

# SOLAFRICA



ANNUAL REPORT 2022





# PREFACE

**Dear readers,**

First off, some good news: We are not alone. We are part of a larger movement working for a fairer and more sustainable world. It is thanks to you, our sustaining members, donors, funding partners and partner organizations, that our work is possible at all. Together, we provide an important driving force worldwide for the expansion of solar energy and the global energy transition.

This cannot be taken for granted, because the problems around us seem to be getting bigger and more and more turbulent: pandemic, energy crisis, wars, social injustice and climate crisis – all this can seem overwhelming. But burying our heads in the sand is not our strategy.

More than ever, the world is in need of creative minds looking for innovative solutions. We need more ideas, more projects, more attention and more people to tackle the global problems of our time. Because, together, we have a power that is even mightier than these challenges.

Solafrica has been working for 14 years with healthy optimism for a future in which a sufficient modern energy supply for all people exists in harmony with climate protection. For example, people in Kenya and Ethiopia are learning in training programs how to set up their own businesses in the solar industry. Also in Ethiopia, research is being funded into technologies that will use solar energy to produce renewable fuels. In view of the dwindling forest areas, the population urgently needs an alternative to burning wood for cooking. Thanks to the installation of solar systems, health centers in Burkina Faso and Cameroon have

an electricity supply, which means, for example, that women can now give birth safely at night.

In Switzerland, refugees have the chance to advertise themselves on the job market in the solar industry, and young people can help build a solar plant as part of a one-week project. And around the world, the trained solar ambassadors from the Scout Movement are spreading their enthusiasm for solar energy in their home countries.

Much has already been achieved and much more remains to be done. I can identify with the approaches, the projects and the positive attitude of Solafrica. That's why I've been on the organization's board since 2022. I feel this is my way of helping us all to take another step towards a solar future.

**Thank you, too, for your contribution!**



A handwritten signature in black ink, appearing to read 'Badertscher'.

**Christine Badertscher**  
Member of the Board of Solafrica and  
Member of the National Council







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# 01 VISION AND APPROACH

# OUR VISION IS A WORLD IN WHICH A SUFFICIENT MODERN ENERGY SUPPLY FOR ALL PEOPLE EXISTS IN HARMONY WITH CLIMATE PROTECTION.



## SOLAR LEARNING

Training solar technicians will create career opportunities while reducing the local shortage of skilled workers. This will lead to an expanded supply on the solar market and thus to more solar energy and more local value creation.

## ENVIRONMENTAL EDUCATION

In solar workshops, children and young adults are able to experience solar energy and understand it as a positive future technology. This increases their awareness and understanding of a climate-friendly, safe and social energy supply.



## DEVELOPMENT OF THE SOLAR MARKET

Thanks to a broad-based package of measures, the general economic and social conditions for solar energy are improving. This in turn allows for better development of the local solar market.

## SOLAR INFRASTRUCTURE

Installing non-profit solar systems and ensuring that they are used properly can improve the lives of people who are affected by energy poverty.



## INNOVATION

Thanks to the promotion of innovations in technology, education, organizational structure and financing, the energy supply situation is improving and preference is turning more towards the use of climate-friendly energy.

DZ NEWS FROM OUR PROJECTS





**Switzerland**

**Burkina Faso**

**Cameroon**

**Ethiopia**

**Kenya**

**Tanzania**

You can find out more  
about our projects here:  
➤ [www.solafrica.ch/en/projects](http://www.solafrica.ch/en/projects)

# THE SOLAR LADY FROM KENYA

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News from our projects

**"When I wake up in the morning, I know I can change someone's life,"** Rhodah Ndegwa says. The young woman is known in her home country Kenya as "solar gal" – the "solar lady".

It all started five years ago when she attended a course on solar energy in Zimbabwe. The course leader was Paddington Johannes, who had been trained as a solar ambassador a year earlier in Kandersteg in the Scouts Go Solar project ([see page 7](#)).

A few months later then saw Rhodah Ndegwa sitting in full concentration in the training room in Kandersteg. She was eager to become a solar ambassador herself: **"In my country, about 60 percent of the population has less than a dollar a day to spend. I was ecstatic to learn that there was a clean, free and constantly available source of energy for us. It was like a release from the prison of poverty."**

Since then, the "Solar Lady" has worked tirelessly on getting solar energy spread throughout Kenya. This is because living without access to electricity leads to severe disadvantages in various aspects of life such as education, health and gender equality. Rhodah Ndegwa organizes solar workshops at schools and in scout homes, or uses soccer tournaments and festivities to draw attention to the possibilities of solar energy at her information and training stand.

Rhodah Ndegwa also distributes small solar lamps to economically disadvantaged families. **"I was privileged that we had electricity at my home. But in my neighborhood, there were many houses without electricity. The children of these families often couldn't do their homework because it was too dark for them after 6 p.m."** The feedback from the community alone is a reason for Rhodah Ndegwa to keep going. Because, for her, putting a smile on people's faces is the best gift.



Rhodah Ndegwa









## SCOUTS GO SOLAR INTERNATIONAL

During about ten days, scout leaders from all over the world are trained to become solar ambassadors. Afterwards, they carry out their own solar activities in their home countries, thereby reaching not only their local Scout Movement but also the general public. In 2022, twelve new solar ambassadors were trained at the International Scout Center in Kandersteg. They came from Mexico, Poland, Honduras, Greece, Portugal, Costa Rica, Spain, Kenya, Guatemala, Ecuador, Australia and Singapore. In addition, more than 35 solar activities were carried out worldwide. In the future, regional trainings in Africa, Latin America, and Asia will replace the training in Kandersteg.

## NEW COLLABORATION WITH THE SWISS GUIDE AND SCOUT MOVEMENT

In the summer of 2022, everything in Goms (Valais) revolved around the largest scout camp ever held in Switzerland. A mega experience – because the national camp of the Swiss Guide and Scout Movement only takes place every 14 years.

We were also present at our own stand in the middle of it all. Together with the Swiss Guide and Scout Movement, we used the festive occasion to jointly launch "Scouts Go Solar Switzerland". This is a collaboration where educational materials are being developed, Scout leaders are being trained and a set of courses specific to Switzerland is being established.

