banks to find suitable sustainable solutions to the lighting and Internet problems.

3. WORLD ORGANIZATION OF SCOUT MOVEMENT (WOSM)

World Organization of Scout movement (WOSM) is the largest youth movement with over 40 million members in 160 countries. In April this year, Solafrica.ch began collaborating with WOSM to develop a solar program for the Scouts.

The main aim of the solar programme is to help Scouts worldwide learn and experience solar energy by undertaking various theoretical and practical activities. The content includes a choice of solar games, do-it yourself experiments amongst others. The program has been developed for various age groups according to WOSM guidelines. It is composed in a way that the young people can learn about solar energy and have fun at the same time. Moreover, it teaches young people activities that they can do individually or collectively to fight climate change.

When young people become more aware and active on climate change issues and are shown the available solutions, they become more interested and could help or influence the older generations. Scouts have a high

multiplier effect and our collaboration is geared towards building capacity for Scout leaders especially in Africa where climate change and global warming is more severe causing droughts, hunger and death.

In this regard, 3 Scout leaders (Brad, Dishon and Stephen) were invited to Switzerland in July. Brad from the South Africa Scout Association and Dishon and Stephen from the Kenya Scouts Association came to learn how to conduct a typical solar workshop at Kandersteg International Scout Centre (KISC). During 6 weeks, the three Scout leaders learnt by helping (*Learning by doing*) an experienced workshop giver in KISC to conduct the training with young Scouts. About 2000 participants took part in various solar activities.

3.1. PRE-TEST OF SCOUT BADGE IN KENYA

At the end of six weeks of training at KISC, the Scout leaders went back to their respective centres in Kenya and South Africa. A pre testing of the solar badge was done in August at Rowallan camp in Kenya.

About 1000 Scouts were introduced to various activities and workshops to learn about renewable energy with a special focus on solar energy. The aim of the workshops was to test the content of the solar badge and its acceptability amongst Scouts in Kenya. *The challenges and recommendation are in a separate document.* Stephen and Dishon (Scout leaders) put in practice what they had learnt at KISC and a follow up workshop was done in October and more are planned for next year. These two workshops have triggered interest amongst Scout leaders from other parts of the country and have requested Solafrica.ch to train them to be solar technicians. A two weeks solar technician training has been planned for 2012 at Scout Rowallan camp in Nairobi.

As a first step to solarise the Scout camps in Kenya, Solafrica.ch installed a solar system to supply 2 dormitories at Rowallan camp with sufficient power to light up two rooms and provision for charge mobile phones. Solarising other buildings has also been planned.

3.2. JAMBOREE IN SWEDEN

Every 4 years Scouts between the ages of 14-17 from all over the world gather in a country to share the spirit of Scouting, learn new skills, meet old friends and make new ones. More importantly is to share experiences and a feeling of solidarity. This year, between July 27th and August 8th, more than 40,000 Scouts met at the Jamboree in a small village of Rinkaby in southern Sweden for this event. This was a perfect opportunity for Solafrica.ch to present and test the solar badge activities to diverse Scouts from various parts of the world at the Global development village. We had a positive feedback from more than 2000 Scouts and their leaders. *Detailed feedback on the reflection of the activities of the Jamboree is available in a separate document.*

3.3. SOLAR TRAINING FOR SCOUTS IN SOUTH AFRICA

In South Africa at the Scout camp in Durban, a solar training was done in October just before the *COP17 conference* on climate change. The young Scouts were trained in assembling solar lamps and cooking with solar energy. The Scouts then showcased their products during the COP17 climate conference to the world leaders who gathered there. This was meant to sensitize the Scouts on the actual issue at the conference and showcase solutions available to the leaders attending the conference.

South Africa hosted the climate conference COP17 in November. Here, leaders, policy makers, pressure groups and young people met and discussed issues that pertain to climate change and its effects. However, little or no progress was achieved due to conflicting interests between the developed countries and developing countries to cut CO2 emissions. Nonetheless, there is always a need to remind leaders of the available renewable energy solutions that are good, sustainable and readily available.

