SNV Off-grid electricity: Solar PV

The challenge

Globally, over 1.3 billion people lack access to electricity and are forced to rely on polluting and inconvenient kerosene lamps and batteries to light their houses. In sub-Saharan Africa, over 600 million people live without access to the grid and 30 out of 47 countries in the region experience power shortages on a daily basis. Kerosene raises indoor air pollution, causing accidents and severe burns, mostly among children, and killing millions each year. It is women and children who face the biggest risks because they spend most time around the household. In addition, economic development is hindered because companies cannot operate effectively without access to electricity.

The opportunity

Solar PV can solve these issues by providing reliable power and brighter and healthier light. Systems range from small lighting products such as desk lamps to kits coming with a number of lights and phone charging, as well as larger systems that require installation by a trained technician and can power an entire household including appliances like TV, radios and fans.

The benefits of Solar PV are:

- Children can study in the evenings and businesses can operate effectively, all in a clean, unpolluted and safe environment.
- Generating savings: a solar lantern typically pays itself back within a few months from the money saved on kerosene, batteries or paying for mobile phone recharging.
- Electrifying local enterprises and facilitating agricultural processing and water pumping.
- Having a positive impact on climate: solar energy is one of the cleanest sources of energy.

While demand for improved sources of energy is high and solar products are very affordable over time, the uptake by rural low-income households is still limited in most parts of the developing world. Solar companies find it difficult to commercially reach the last mile and rural distributors cannot access finance to stock quality solar products. Plus, consumers cannot afford the high upfront costs of quality solar products.

Our approach

We support the development of sustainable and inclusive Solar PV markets by triggering local and international companies to take the lead and enter rural markets, thereby enabling low-income people to gain access to high quality products. Companies become profitable and exponentially grow their businesses, thus accelerating the markets.

By being well rooted in national networks, we have an in-depth understanding of the local contexts and consumers' needs. The markets we create become self-sustaining and keep working in the long run.

222,000
solar PV devices & systems installed or distributed

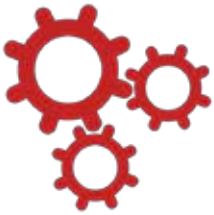
1.25 million
lives improved

13
countries

Data as of December 2015

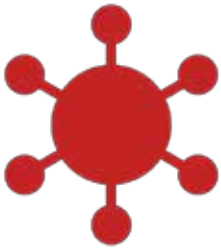
www.snv.org

Igniting solar markets that work for the poor



Developing an enabling environment for the private sector to scale up activities

- **Quality assurance:** raising the quality of the products in the market by cooperating with organisations like Lighting Global/Lighting Africa, or by taking the lead in developing quality assurance frameworks if not available (e.g. for larger solar systems). We also advise customs authorities to introduce certifications for imported solar products.
- **Advocacy** to governments to help reduce import duties and VAT for solar systems.
- **Involvement in policy making:** collaborating with business associations, knowledge institutes, governments, private sector and civil society to help develop policies that will benefit people at the base of the pyramid.



Triggering businesses to join the rural market

Raising the interest of the private sector: we help develop Results-Based Financing (RBF) models through which incentives are given to (local) companies to distribute high quality solar PV to the last rural mile. As a result, rural distribution channels expand and companies can grow their businesses. Apart from solar companies, we cooperate with financial institutions, farmer cooperatives, mobile phone companies and more.

Capacity building: we provide training and advisory services to suppliers in manufacturing, operation, maintenance and after sales stages.

Ensuring access for customers

Behavioural change: we investigate the demand for solar products and if not there, we raise awareness about the benefits of solar PV among potential end-users.

Breaking financial barriers: by linking customers to micro-finance institutions or by supporting suppliers in developing Pay-As-You-Go (PAYG) modalities, we enable end-users to pay off their technologies in instalments, sometimes through mobile banking, fitting their expenditure patterns and overcoming distance. Customers pay no more than they regularly do for kerosene, charcoal and mobile charging.

Who we work with:

Our 70+ experts work in collaboration with a wide range of private sector partners, knowledge institutes, NGOs and donors.

- Donors: AFD, DFID, DGIS, EnDev/GIZ, EU, GEF, MasterCard Foundation, OFID, World Bank and more.
- Business partners: MTN, Schneider, TOTAL, many Lighting Global-approved solar manufacturers and more.
- Non-commercial partners: EnDev/GIZ, GOGLA, IRENA, SE4All, World Bank (Lighting Global, Lighting Africa etc) and more.

High value for money: €6-16/ customer

Data as of December 2015

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SNV Our experience

Results-Based Financing for Pico-Solar Rural Market Development, Tanzania

Donor: EnDev/GIZ/DFID Duration: July 2013 – Oct. 2017 Value: EUR 1.4 million

We partnered with a local bank to establish a 1 million euro fund that is accessible to import-suppliers of qualified solar products. The funds come in the form of performance incentives that firms can claim after the sales of solar products to rural customers. Results are verified and approved by SNV. By the end of 2015, the project facilitated 275 jobs in firms and 449 sales agent (commission-based) jobs. 50,000+ people gained access to solar products.