A playful approach is ideal for sensitizing children and young adults to energy issues. Among other things, they get to experience the power of the sun through solar experiments.





With Jugendsolar, students learn during an intensive project week how the energy transition can be implemented in concrete terms. In doing so, they help a solar company in their region build a solar plant. In supplementary workshops, solar potentials are calculated, little solar cars are built, political debates are simulated and the path to the energy turnaround is vividly presented.

The experiences and encounters during construction and the workshops enable holistic learning. In a closing event, the young people will educate their school, parents, local businesses and the municipal administration and kick-start the energy revolution. In 2022, project weeks were held in Langnau (BE), Schwamendingen (ZH), Uster (ZH), and Seewen (SO). There was also an Action Day in Freimettigen (BE).

## PROJECT

### SCOUTS GO SOLAR INTERNATIONAL

📍 Switzerland

📅 Since 2014

👤 Responsibility: **Martin Wanner**

🔗 [www.solafrica.ch/en/projects/scouts-go-solar-switzerland](http://www.solafrica.ch/en/projects/scouts-go-solar-switzerland)

# 800 CHILDREN & YOUNG ADULTS

were sensitized to the topic of solar energy at the Swiss National Scout Camp.

## PROJECT

### JUGENDSOLAR

📍 Switzerland

📅 Since 2020

👤 Responsibility: **Amadeus Thiemann**

🔗 [www.solafrica.ch/en/jugendsolar](http://www.solafrica.ch/en/jugendsolar)

# 136 YOUNG ADULTS

experienced solar energy first-hand in an intensive project week with Jugendsolar.



# SOLAR LEARNING IN EAST AFRICA

If we want to supply our world with 100 percent renewable energy, solar energy must play a major role. This is especially true for Africa, the continent with the greatest potential for solar energy. For regions without an existing power grid, decentralized solar systems are also the most cost-effective and logistically simple alternative.

What is often lacking are well-trained solar specialists. This is exactly where our Solar Learning projects come in. In 2022, our local partners in Kenya and Ethiopia trained 239 solar technicians in three projects. The young people gain job prospects through this training and the communities benefit from access to renewable energy.





## CONCLUSION OF A PROJECT. SOLAR LEARNING KENYA

In a planned phase-out, the Solar Learning Kenya vocational training program will be handed over to our local partner organizations Ramogi Resource Center and Ramogi Institute of Advanced Technologies in 2023. Last year, the organizational, human and financial capacities of our partners were strengthened to ensure the continuation of this training.

### PERFORMANCE FIGURES FOR THE LAST PROJECT PHASE (2020–2022):

- **149 young adults** were successfully trained in sales, installation and maintenance of photovoltaic systems. 38 percent of the participants were women.
- The young adults installed **7 solar systems for schools and water pumps**. This has improved the teaching conditions (lights, printers, computers, etc.) for **5000 students and teachers**. In addition, **20,000 people** within a radius of 3 villages have gained access to clean drinking water.
- There were **380 solar panels for off-grid households** installed, giving more than **2000 disadvantaged** people access to lighting and to electricity for charging small electronic devices (e.g., radio, cell phone, smartphone).



### PROJECT

## SOLAR LEARNING ETHIOPIA

📍 Ethiopia

📅 Since 2017

👤 Responsibility: Florian Schlegel

🔗 [www.solafrica.ch/en/projects/solar-learning-ethiopia/](http://www.solafrica.ch/en/projects/solar-learning-ethiopia/)

### PROJECT

## SOLAR LEARNING KENYA

📍 Kenya

📅 Since 2013

👤 Responsibility: Florian Schlegel

🔗 [www.solafrica.ch/en/projects/solar-learning-kenya/](http://www.solafrica.ch/en/projects/solar-learning-kenya/)

### PROJECT

## MOBILE SOLAR LEARNING

📍 Kenya & Tanzania

📅 2020–2022

👤 Responsibility: Wolfgang Schneider

🔗 [www.solafrica.ch/en/projects/solar-learning-2/](http://www.solafrica.ch/en/projects/solar-learning-2/)

# 239 SOLAR PROFESSIONALS

were trained in Kenya and  
Ethiopia in 2022.

# 5032 SOLAR SYSTEMS

have been installed so far by  
the solar technicians already  
trained in Ethiopia. In doing so,  
they gave more than 30,000 people  
access to light and electricity.





## SOLAR PUMP SYSTEM FOR AN ORGANIC FARM

During their practical training in the Solar Learning Kenya project in June 2022, young adults installed a 6.4 kW solar system for an organic farm belonging to the Golgotha Self-Help Group, in Migori County, Karungu. The solar pumping system replaces the farm's generator, which previously consumed 70 liters of diesel per week to irrigate the fields. The farm makes a significant contribution to the region's self-sufficiency and creates jobs and income for at-risk youth.





# COOPERATION ON EQUAL TERMS

Since the early days of Solafrica in 2009, the idea of partnership – working on equal terms – has been an important guiding principle of the organization. One of the four founders, Joshiah Ramogi, is Kenyan. He was living in Switzerland at the time and was Managing Director until 2014. Together with his Swiss co-founder Kuno Roth (co-president of Solafrica), he worked closely with partner organizations in the project countries from the very beginning. In this way, they both ensured that the needs and resources of local communities were fully considered in the projects.

To date, in its projects outside Switzerland, Solafrica has always worked with local partner organizations. Thus, the people on site are responsible for the implementation of these projects, while the employees in Switzerland take care of the coordination and procurement of financial resources. Originally, the direct training of solar professionals was also a task of Solafrica. This has now become superfluous: our partner organizations now have sufficiently trained solar professionals of their own to meet all training needs. The added benefit of this is that the relevant competencies are anchored in the communities in the long term.





## INTERVIEW WITH A PARTNER OF SOLAFRICA

Abigael W. Okello is 38 years old and lives with her husband in a suburb of Nairobi. She holds a master's degree in conflict resolution and mediation, a bachelor's degree in social sciences and numerous solar engineering certificates, including a post-graduate certificate from ETH Zurich. In her spare time, she volunteers as a mentor for young adults and women.

