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Off-grid electricity

SNV contributes to increased access to electricity for households and businesses by supporting market development for off-grid solar PV and mini-grids. Through these decentralised renewable energy solutions, SNV has supported access to electricity for more than 4 million people so far. Our strong local presence coupled with decades of experience has brought us an in-depth understanding of the barriers to be unlocked to increase energy access. This has positive impacts on households and businesses but also on education, health, poverty, social inclusion and economic development through the productive use of energy.

Challenge

Access to energy is a basic human need, yet more than 770 million people globally lack electricity to light their homes, refrigerate their food or conduct business. For households, dependence on kerosene for lighting, leads to indoor air pollution, related negative health impacts and burn risks. In addition, economic development is hindered because companies cannot operate effectively without access to electricity.

Off-grid electricity can provide a healthy, cost-efficient solution for households and businesses

by providing reliable power and brighter light. Systems range from small household level lighting products to large mini-grids, powered by solar, hydro or biogas. Electricity is used for lighting, powering efficient appliances (for example - TVs, radios and fans), and productive use (for example - cooling, water pumping and irrigation). Renewable energy solutions contribute to climate change mitigation and adaptation, while providing opportunities for youth employment.

Highlights

Results-Based Financing (RBF), has proven to be a valuable instrument to de-risk and catalyse commercial investment to reach the scale required to achieve universal access to energy.

In Kenya and Tanzania alone, with the support of these RBF facilities, more than 2 million people gained access to off-grid solar solutions and close to 5,000 new jobs were created along the solar value chains, with at least 40% of these jobs going to women.

Working with Mozambique's Ministry of Energy (MIREME), rural energy agency (FUNAE) and other stakeholders, SNV through BRILHO supported the development of the first mini-grid energy regulation for Mozambique, approved by Parliament in 2021.

Productive use of energy

Throughout its work in promoting access to electricity through distributed renewable energy solutions, SNV addresses productive use options with particular attention on applications in agriculture, increasing the resilience of farmers and agribusinesses to the effects of climate change. SNV brokers linkages with relevant players along the value chains, building on our extensive track record in the agriculture, water and energy sectors. While targeting impact at scale and systems change, SNV aims for a transition that leaves no one behind, inclusive of remote areas, poor and vulnerable segments of the market, including displaced communities. Ensuring gender equality and social inclusion is central to SNV's work. This includes empowering women and girls with a particular focus on growing women's businesses and women's leadership.

Approach

SNV supports the development of sustainable and inclusive off-grid electricity markets by triggering local and international companies to take the lead and enter rural markets. This enables low-income people to gain access to electricity through distributed renewable energy solutions. Companies offering these solutions become profitable and exponentially grow their businesses, thus accelerating the markets. By being well-rooted in national networks, SNV has an in-depth understanding of the local contexts and consumer needs. The markets that are created become self-sustaining.

Barriers to the market development of energy access are highly contextual. SNV's interventions may address many of these issues on the demand side, supply-side and enabling environment, including access to finance and quality assurance.

The SNV market interventions:

Sustainable supply

- Providing suppliers with advice and supporting the design of viable business models, creative distribution strategies and market intelligence to facilitate entry into new markets.
- Providing early-stage grants and smart incentives like Results-Based Financing (RBF) to private sector suppliers along value chains to scale up operations, increase investment readiness and de-risk commercial investment for further impact.
- Using data analysis to enable quicker adoption of technologies and services among customers with low ability to pay.

Sustainable demand

- Educating consumers in terms of the different technologies and services available, their costs, benefits and potential for economic development.
- Implementing behavioural change communication (BCC) strategies to increase the effectiveness and impact of adopting technologies and services.



A man using an improved cookstove to cook rice in Mozambique

- Providing capacity building to end-users on the appropriate use of technologies and productive use of energy applications in a business setting.

Enabling environment

- Supporting governments in the development of conducive policies and regulatory frameworks, effective implementation of policies and enforcement of regulations.
- Offering institutional capacity development, empowering communities and civil society organisations to advocate for favourable policies and better provision of services. Working with sector alliances to facilitate sector transitions.
- Facilitating multi-stakeholder consultations between relevant players in the energy sector to increase cooperation and avoid duplication of interventions.

Quality assurance

- Supporting standard-setting and quality control, as well as adherence to (inter) national quality standards, warranty and after-sales services schemes.

- Recognising that consumer protection is important to safeguard impact for customers and endorsing the Consumer Protection Code of the Global Off-Grid Lighting Association (GOGLA).
- Stimulating involvement of local centres for performance testing to ensure that technologies provide a continuous and reliable service to the end-users.

Access to finance

- Working together with financial institutions and community-based financing structures to stimulate appropriate financing mechanisms for suppliers and consumers.
- Building capacity of financing entities on the use of consumer financing schemes including Pay-As-You-Go models.
- Implementing early-stage grants and Results-Based Financing (RBF) schemes to de-risk and catalyse commercial investment in the emerging markets where SNV operates.