"Previously, I would walk to a relative's house that is connected to the national grid, to charge my cell phone. Now that I have my own solar system, I charge my phone at home and no longer have to feel ashamed of being the head of an underdeveloped household."
– Farmer in Misungwi district of Tanzania, participant in RBF Pico-Solar Rural Market Development project

Solar PV Products Microcredit Programme, Cambodia

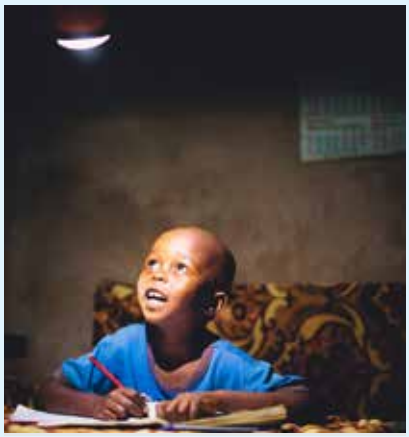
Donor: AFD & EU Duration: Oct. 2014 – Oct. 2018 Value: EUR 8 million

In order to enable the supply of quality solar products in rural areas of Cambodia, we have developed the first-ever domestic quality assurance framework in the country. We have also designed an RBF scheme to support solar companies in expanding their operations to rural areas and by collaborating with local micro-finance institutions, we have helped make the first solar micro-loans available, breaking the financial barriers for rural customers. In less than one year, 1,226 quality-assured solar lighting kits and solar home systems were sold, providing access to solar PV for more than 6,100 people.

EnDev Solar Lighting, Kenya

Donor: EnDev/GIZ Duration: Jan. 2012 – Dec. 2016 Value: EUR 776,000

Through this project we have helped raise awareness about solar lighting across Kenya, provided capacity building for entrepreneurs and facilitated access to finance for both suppliers and consumers. We have also developed the rural and peri-urban distribution channels by identifying central distributors and advising them on business development, and supported the Kenya Renewable Energy Association in lobbying and advocating for a conducive policy and regulations for the Pico-PV sector in the country. The products we have been promoting are approved by Lighting Africa. As a result of the project, 117,238 households now have access to clean energy and 140 people make a living by selling solar products to the last rural mile.



Lighting Global, Burkina Faso

Donor: World Bank Duration: Aug. 2016 – Jan. 2018 Value: EUR 300,000

The project supports the development of a sustainable supply channel for solar lamps in Burkina Faso, focusing on the country's education sector. Through cooperation with Lighting Africa, the reliability of the products will be increased and the distribution channel will be strengthened. At the end of the programme 25,000 Lighting Africa-certified solar lamps will be distributed in 400 primary schools, at least 24,000 solar lamps are to be sold to libraries and 100,000+ people will be impacted by the project.

SNV Our experience

Power out of Poverty Partnership, Benin

Donor: DGIS Duration: Jan. 2014 – Dec. 2015 Value: EUR 744,000

In Benin, in cooperation with the mobile phone company MTN, a network of 102 village micro-entrepreneurs were trained to promote and sell solar products for lighting and recharging of mobile phones through solar carts. Based on a system known as "piggybacking", they used their visibility as MTN retailers to attract customers, and diversified their product offering with solar PV lamps and phone-charging kits. Through the programme, 12,000 lamps were sold, benefitting 60,000 people. 525,000 people charged their phones in one of the 70 solar carts over the duration of the project.

Sustainable Energy for Rural Communities (SE4RC), Zimbabwe

Donor: EU-ACP, OFID & GEF Duration: Jan. 2015 – Dec. 2018 Value: EUR 7.1 million

In Zimbabwe the project seeks to provide 184 Kilo Watt of solar energy to power three irrigation schemes, five business centres, a clinic, a school and a study centre. The overarching aim is to promote access to modern energy services for 10,000 rural people, contributing to better economic and social well-being. The project provides decentralised renewable energy through a partnership of public and private stakeholders and donors. We are implementing it together with Practical Action, HIVOS, Environment Africa and Dabane Trust with support from Government Ministries and Departments. Through evidence-based advocacy we also work with the government to create a policy environment in which independent Power Producers can flourish.

Creation of Solar Energy Market in Niger

Donor: Peak View Global Trust Duration: Sep. 2013 Value: EUR 10,000

Following a multi-stakeholder conference we organised in collaboration with the Government of Niger and UNDP to advocate for clean energy, a tax-exemption has been secured for 1,240,000 solar lamps. This facilitates lower procurement prices for suppliers, which in turn increases the availability of solar lamps for end-users at much lower prices. In cooperation with the Niger Ministry of Energy, we provided market analysis and consumer preferences studies to support the solar tax exemption for seven brands and 23 models, including simple solar lamps and solar lamps with telephone charging facilities.

Pico PV 4 Africa, Burkina Faso, DR Congo & Uganda

Donor: DGIS Duration: Jan. 2014 – Dec. 2015 Value: EUR 1.3 million

Through our market-making approach, we initiated the development of new rural distribution channels in the three countries and secured the support of the private sector through a partnership with TOTAL. As a result of the programme, around 30,000 Pico PV products were sold, impacting more than 181,000 people in rural areas.

Contact

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