Abigael Okello has been working with Solafrica in various capacities since 2016. In 2022, she became the director of the local organization Solar Mtaani in Nairobi. Solar Mtaani is our partner organization that trains underprivileged youth to become solar technicians as part of the Solar Learning Youth Centers project (see page 17). Project manager Wolfgang Schneider spoke with Abigael Okello.

### How did you come to start working with Solafrica and what was your motivation for doing so?

I used to have no idea about solar energy. I actually wanted to become a diplomat. But when I was collecting data for ETH Zurich on solar energy in Kenya, I was captivated by

the idea of using solar energy as a means of combating energy poverty. The work had taken me back to my childhood. Because I was born and had grown up in a big slum in Kenya. We were cut off from any source of energy. And suddenly there was this way I could help people while strengthening myself.

### What is the biggest challenge in your work?

One of the biggest challenges is having sufficient financial resources. Because Nairobi is expensive compared to rural Kenya. Sometimes we lack the money for hidden costs. This really is a big challenge.

### Why would you encourage others to do the same work?

Passion is an important prerequisite for this work. We work with women, we work with young adults. Already when it comes to the training, mentorship programs and networking, we need people who are truly committed. I don't think someone could do my job without passion.



**Was there an event last year that was particularly nice for you?**

The best part was when Florian [of Solafrica] told me that he had found funding to renovate the Kabete Youth Center and register the Solar Mtaani organization. Now, we are an accredited institution. And of course, recruiting the students and beginning the classes were especially nice moments.

**What are your goals for the future?**

My wish for the future is that Solar Mtaani will have its own solar laboratory for providing training, as well as its own solar mounting systems. We want to fight energy poverty with solar energy. But we also want to empower people and achieve positive social impact.

**Do you also have personal goals?**

I would like to obtain a doctorate. So that I can get more people to become involved, I need to develop myself personally, too. I want to join international collaborations in fighting energy poverty with solar technology.

I would also like to prove myself with my own educational background and become more involved in project management. And finally, I also want to do something for my own empowerment and health.



Abigail W. Okello

## SOLAR MTAANI

Solar Mtaani is a non-profit organization based in Nairobi, Kenya. The organization was created to help local communities use solar energy in order to promote personal, economic and social development. Their goal is to help people live healthier, happier and more productive lives through access to clean, high-quality energy. Solar Mtaani means "solar [energy] in the community".

In addition to educating disadvantaged youth with the Solar Learning Youth Centers project, the organization is particularly committed to supporting women. Women are given the opportunity in training courses to learn important skills that enable them to become financially independent. This includes training on solar stoves, solar ovens and solar dryers, which facilitate the preservation and sale of agricultural products.

➤ [www.solarmtaani.org](http://www.solarmtaani.org)



# SELINA KIPTIONY BECOMES A SOLAR TECHNICIAN

**"I am so happy. I never thought I could wire something together and make a light bulb light up,"** Selina J. Kiptiony tells us, beaming. The 22-year-old Kenyan is participating in the Solar Learning Youth Centers project (see page 17), a vocational training program for disadvantaged youth.

Selina Kiptiony comes from a family affected by poverty. She used to do various odd jobs to help her mother financially. In the evening, she cooks for her family and helps her three younger brothers with their homework. If there is ever any time left over, Selina Kiptiony likes to write short stories.

## TRAINING AS AN OPPORTUNITY

The primary school system in Kenya is relatively well developed. However, secondary schools are not affordable for most families. Structural inequalities such as poverty, family difficulties, and urbanization pressures are major challenges to the economic integration of young adults into the labor market.



Selina J. Kiptiony

Therefore, for many young people like Selina Kiptiony, training as a solar specialist is a great opportunity to break out of structural poverty. By going through intensive and inclusive training, sustainable prospects are created.

The class of budding solar experts of 2022 was composed of boys from the Kabete Youth Center, girls from the Dagoretti Youth Center, and external students. Under supervision, the class installed their own solar system on the roof of the Kabete Youth Center. The electricity produced is sufficient for lighting the classrooms and for operating small devices. The installation of a solar system on the Dagoretti Youth Center is planned for the next training year.

## EXAMINATION AND GRADUATION CEREMONY

In December, the students took the state exams. Of the 33 young adults trained, 27 received their state-approved solar specialist license – among them, Selina Kiptiony.

A graduation ceremony was not initially planned for in the budget. However, thanks to short-term donations, the young adults were able to celebrate the awarding of their diplomas in a festive atmosphere together with their families. Representatives from the government and solar companies were also present. The next step for the young solar professionals is an internship with a solar company. To be prepared for this, they completed an occupational safety course with the Kenyan Red Cross at the end of the year.

Selina Kiptiony is proud of her accomplishment and says: **"I want to be a successful solar technician. Because that way I can give something back to my mother. Maybe one day I can build a big house for them. And I want to be able to live happily and fulfilled."**





## SOLAR LEARNING YOUTH CENTERS

Solar Learning Youth Centers is a vocational training program for disadvantaged youth in Kenya. The training is designed to provide general knowledge in mathematics and physics as well as theoretical and practical knowledge in solar technology. What is learned is put into practice with the construction of a solar plant and supplemented by ICT and business courses. In cooperation with four solar companies, workshops are also held and taster days and internships are offered. The vocational training lasts eight months. Upon completion of this training, the young adults receive a state-recognized license as a solar specialist.



**PROJECT**

### SOLAR LEARNING YOUTH CENTERS

📍 Kenya

📅 Since 2021

👤 Responsibility: **Wolfgang Schneider**

🔗 [www.solafrica.ch/en/projects/solar-learning](http://www.solafrica.ch/en/projects/solar-learning)



# 33 DISADVANTAGED YOUTH

were trained as solar professionals in 2022.



# THE SOLAR MARKET IN ETHIOPIA

Florian Schlegel has been working as a project manager for Solafrica for nine years. He is an expert on solar energy in Ethiopia and the specifics of the local solar market. We interviewed him about the potential of solar energy in the region known as the Horn of Africa.