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Woman switching on a solar light facilitated by the BRILHO programme

Selection of our experience

BRILHO Energy Africa Programme | Mozambique | 2019-2024 | € 34.5 million | UKAid & Sida

BRILHO will catalyse Mozambique's off-grid energy market to provide clean and affordable energy solutions to the country's off-grid population. BRILHO's overall goal is to improve and increase energy access for people and businesses, leading to money-saving, better well-being and livelihood opportunities for the low-income population. The programme is expected to increase energy access in Mozambique for 1.9 million people. The technologies incorporated are Green Mini-Grids, Solar Home Systems and Improved Cooking Solutions. **Contact:** Javier Ayala Arnez | jayala@snv.org



Kenya Off-Grid Solar Access Project (KOSAP) | 2018-2023 | € 44 million | World Bank

KOSAP, a flagship project of the Kenyan Ministry of Energy, and financed by the World Bank, aims to provide electricity and clean cooking solutions in remote, low population density and under-served areas of Kenya. The project will deliver 250,000 stand-alone solar home systems, and higher tier clean cooking solutions to 150,000 households. SNV, partnership with SunFunder is managing Results-Based Financing (RBF) and Debt Facilities to provide incentives to private sector companies to establish operations and to sell solar and clean cooking solutions in the project areas.

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Energising Development (EnDev) | multi-country | 2012-2021 | € 31 million | multi-donor

SNV is an implementing partner of the global Energising Development (EnDev) programme, managed by GIZ and RVO. Through EnDev, SNV has implemented projects in off-grid electrification and clean cooking across 12 countries in Asia, East and Southern Africa and West Africa. See a few examples below:

Market-Based Energy Access (MBEA) project in Kakuma refugee camp promotes sustainable market-based energy access for cooking and lighting by supporting clean energy entrepreneurs.

Results-Based Financing (RBF) for Rural Market Development of Pico-Solar - Tanzania improved market access to and use of quality pico-solar devices and solar home systems for rural and off-grid households. By 2020, this project has helped 1.1 million people gain access to energy.

Kenya Pico PV project targeted off-grid communities in selected counties of Kenya and facilitated access to clean lighting products and services by establishing and strengthening sustainable and commercially viable supply and distribution models

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Selection of our experience

Sustainable Energy for Smallholder Farmers in Ethiopia, Kenya, and Uganda | 2021-2023 | € 8 million | IKEA Foundation

The project incorporates the use of renewable energy technologies and services for irrigation, cooling and drying for smallholder farmers in the dairy and horticultural value chains to help achieve increased productivity, improved nutrition, higher incomes, and improved climate resilience and food security. **Contact:** Hiwote Teshome | hteshome@snv.org



Energy for Rural Communities (SE4RC) | Zimbabwe | 2014-2018 | € 7.3 million | EuropeAid

The SE4RC project in Zimbabwe aimed to promote universal access to modern energy services for 10,000 rural men and women in 2,800 households in Gwanda South, contributing to better economic and social well-being. The project realised the installation of a 99KW decentralised mini-grid, two energy centres and two stand-alone power units that will sell power to three irrigation schemes, five business centres, a clinic, a school and a study centre. **Contact:** Lucy Fulgence | lfulgence@snv.org



Solar Microfinance Programme Cambodia | 2016-2019 | € 7.8 million | French Development Agency AFD and the European Union

By partnering with four leading Cambodian Micro-finance Institutions (MFIs), the programme developed Cambodia's first dedicated solar micro-credit offer for rural households to access solar energy products. The Solar Micro-finance Programme broadened access to affordable solar home solutions for 25,000 households in rural Cambodia. **Contact:** Bastian Teune | bteune@snv.org



Distributed Renewable Energy-Agriculture Modalities (DREAM) | Ethiopia | 2021-2023 | € 4.4 million | Rockefeller Foundation

The Distributed Renewable Energy-Agriculture Modalities (DREAM) in Ethiopia is one of the first initiatives supported under the Global Energy Alliance for People and Planet (GEAPP). The first stage of the DREAM project will facilitate the implementation and private sector operation of nine renewable energy mini-grids and irrigation systems across three regions in Ethiopia, which is expected to impact an estimated 11,500 people. In addition, there will be the implementation of various productive use activities supporting a range of micro, small and medium enterprises (MSMEs), specifically electric vehicles for the transport of goods and persons.

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SNV is a not-for-profit international development organisation that makes a lasting difference in the lives of people living in poverty by helping them raise incomes and access basic services. We focus on three sectors - energy, agriculture and WASH - and have a long-term, local presence in over 25 countries in Asia, Africa and Latin America. Our team of more than 1,300 staff is the backbone of SNV.

www.snv.org

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