



Dear friends and supporters of the Solar Energy Foundation,

At the end of the year, I would like to give you an insight into what we have achieved together with our partners in East Africa over the past six months - not least thanks to your donations and support.

Millions of people in Africa are still without electricity. The energy transition from paraffin lamps to solar energy requires creative concepts that combine subsidies with commercial incentives. At least if you want to find solutions for the lowest-income and remote regions.

Our solar village model, which has been tried and tested since 2005, is still highly relevant today because it enables economic and social development in a special way.

Read more about our activities in recent months and the tried and tested solar village concept in our newsletter. I would be delighted if you would continue to accompany and support our work.

Enjoy reading!

Au/Freiburg, December 2023

Dr. Harald Schützeichel, Director

News in brief



Justa Kahindo (links) und Edwin Likhale in ihrem kleinen Solarshop in Isinya. Beide haben am SEEP-Programm teilgenommen.

In Kenya, the first course of the **Solar Entrepreneurship and Empowerment Programme (SEEP)** was completed on 8 December 2023.

The programme aims to train and continuously support small and micro enterprises that specialise in solar products and services in the field of clean energy.

Under the professional guidance of Gathu Kirubi, Director of the Kenyan Solar Energy Foundation and experienced solar entrepreneur, 43 participants (17 of whom were women) received basic entrepreneurial training. They then received practical support in running their solar micro-enterprises over a period of several weeks.



The Sendea Academy (Uganda) completed another five-week training programme for solar technicians in September. The participants received a certificate at the end of the programme, which offers them good opportunities for finding jobs: Sendea's courses are recognised by the state and the solar

market in Uganda urgently needs professional technicians.

Some of them are considering setting up their own solar company and are given the opportunity to be supported by Sendea's accelerator programme.



Denise Kajumba



Patricia Namuddu

Denise Kajumba and Patricia Namuddu, two talented graduates of our Ugandan solar technology course in 2019, enrolled on a part-time engineering degree programme. We supported them with a scholarship that covered part of their tuition fees (Newsletter 1/2020).

Despite the corona crisis, during which all educational institutions in Uganda remained closed for almost two years, they both persevered and have now received their diplomas.

Congratulations to both of them!



A two-day boot camp for young company founders also took place in Uganda in September.

The two-day boot camp is part of the Freelance Incubator Programme in Uganda with the aim of sharing the freelancers' practical experience, discussing it with each other and developing solutions.

There is also specific training in business management. The bootcamp consists of interactive sessions and discussions on business planning, successful business principles, marketing, financial planning, credit management, leadership and product development.

On-site visit: Isinya health centre (Kenya)



The head of the Isinya health centre, Amos Karanja, in front of the statistics board of the obstetric care provided.

As in every part of sub-Saharan Africa, the health sector in Kenya faces significant energy problems, as many facilities do not have reliable access to electricity.

There are usually hour-long power cuts several times a week. A few weeks ago, Kenya experienced the longest ever of more than 24 hours. Can you imagine what happened in a hospital without backup or alternative energy sources?

The irregular power supply disrupted medical procedures, made it difficult to store and cool vaccines and hindered the operation of life-saving equipment.

Solar refrigerators for cooling medicines and vaccines

During my trip to Kenya in December 2023, I visited the health centre in Isinya. It is located around 60 kilometres south of the capital Nairobi.

Although the health centre is connected to the public power grid, it is also affected by frequent

power cuts. This makes the storage of medicines and vaccines extremely problematic.

We have installed a mobile solar refrigerator in the health centre, which was developed by a Kenyan company: the so-called Vaccibox. The solar refrigerator has received numerous awards and has already been successfully used by us in several health centres. Four more Vacciboxes are currently on order for Kenyan health centres and will be installed soon.





Mothers (and one father) wait at the twice-weekly infant immunisation session

In addition to providing basic care for the population, the Isinya health centre focuses on prenatal and postnatal care. Educating people about family planning options is also particularly important. A service that is in high demand, especially among women in the region.

During my visit, the head of the health centre, Amos Karanja, tells me that the safe cooling of important vaccines using solar energy has made his work much easier. In Kenya, newborns usually receive numerous vaccinations in the first year of life. The necessary vaccines have to be kept cool on site. For Amos Karanja, one thing is certain: without the solar cooling facility, his health centre would not be able to offer numerous services reliably.