## **For what reasons is solar energy so promising for Ethiopia?**

In Ethiopia, only about half of the population has a connection to the power grid. The houses and settlements are spread over long distances in remote highland regions. It would not make sense to expand the power grid over these distances. Decentralized solar systems offer a good alternative to this, thanks to intense solar radiation and low seasonal fluctuations.

## **Biomass is primarily used for cooking in Ethiopia. Why is that a problem?**

On the one hand, the users are exposed to harmful smoke every time they cook on a daily basis. They often suffer from respiratory diseases because of this. On the other hand, the practice is also a problem from an ecological point of view, especially because far more biomass is removed than grows back. As a result, forest areas shrink, soil erodes away, droughts increase, and a lot of CO<sub>2</sub> is released.

## **How can solar energy help solve these problems?**

For a large part of the rural population, there is currently no alternative to cooking with biomass. They do not have the financial means to switch to electric cooking, because it would mean having to purchase battery storage and electric cooking equipment in addition to the solar system. So what is needed is a fuel alternative that is harmless to health, cost-

effective and climate-friendly. Such alternatives can be produced on the basis of solar power and water, both of which are abundantly available in Ethiopia. This means that climate-friendly fuels could simply replace biomass as an energy source. The Solar Fuels project therefore aims to establish a center for applied research of power-to-X (see next page) in a local context at a university in Ethiopia.

## **Why is solar energy not more widespread in Ethiopia, despite good conditions?**

While training solar specialists in Ethiopia (see page 9), we have noticed that access to the solar market is difficult despite good training. To better understand why this is so, we conducted a market system analysis with local partners. This revealed that many different obstacles exist that hinder the development of the solar market in Ethiopia. Examples are the lack of networking within the industry or difficult customs conditions for solar products. In the project Advocacy Strategy Ethiopia (see page 20), various measures are now being developed and implemented to overcome the identified obstacles. This should enable the solar sector in Ethiopia to develop better in the future.

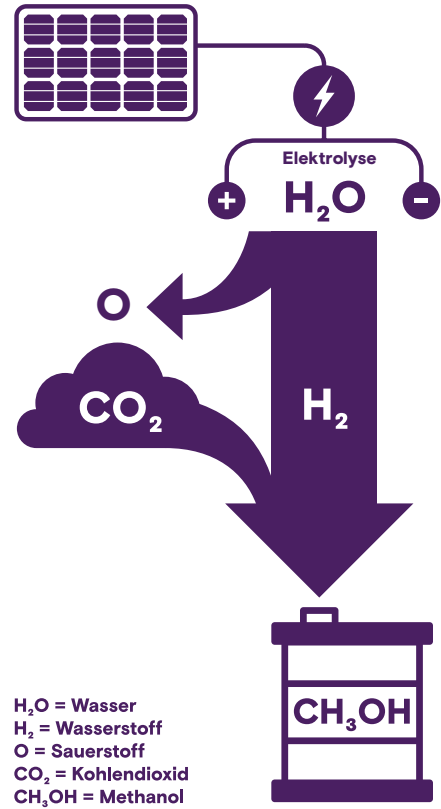




## POWER-TO-X

Power-to-X (P2X) is an umbrella term for the storage of renewable energy ("power") in a chemical substance ("X"). One example would be using solar energy to produce methanol. This methanol can then be burned at a later time, thus releasing the stored energy when needed. In this way, power-to-X technologies enable renewable energy to be converted into products that can be accumulated and stored. The products produced by means of solar energy are called solar fuels.

The most important element of P2X technologies is the electrolysis of water – which is the splitting of water into hydrogen ( $H_2$ ) and oxygen (O). This hydrogen can be used directly as a fuel. Another option is to process the hydrogen further, for example into methanol. While the process does require additional energy, this disadvantage is outweighed by the fact that methanol is much easier to handle than hydrogen.



## SOLAR FUELS

The Solar Fuels project aims to establish a center of excellence for renewable fuel production at Adama Science and Technology University (ASTU) in Ethiopia. As the first step, we worked with our partners to design a demonstration and research facility as well as an educational and research program for power-to-X technologies. In a second project phase, this facility will be built at ASTU. The future aim is for the competence center to train more than 10 specialists per year.



## ADVOCACY STRATEGY ETHIOPIA – GOOD NEWS

The Advocacy Strategy project is helping the solar sector in Ethiopia with a broad-based package of measures to achieve better institutional framework conditions and stronger networking within the industry. On August 8, 2022, the first workshop of the Advisory Group (with representatives from the private, public and non-profit sectors) was held in Addis Ababa. The event, organized by our partner Education for Sustainable Development (ESD), was a great success. The Advisory Group provided us with valuable comments and assessments on the various projects that had been developed by a total of six organizations during the design phase. We also gained important insights from many discussions with the participants on how the Ethiopian solar sector could succeed in undergoing strong development.

### PROJECT

## ADVOCACY STRATEGY

📍 Ethiopia

📅 Since 2021

👤 Responsibility: **Martin Theiler**

➔ [www.solafrica.ch/en/projects/advocacy-strategy/](http://www.solafrica.ch/en/projects/advocacy-strategy/)

### PROJECT

## SOLAR FUELS

📍 Ethiopia

📅 Since 2021

👤 Responsibility: **Martin Theiler**

➔ [www.solafrica.ch/en/projects/solar-fuels](http://www.solafrica.ch/en/projects/solar-fuels)



# BRIDGE BETWEEN TWO WORLDS

On the one hand, there is the booming Swiss solar industry, which is looking for skilled workers; on the other hand, there are many refugees who would like to work, but who have difficulty gaining access to the labor market due to a lack of professional qualifications that are recognized in Switzerland. The Refugees go Solar+ program builds a bridge between these two worlds.

The refugees are from Turkey, Afghanistan, Eritrea, and Syria. They are economists, shoemakers, high-voltage electricians, high school teachers, carpet weavers, or people who left their home country immediately after finishing school. The origins and professional backgrounds of the participants in Refugees go Solar+ are highly diverse – yet all of them are highly motivated to break away from social welfare in the long term by finding employment in the mainstream labor market.