CAMEROON

The solar project in Cameroon/Democratic Republic of Congo (DR Congo) is a joint initiative between Solafrica.ch and Greenpeace Switzerland and 3 local partners. The three local partners are, African Indigenous Women Organization - Central African Network (AIWO-CAN), CED (Centre pour l'Environnement et le Développement) und RAFDER (Reseau pour le Développement des énergies renouvelables). The project is coined under the name of Climate and Forest Solutions Caravan.

The aim of this project is threefold: to protect and conserve the tropical rainforest in Cameroon and DR Congo, to promote renewable energy and to facilitate the development of the rural communities.

The project is designed in three phases, which include energy, health and sustainable forest and land management. It is located in central and northern Cameroon. The project part in the DR Congo is in preparation. It is expected to start in 2012.

In 2011 we conducted several trainings for energy efficiency and renewable energy technology in various places. In January we conducted a training over two weeks about solar cooking, solar drying and the construction of wood efficient stoves. 20 students from Yaoundé participated in that training. The training took place in Yaoundé, the capital of Cameroon.

In Oshwé we started with the preparation for the installment of a solar plant to run the local radio station. The aim is not only to replace the old fuel driven generator, but also to educate people in renewable energy technology. We plan to conduct a training for about 30 volunteers, that are interested in photovoltaic and to install the solar plant with these people. Due to several difficulties, political instabilities and security reasons, it was not possible to conduct the training until the end of 2011. It is planned to take place in early 2012.

Another training was conducted in Kinshasa. In March ten youth participated in a workshop about the construction of wood efficient stoves. This workshop was organized together with our local partners from CENADEP and OZONE.

Finally we were able to start the implementation of the energy phase in 15 villages in central and east Cameroon. We trained about 60 people in solar technology and community development, installed about 150 solar plants and sold about 800 pieces of small solar equipment like torches and radios. At the same time we constructed about 500 wood-efficient stoves.

Please find more information and actual development of the project on our website: www.greenpeace.ch/klimakarawane.

SWITZERLAND

Since July, Solafrica.ch has added a new product to its portfolio "solar vignette" to promote use of solar energy in Switzerland. Solafrica.ch buys solar electricity from Legair our local solar electricity producer and sold to cell phones, E-bikes and laptops users to compensate for the electricity used. That means we give our customers the possibility to buy solar energy for their gadgets. With as little as 8 francs our customers can buy solar electricity for the entire year for their cell phones and 50 francs for laptops or E-bikes. The solar electricity is produced and certified by an independent body and fed into the electric grid. Our customers are able to get electricity from any electricity socket in Switzerland.

We could organize eleven Solarworkshop in different schools and the International Scout Centre (KISC).

This product also opens up a new door to promote solar energy in Switzerland by addressing our customers' needs.

SOLAFRICA.CH OUTLOOK 2012

- Establishment of youth Solar Training Centre.
- Training 10 more solar technicians. The need for qualified solar technician in Kenya has not been exhausted. Collaborating with Scouts has opened up a new focus group of young multipliers with grass root experience and a good channel to promote solar energy through
- Training Scout leaders.

- Continue production of the Kibera lamps and increase monthly production and sales to 150 a month. Lower the prices by working with our supplier to reduce the price by 30 per cent.
- Install solar power station (school system) in 6 - 10 schools. There is a huge potential of school systems but financing challenges must be addressed for affordability.
- Launch solar badge challenge for Scouts in Kenya.
- Exhibitions and road shows to showcase our products. This will create more awareness about Kibera lamp and solar systems.
- Solarise Scout camps. Starting in Kenya.
- Conduct the solar training in Oshwé and replace the fuel driven generator for radio RTB.
- Finishing the energy phase in central and east Cameroon.
- Start the second phase with emphasis on health and water in the 15 villages.
- To launch the Cameroon Solar Solution (CSS), a social enterprise for renewable energy technology in rural Cameroon.