He could do a lot more, he adds. But the problem is a lack of staff. Unlike in Germany, this can actually be found, but the financial resources to employ more staff are lacking. And the best employees are now often headhunted from other (European) countries anyway.

Amos will retire in a few years. Two things are already clear to him today, as he tells us: He will then

open a private medical practice and buy the Vaccibox for storing vaccines.



Amos Karanja

More than just light for underserved households: our solar village concept



One of the first and the largest solar village to date: Rema in Ethiopia

Although the supply of decentralised solar systems is progressing in Africa, the existing economic concepts rarely manage to make a meaningful offer to remote households.

Although the widespread concept of financing via loans (pay-as-you-go) has led to the spread of solar energy, it has failed to achieve its goal of offering a purely commercial model for remote households. The cost and effort of serving these low-income households is too high to be paid for by the customers.

If the off-grid industry really does not want to leave anyone behind, concepts that combine the commercial approach with an intelligent subsidy mechanism must be utilised to a greater extent. This can cover the increased costs incurred by companies.

The intelligence of these concepts lies primarily in two points:

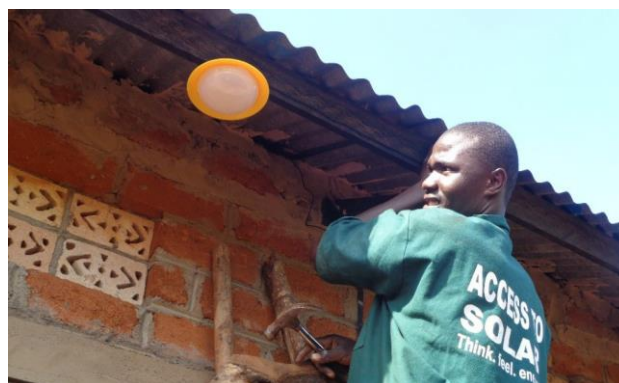
- It does more than just provide access to (solar) light and hand charging for households; it also provides sustainable support for local solar SMEs.
- Subsidised models must not hinder existing markets or prevent new ones from emerging. On the contrary: they should promote economic development.

A model for supplying remote households: the solar village model

The solar home systems (SHS) with electricity for 3 LEDs and mobile phone charging are installed free of charge in a selected village and initially remain the property of the operator. The households pay a subsidised usage fee.

After a fixed period of time, the SHS becomes the property of the users. This is a crucial aspect for households. It strengthens personal responsibility and promotes motivation.

So far, however, the solar village concept is nothing special. So what makes it a special model?



Solar village Isukwe (Uganda)

More than just access to light

- **Community approach:** A special aspect of a solar village project is the aim of promoting the further development of the village. Therefore, it is not individual households that are supplied with solar energy, but an entire village community. In line with the principle of "leaving no one behind", all households are given the opportunity to be "connected to the sun" with a basic supply: The user fee for the systems is determined in terms of amount and duration according to what the poorest families in the village can afford. In this way, no one is left behind.
- **Flexibility:** The solar home system offers a subsidised basic supply, which is initially sufficient for many households. However, demand is often greater or develops subsequently. Larger solar systems or other applications (e.g. TV) can therefore be purchased flexibly from the installing solar company as required. However, the prices for these additional solar system applications are not subsidised.



Solar village Sironko (Uganda)

- **Promotion of local solar SME:** Information about the technical options of the solar systems, the conditions for participating in the solar village project, installation of the solar systems, processing of payments as well as

maintenance and service are carried out exclusively by local solar companies. These in turn are accompanied and supported by an experienced mentor during implementation. The project is interesting for the solar companies in several respects:

- It offers a training opportunity for the company's own employees with regard to installation, customer service, maintenance and payment processing.
- It is a reference project that can be used to enhance the company's reputation and attract new customers.
- It serves as a proof of performance, not only in terms of professional installation, but also in terms of maintenance and customer service. After all, satisfied customers are the best advertisement for a company.



Solar village Ruhita (Uganda)

A solar village offers an opportunity to develop a village community and is an instrument for promoting local small solar companies. These are the backbone of any sustainable supply of decentralised solar energy, especially in remote areas with low-income households.