As with a vocational apprenticeship, qualification takes place in stages on-the-job at partner companies in the solar industry. The main goal at the end of training is a permanent job in a profession related to the solar industry. To succeed in this, participants must develop precisely defined competencies. For designing the qualification, the program has been based on Switzerland's dual vocational training system and on the needs of the industry. For example, participants must achieve oral language level B1 in German or French and have to complete various courses on occupational safety.

The program gives refugees a realistic chance to find a long-term professional solution in the mainstream labor market.



## FROM JAFFNA TO BIEL

Sangeev Buwan (35) was 24 years old when he left his home and family in northern Sri Lanka. The aftermath of the civil war, an economic crisis and only modest prospects for work with his training in the garment industry prompted him to travel from Jaffna to visit his relatives in Switzerland.

**"I had to struggle a lot at first. There were the language problems, there were visa problems, and I didn't even dare think about job prospects."**

This changed when Sangeev Buwan learned German and had the chance to do basic training in CNC technology. With his newfound confidence, new doors opened for the young Sri Lankan. He began to do temporary jobs in factories.

Later, Sangeev Buwan was made aware of the Refugees go Solar+ program. With his



professional experience in production, B1-level spoken German skills and Swiss-recognized training, he already had the program-specific prerequisites for a permanent position. After the introductory week, a few taster days and a three-month trial period, Sangeev Buwan got a permanent job at the solar company Swiss PV AG.

**"Working with solar systems is a new experience for me. It's challenging work and I get to exercise my brain in the process. I have a permanent position in a secure job, wonderful co-workers and normal working hours – it's what I've always wanted."**

In his free time, Sangeev Buwan and his wife sometimes make trips to neighboring countries. At home in Biel, he enjoys spending time in his balcony garden, where he grows tomatoes, eggplants, and beans and tends a small herb garden.



## AWARDED THE WATT D'OR

Shortly after the turn of the year, the Refugees go Solar+ program won the 2023 Watt d'Or Swiss energy award in the category "Special Jury Prize". On January 12, together with our partner organization Root & Branch, we had the pleasure of receiving this award for best performance in the energy sector. The Watt d'Or is awarded annually by the Swiss Federal Office of Energy as a "quality seal for energy excellence".

### PROJECT

## REFUGEES GO SOLAR+

📍 Switzerland

📅 Since 2019

👤 Responsibility: **Marieline Bader**

🔗 [www.solafrica.ch/en/projects/refugees-go-solar-switzerland](http://www.solafrica.ch/en/projects/refugees-go-solar-switzerland)

## 10 PEOPLE

10 individuals achieved all prerequisites for the program in 2022 and gained a permanent job with a solar company.





# SOLAR ENERGY FOR HEALTH CENTERS

More than half of the health centers in sub-Saharan Africa have no or only unreliable electricity. Treating patients in these centers is difficult without electric light, and can lead to errors in treatment. Furthermore, it is not possible to refrigerate vaccines or medicines without electricity.

From 2019 to 2022, we were actively engaged with the solar energy project for better primary health care in Cameroon. Within four years, the innovative SolarChill refrigerator was installed in 51 selected health centers – the refrigerator is solar-powered and runs without a battery ([see below](#)). Thus, vaccines and medicines can now be cooled in a sustainable way even in areas without a connection to the power grid.

This has far-reaching positive consequences. For example, there are certain medicines that only need to be refrigerated after they have been opened, as Annie M. Boadji, director of the Akok Maka Health Center, tells us. Because children only require half the dose, she would often have to throw away half the medicine in the past. Now, she can store the second half of the dose in the refrigerator, which in turn has

halved the price of the medicine for children. This is a great relief for parents who are affected by poverty.

In addition to the SolarChills, a solar system for lighting and small electronic devices was also installed at each of 21 rural health centers. The physical installations are accompanied by further training in order to anchor the specialist knowledge locally. Light is essential especially for births but also for emergencies at night.

When Flora Conte, Solafrica's project manager, visited the health center in Mengue Messi, she witnessed an emergency in daylight: a man was brought to the center on a motorcycle. He had severely injured himself with a machete while working in the field and was bleeding profusely. Flora Conte says, looking back: **"I imagined what it must be like when something like this happens after 6 p.m. in the dark – that's when you're really grateful for light as a patient or a doctor. Thanks to solar energy, serious errors in treatment can be avoided"**. Exterior lighting also helps to quickly find the health center in the dark.

## THE SOLARCHILL SOLAR REFRIGERATOR

The SolarChill (solar direct drive) is a solar-powered refrigerator that requires no fossil fuel energy for cooling. The refrigerant is a natural hydrocarbon, free of fluorine and chlorine. What initially sounded like a pipe dream became reality after years of research by an international coalition: rather than storing energy in a battery, solar panels are used to cool water, which in turn chills the vaccines. The cold water ensures that the temperature remains constant between 2 and 8 degrees at any time of day – even when there are more than 72 hours without sunlight. The solar power also directly runs a compressor that keeps the refrigeration cycle going, just like in a conventional refrigerator.



Annie M. Boadji



PROJECT

## SANTÉ SOLAIRE

📍 Burkina Faso

📅 Since 2020

👤 Responsibility: **Flora Conte**

🔗 [www.solafrica.ch/en/projects/sante-solaire-burkina-faso](http://www.solafrica.ch/en/projects/sante-solaire-burkina-faso)

PROJECT

## CLIMATE CARAVAN

📍 Cameroon

📅 Since 2010

👤 Responsibility: **Flora Conte**

🔗 [www.solafrica.ch/en/projects/climate-caravan-cameroon](http://www.solafrica.ch/en/projects/climate-caravan-cameroon)

# 30 SOLAR REFRIGERATORS

were installed in remote villages in Cameroon in 2022.



# SOLAR VIGNETTE

Would you like to power your appliances with solar electricity, but don't have your own roof for a solar installation? Each purchase of a solar vignette finances a piece of a new solar plant in Switzerland, which we build once a year. This piece of solar plant produces as much electricity as your appliance consumes on average in a year.

More and more people are setting an example for the energy transition and sticking a solar vignette on their appliances. As a result, our plants are getting bigger and bigger and the solar vignette is becoming more widely known. In addition, since June 2022, we have complete solar panels in our store, so that larger amounts of solar power can also be financed. The LerNetz organization even donated 39 solar panels in contribution to the new solar plant.

Thanks to this contribution and the solar vignettes purchased last year, at the beginning of August we were able to build 115 solar panels on the roof of the Kita Fantasia in Bern together with our partner Solarify. By the end of the year, the plant had produced 13,216 kWh of solar electricity, which was fed into the Swiss power grid.

The revenue from the electricity of the two existing plants flows constantly back into our projects. Thus you achieve a double effect with the purchase of a solar vignette.

**Order solar vignettes now!**

➤ [www.solarvignette.ch](http://www.solarvignette.ch)

## KITA FANTASIA SOLAR PLANT:

**From August to end of December 2022, 115 panels produced 13,216 kWh of solar power. This saved 5273 kg of CO<sub>2</sub>.**

## HOTEL ROTHORN SOLAR PLANT:

**In 2022, the 25 panels produced 8330 kWh of solar power. This saved 3324 kg of CO<sub>2</sub>.**

**The total of 8597 kilograms of CO<sub>2</sub> saved in 2022 corresponds to driving 63,683 kilometers in a mid-size gasoline-powered passenger car.**

### PROJEKT

## SOLAR VIGNETTE

📍 **Switzerland**

📅 **Since 2012**

👤 **Responsibility: Anna Opladen**

➤ [www.solarvignette.ch](http://www.solarvignette.ch)





## KLIMATICKET



With the KlimaTicket, you donate one centime towards climate protection for every kilometer flown. 100 percent of this amount goes towards the construction of a new Swiss solar plant. As with the solar vignette, the electricity revenues benefit our solar projects.

We deliberately refrain from making an exact calculation of CO<sub>2</sub> emissions. Because that would create the illusion that emissions caused in one place can be saved somewhere else. In reality, however, the CO<sub>2</sub> emitted by the aircraft remains

in the atmosphere for a long time and contributes to climate change. Avoiding CO<sub>2</sub> emissions is therefore always the most effective climate protection. With the KlimaTicket, you do help to protect the climate, but do not reverse the emissions emitted.

199 KlimaTickets were purchased in 2022. This allows us to invest around CHF 9560 in a new solar plant.

➤ [www.klimaticket.ch](http://www.klimaticket.ch)



# 03 THE ORGANIZATION SOLAFRICA

# TEAM



**AMADEUS THIEMANN**  
Project Manager  
Jugendsolar



**ANNA OPLADEN**  
Responsible for Fundraising  
and Solar Vignette  
(since September 2022)



**CLAUDIO CLEMATIDE**  
Financial management  
consultant



**ELIAS KOST**  
District Manager  
Branch Office



**FABIENNE BIEDERMANN**  
Responsible for  
Communication



**FLORA CONTE**  
Project Manager  
Santé Solaire and  
Climate Caravan



**FLORIAN SCHLEGEL**  
Project Manager  
Solar Learning Kenya  
and Ethiopia



**MALOU CORNELSEN**  
Responsible for Institutional  
Fundraising  
(since June 2022)



**MARIELINE BADER**  
Program Manager  
Refugees go Solar+



**MARTIN THEILER**  
Project Manager Solar  
Fuels and Advocacy  
Strategy



**MARTIN WANNER**  
Project Manager  
Scouts Go Solar



**PIRMIN BÜTLER**  
Responsible for Marketing  
and Solar Vignette  
(until June 2022)



**RENATO BREITENSTEIN**  
Responsible for  
Administration Fundraising



**THEO WERLEN**  
Responsible for  
Central Services  
(since June 2022)



**WOLFGANG SCHNEIDER**  
Project Manager  
Mobile Solar Learning  
and Solar Learning  
Youth Centers



# SOLAFRICA ASSOCIATION

Solafrica is organized as an association. Its members are the Board of Directors and its permanent employees. It is not possible for private or legal persons to hold shares in Solafrica.

In 2022, 14 permanent employees shared 800 work percentages (as of 12/31/2022. 2021: 11 employees, 695 work percentages). The employees and board members of Solafrica also worked an additional 1168 hours on a voluntary basis.

## SOLACRACY

Since 2021, Solafrica has no longer been organized in a hierarchy. Instead, we work in a structure called "Solacracy", a form of organization adapted to us, inspired by the concepts of Holocracy and Sociocracy. Instead of hierarchies, Solafrica focuses on purpose-built roles and circles that represent the different responsibilities and fields of activity. In this way, we want to promote dynamism and equality in our processes.

Solafrica attaches great importance to progressive and fair working conditions for its employees. Another aspect of Solacracy is a fair, comprehensible and transparent wage system. Decisions concerning the development of the organization are discussed together in team meetings held every two weeks.

We maintain close cooperation and communication on equal terms with our partner organizations in the project countries. Strategic decisions are prepared and made together.

## BOARD OF DIRECTORS

The executive body of Solafrica is the Board of Directors.

- Cédric Marty (Co-President), M. Sc. Management Technology and Economics ETH, Head of Sustainability
- Kuno Roth (Co-President), Dr. rer. nat. Chemistry, Human Ecologist, Environmental Educator, Journalist
- Carmen Carfora, lic. phil. UZH, MAS Communication Management and Leadership, Sustainability & Communications Expert
- Christine Badetscher, MSc Agronomy, Member of the National Council
- Daniel Wyniger, lic. rer. pol., dipl. Certified Public Accountant, MSc Applied Ethics, Audit Expert of the Swiss Federal Audit Office
- Nadja Scherrer, Exec. MA in Intercultural Communication, VP/JEDI & Sustainability Strategist
- Raphael Engler, MSc Management Technology and Economics ETH, Management Consultant

## ADVISORY BOARD

The Advisory Board is a body of experts who may be included in the work of Solafrica for specific topics and tasks.