Experience

We have now realised 20 solar villages, mainly in Ethiopia, Kenya and Uganda. The model has proven itself as a hybrid concept consisting of financial support and local economic development. Our most important experiences from these 20 solar villages:

- The right choice of village to become a solar village is crucial for success: A solar village must be selected and designed in such a way that it promotes further economic development and does not hinder it.

In the case of subsidy-driven projects, there is a risk of disrupting the economic progress of local solar companies. If only the pure installation figures

were measured, this aspect would be of little relevance. But more is needed for sustainable economic and social development with solar energy.



Solar village Arso Amba (Ethiopia)

- A good size for a solar village is 100 households. This is large enough to enable village development and at the same time act as an accelerator for the local solar market.
- Even if the basic concept is always the same, each solar village must be individually designed and realised. This is because every village has a special living, working and requirement situation.
- The self-confidence and self-responsibility of the households is promoted above all when the solar system becomes the property of the household after a certain period of time.
- Supplying the village with solar energy also provides the impetus for communal development. This offer has often been taken up in our solar villages, but its scope and sustainability depends

on the commitment of the respective community leader.

- In all solar villages, it has been possible to give the local solar company involved a lasting boost in its economic development. This is because successful project implementation has always led to increased reputation and credibility and thus contributed to more demand and therefore to more stable business development.

As a creative concept of solar power supply for low-income households in remote villages with simultaneous support for local solar SME, the solar village model therefore offers a proven opportunity for economic and social development in our experience.



In Europe and Africa, start-ups are working on new innovative business ideas to limit the effects of climate change. For both regions, it is a departure into the unknown, but with similar goals: a climate-neutral and sustainable use of our natural resources.

The exchange between African and European start-ups in the field of "green technologies" (CleanTech) harbours creative potential for both sides that has so far been little used. This is also due to the current market situation in Africa, where it is mainly non-African companies that are active in the CleanTech sector. The products are developed outside Africa, financed by non-African investors and manufactured outside Africa. The role of Africans is limited to that of consumers.

In Africa, however, the number of people developing their own innovations to combat climate change has been increasing for a long time. One advantage of these local innovations over non-African ones is their proximity to the specific economic, structural, social and cultural requirements.

These local innovations are little recognised outside Africa. And there is also a lack of opportunities for dialogue with other start-ups within Africa. This further reduces their (international) visibility.

The Startup|Energy initiative founded in 2021 by Stiftung Solarenergie and the University of Freiburg aims to promote exchange between innovators from both continents.

It began in the field of decentralised renewable energy supply: 10 energy start-ups from five African countries are currently fellows of the accelerator programme, which lasts several months.

The **Clean Energy Bootcamp in April 2024** will now bring together students from four universities in Uganda, Kenya and Germany to work together in workshops to further develop their CleanTech innovations.

This is not about a one-way transfer of knowledge, but about an equal exchange of ideas and solutions for the respective region. The aim is to learn from other local contexts for your own start-up idea.

Participating Universities



Germany:
Albert-Ludwigs-Universität,
Freiburg



Kenya:
– Kenyatta University, Nairobi,
– Mount Kenya University, Thika



Uganda:
Makerere University Business
School, Kampala

Supported by:



The Solar Energy Foundation Team

Germany



Dr. Harald Schützeichel
Founder and Director

Team members

- Daniela Ruthart
Accounting, project management
- Isabel Nande
News page Sun-Connect News

Board

- Beate Baumm, Munich
- Albert Krikken, Cham
- Ursula Schachenmann, Schaffhausen
- Jörg Stüdeli, Küsnacht

Ethiopia



Samson Tsegaye
Solar Energy Foundation Ethiopia
Director

Kenya



Gathu Kirubi PhD
Solar Energy Foundation Kenya
Director

Uganda



Loy Kyozaire
Sendea UG
CEO

Your donations make our work possible

- 200 euros: Light for a household (Solar village)
- 1,500 euros: Training of a solar technician
- 1,000 - 3,000 euros: Solar energy for a village school
- 2,000 euros: Participation of a start-up in the Startup|Energy programme (one year)
- 2,500 euros: Solar refrigerator for a health centre

Contact:

Stiftung Solarenergie StS gGmbH
Am Schönberg 8b, D-79280 Au
mail@stiftung-solarenergie.org

Our bank details:

Volksbank Freiburg
IBAN: DE96 6809 0000 0038 2193 08
BIC: GENODE61FR1

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