- Jolanda Fritschi for matters of institutional fundraising
- Marc Lombard for matters of databases
- Luca Muntwyler for support in communication





“ I believe in Solafrica because their projects benefit people and the climate. Solafrica takes a solution-oriented approach and implements projects from which a clear impact is achieved. I also think it's great that, by giving away the solar vignette, I can do good and at the same time draw the attention of those around me to Solafrica's work without seeming pushy.”

“ Thanks to Solafrica and the solar vignette, for many years now, we have been able to make a very real contribution to the energy transition and climate-friendly electricity beyond our educational projects. Also in 2022, our employees voluntarily donated a total of nearly CHF 30,000 in the form of 39 solar panels to the Fantasia Daycare Center in Bern.”



“ Through its projects, Solafrica establishes a relevant and innovative link between education and access to modern, renewable energy – both in developing countries and in Switzerland. In this way, Solafrica has been successfully addressing issues close to the heart of the atDta Foundation for many years: creating prospects for young people through relevant training opportunities in a sector with a promising future. At the same time, Solafrica promotes active knowledge transfer between very different realities and has established itself as an agile partner with a strong network.”





# 04 FINANCES AND ACCOUNTING

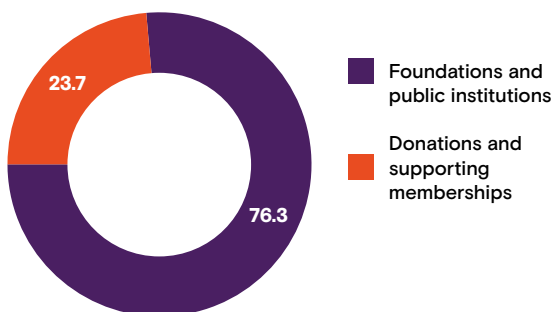


# FINANCIAL SITUATION AND PLANNING

Financially, Solafrica developed steadily throughout 2022 – despite global uncertainty and economic crises. We are pleased to report an increase in free donations, while project contributions were slightly lower than last year. This resulted in total income of CHF 2.4 million. As project implementation has progressed, more resources have again gone into making our projects a reality. This development has allowed Solafrica to continue forward in building the organization's capital, further solidifying our sound financial footing.

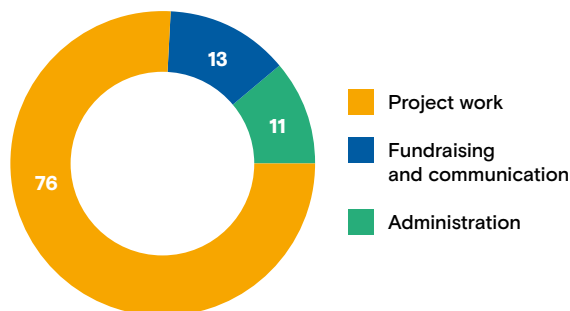
## SITUATION IN 2022

### ORIGIN OF FUNDS (%)



Solafrica continues to be funded largely through contributions from institutional donors. Important and still growing sources of income are private donations and supporting memberships. These revenues now account for a share of almost 24 percent. More than three quarters of our funds are spent directly on the projects. Fundraising and communication expenses account for 13 percent. The continuously increasing revenues show that the fundraising resources are being used effectively. Administrative expenses were also reduced to 11 percent.

### USE OF FUNDS (%)



## PLANNING 2023

Promoting solar energy for people and the climate seems more important than ever. Therefore, Solafrica intends to continue to pursue organic growth and achieve even greater impact by expanding its project portfolio. In order to achieve this goal, we are highly committed to making sustainable investments in the projects, but also in communication and management. In 2023, major investments in a new database and a new website for the solar vignette will be necessary so that we can continue to guarantee the smooth running of administrative processes.



# P/L STATEMENT

<b>OPERATING STATEMENT</b>	<b>2022</b>	<b>2021</b>
Free donations and legacies	558,149	477,589
Program-related contributions	1,544,522	1,676,747
Contributions from programs	249,757	270,080
Supplies and services	-	-
Other income	5,583	250
<b>Operating income</b>	<b>2,358,011</b>	<b>2,424,666</b>
Cost of goods and materials	-	-
Direct program services	-1,447,249	-1,115,888
Personnel	-763,395	-605,518
Real estate, machinery and vehicles	-31,939	-28,526
Other operating expenses	-214,937	-191,584
Depreciation of property, plant and equipment	-3,878	-917
<b>Operating expenses</b>	<b>-2,461,398</b>	<b>-1,942,433</b>
<b>OPERATING RESULT</b>	<b>-103,387</b>	<b>482,233</b>
Financial income	96	70
Financial expenses	-4,606	-2,134
Income from sideline operations	3,655	150
Non-operating and extraordinary success	771	-2,215
<b>Other success</b>	<b>-84</b>	<b>-4,129</b>
<b>RESULT BEFORE CHANGE IN FUND CAPITAL</b>	<b>-103,471</b>	<b>478,104</b>
Allocation of fund capital	-1,544,521	-1,676,747
Use of fund capital	1,844,629	1,409,529
<b>Change in fund capital</b>	<b>300,108</b>	<b>-267,218</b>
<b>RESULT BEFORE CHANGE IN ORGANIZATIONAL CAPITAL</b>	<b>196,637</b>	<b>210,886</b>
Allocation of organizational capital	-657,548	-563,861
Use of organizational capital	460,911	352,975
<b>Change in organizational capital</b>	<b>-196,637</b>	<b>-210,886</b>
<b>RESULT</b>	<b>-</b>	<b>-</b>

All amounts are in CHF

# BALANCE SHEET

BALANCE SHEET	2022	2021
Cash and cash equivalents	1,022,878	1,184,593
Accounts receivable supplies and services	35,916	90,000
Other receivables	-	-
Inventories and unbilled services	-	-
Prepaid expenses and deferred charges	29,655	9,915
<b>Current assets</b>	<b>1,088,449</b>	<b>1,284,508</b>
Financial assets	-	-
Property, plant and equipment	100,762	18,970
<b>Fixed assets</b>	<b>100,762</b>	<b>18,970</b>
<b>TOTAL ASSETS</b>	<b>1,189,211</b>	<b>1,303,478</b>
Accounts payable supplies and services	71,035	81,981
Current interest-bearing liabilities	-	-
Other current liabilities	-	-
Accrued expenses and deferred income	2,700	2,550
<b>Short-term liabilities</b>	<b>73,735</b>	<b>84,531</b>
Long-term interest-bearing liabilities	-	-
Other long-term liabilities	-	-
Provisions and similar items	-	-
<b>Long-term liabilities</b>	<b>-</b>	<b>-</b>
<b>Fund capital</b>	<b>596,913</b>	<b>881,559</b>
<b>Free capital</b>	<b>518,563</b>	<b>337,388</b>
<b>Organizational capital</b>	<b>518,563</b>	<b>337,388</b>
<b>TOTAL LIABILITIES</b>	<b>1,189,211</b>	<b>1,303,478</b>

All amounts are in CHF



# FUNDING SOURCES

Solafrica is financed through donations, contributions from the public sector and proceeds from the sale of its own products.

## INSTITUTIONAL DONORS

Many thanks to the following foundations, cantons, municipalities and parishes, which made Solafrica's projects possible in 2022:

- 3FO Förderorganisation Stiftung
- Abantu Stiftung
- Accordeos Stiftung
- Alfred und Bertha Zangger Weber Stiftung
- ARWEBA-Stiftung
- AtDta Stiftung
- Bärbel und Paul Geissbühler Stiftung
- Beisheim Stiftung
- Bundesamt für Energie
- Bundesamt für Migration SEM
- Canton de Genève – Bureau de la Solidarité
- Carl und Elise Elsener-Gut Stiftung
- Claire Sturzenegger-Jeanfavre Stiftung
- Edith Walder-Stiftung
- Estachius Stiftung
- Ethius Stiftung
- Ev. Ref. Kirchgemeinde Kirchlindach
- Fagus Lucida Stiftung
- Finanzverwaltung Stadt Zürich
- Fivetolive
- Gamil-Stiftung
- Gemeinde Baar
- Gemeinde Herrliberg
- Gemeinde Kandersteg
- Gemeinde Mettmenstetten
- Gemeinde Münchenstein
- Gemeinde Rapperswil-Jona
- Gemeinde Zollikon
- Hans Gutjahr Stiftung
- IDEA Helvetia – Stiftung für Mensch und Umwelt
- Imholz Stiftung
- Irene-Stiftung
- Johanna Bechtler Stiftung für Ausbildung
- Julius Bär Stiftung
- Kath. Kirche Bülach
- Keller-Frei Logistik AG
- Leopold Bachmann Stiftung
- Linsi Foundation
- Lotteriefonds Kanton Aargau
- Lotteriefonds Kanton Appenzell Ausserrhoden
- Lotteriefonds Kanton Basel
- Lotteriefonds Kanton Bern
- Lotteriefonds Kanton Glarus
- Lotteriefonds Kanton Luzern
- Lotteriefonds Kanton St. Gallen
- Lotteriefonds Kanton Zug
- Lotteriefonds Kanton Luzern
- Margarethe und Rudolf Gsell-Stiftung
- Max und Martha Dangel Stiftung
- Max Wiederkehr Stiftung
- Medicor Foundation
- Migros Unterstützungsfonds
- Ökumenische Arbeitsgruppe für Entwicklungshilfe Stäfa
- Parrotia Stiftung

- Ref. Kirchen Bern–Jura–Solothurn
- Ref. Kirchgemeinde Gsteig–Interlaken
- Ref. Kirchgemeinde Spiez
- Ref. Kirchgemeinde Worb
- Reformierte Kirche Kanton Zug
- Röm. Kath. Gesamtkirchgemeinde Bern & Umgebung
- Röm. Kath. Kirche Basel
- Schibli Support AG
- Solargenossenschaft Gugger–Sunne
- Solarspar
- Stiftung Aurea Borealis
- Stiftung Corymbo
- Stiftung Dreiklang
- Stiftung Drittes Millennium
- Stiftung Katharina und Tyge Clemmensen
- Stiftung Mercator Schweiz
- Stiftung Primavera
- Stiftung Pro Evolution
- Stiftung Salientes
- Stiftung Salud y Vida
- Stiftung Temperatio
- The UsitawiNetwork
- TMR Welfare–Stiftung
- Umweltstiftung Greenpeace
- Verein Sonnenkraft
- Volkart Stiftung
- Vontobel Stiftung
- Wilsdorf Mettler Future Foundation
- Zweckverband OSZD

and others

## PRIVATE PERSONS

The income from private donations, supporting memberships, solar vignettes and KlimaTickets increased to around CHF 558,000 in 2022. Solafrica was supported by 285 sponsoring members as of December 31, 2022, corresponding to a donation volume of CHF 30,420.

## SPONSORING MEMBERSHIP

Solafrica's sponsoring members pay a contribution to the organization once a year:

- **Sponsoring membership regular:**  
CHF 60 per year
- **Sponsoring membership high voltage:**  
CHF 240 per year

Sponsoring memberships are particularly valuable to us because they are consistent and we can build on them.

➤ [www.solafrica.ch/en/support/become-a-sponsoring-member](http://www.solafrica.ch/en/support/become-a-sponsoring-member)





# LEGAL NOTICE

This annual report refers to the activities of Solafrika between January 1, 2022 and December 31, 2022.

## Pictures

Pictures were taken by employees and the Board of Directors of Solafrika or by partner organizations.

## Layout

Tina Westiner, Berlin

## Concept, editing and project management

Fabienne Biedermann,  
Communications Manager Solafrika

## Donation account

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[www.solafrica.ch/en](http://www.solafrica.ch/en)

## DILIGENCE AND TRANSPARENCY

Solafrika has been Zewo-certified since 2015. This seal of approval stands for:

- earmarked, economical and effective use of your donation
- transparent information and meaningful accounting
- independent and appropriate control structures
- sincere communication and fair fundraising



**Ihre Spende  
in guten Händen.**

**Solafrika is recognized as a non-profit organization by the canton of Berne. Donations to Solafrika are tax-deductible in most cantons.**





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