Success Stories

Sunref East Africa
PROJECTS

Developed by
With the financial participation of

www.sunref.org/afriquedelest/en
SEIZING THE OPPORTUNITIES OF THE ECOLOGICAL TRANSITION

Environmental integration offers significant economic development potential. Green growth provides a number of opportunities not only to businesses but also to professionals of renewable energy and energy management, through new markets, especially in the fields of:

- Energy management
- Sustainable management of natural resources
- Environmental protection

In East Africa, financing this green growth is a major challenge. The Agence Française de Développement (AFD) contributes to tackling this challenge, in partnership with Kenyan, Tanzanian and Ugandan banks, professional associations and local authorities.
SUNREF: A GREEN CREDIT LINE FOR BUSINESSES THROUGH PARTNER BANKS

In a region where access to energy is far from universal, increasing the production of green energy is a key condition to a sustainable economic growth in East Africa. In this context, SUNREF was designed to help regional businesses to seize the opportunities of the ecological transition.

This innovative and integrated programme is part of a vast initiative developed by AFD, which aims to mobilize public and private banks to finance investments on customized financial terms in the private sector in order to promote greater use of green technologies and sustainable energy.

The aim of SUNREF East Africa is to facilitate access to affordable sustainable energy and to allow companies to acquire higher quality equipment, make cost savings and be more competitive through better energy management and consideration of the environment.

SUNREF is the tailor-made solution that enables companies to acquire better quality equipment, insulate buildings, save on energy costs, increase competitiveness as well as develop green energy projects, or services and activities related to energy management.

In partnership with local partner banks, SUNREF East Africa offers special partnership conditions to enable them to seize the opportunities of green finance.
Lean Energy Solutions
Using biomass boilers to cut energy and production costs

Strathmore University
Becoming the first carbon neutral university of Kenya

Kenya Tea Development Agency
Enhancing tea processing efficiency through energy self-sufficiency

Meru Cooperative
Overhauling milk processing equipment to reduce energy costs and enhance quality
Olivado Biogas
Impacting lives by turning avocado waste into green energy

Thika Cloth Mills
Banking on new technology to modernize textile firm and expand capacity

Partners
USING BIOMASS BOILERS TO CUT ENERGY AND PRODUCTION COSTS

In an effort to provide cost-effective alternatives to expensive steam boilers, Lean Energy Solutions benefited from an AFD / Co-operative Bank SUNREF credit facility. The objective was to offer steam from biomass boilers to clients to enable them to run operations at guaranteed lower costs.

THE ROLE OF AFD

AFD’s green finance label allowed Lean Energy Solutions to finance the start of its business at an affordable cost. SUNREF East Africa covered both the cost of equipment at Lean Energy Solutions facility and the cost of equipment for their first 6 clients.

The technical assistance validated both the quality of the chosen equipment and the business plan of the company, which was still a start-up at that time.

The loan was disbursed by Co-operative Bank, which also covered part of the risk associated with a start-up business with an ARIZ guarantee (a risk guarantee tool under AFD portfolio) thus allowing to finance one of the first Kenyan Energy Service Company (ESCO).
There is an urgency in the global energy sector to shift from the more conventional energy sources to the renewable and sustainable energy solutions. This vision is our core business and the reason for our company’s existence.

Dinesh Tembhekar
Chief Executive Officer
Lean Energy Solutions

**PROJECT AND SOLUTIONS**

Lean Energy Solutions recognized the possibility to drastically reduce the steam cost for industries in Kenya by proposing solutions based on biomass boilers rather than the existing old boilers. It managed to become one of the first Kenyan ESCO by providing contracts to its clients, which guaranteed steam costs reduction of minimum 25%. In order to achieve that, Lean Energy Solutions would take control of the steam operations of their clients and replace their existing old fuel boilers with biomass boilers. The SUNREF loan covered the cost of equipment to manufacture the biomass briquettes at 4 different locations in Kenya, and the cost of biomass boilers acquisition for their first 6 clients.

**IMPACTS**

Lean Energy Solutions benefited from a 1 M$ SUNREF loan. It has signed 12 steam provision contracts so far with major industries in Kenya and employs approximately 500 staff. Finally, the project allowed cutting carbon emission at all industry sites which have replaced their fuel boilers with biomass ones. It is expected that the impact of this loan will further develop as Lean Energy Solutions continues growing, putting in place agreement with farmers, and signing contracts with key industries in the region.

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**INVESTMENT TYPE**

**ENERGY EFFICIENCY**

**TOTAL AMOUNT**
USD 1,0 MILLION

**LOAN AMOUNT**
USD 1,0 MILLION

**ENERGY SAVINGS**
35%

**OVERALL COST SAVINGS**
USD 0.5 MILLION

**EMISSIONS SAVINGS**
8843 t eq CO₂ /y

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**PROJECT IN FIGURES**

YEAR: 2015

KENYA
BECOMING THE FIRST CARBON NEUTRAL UNIVERSITY OF KENYA

To become the first carbon neutral university in Kenya, Strathmore University benefited from an AFD / Co-operative Bank SUNREF credit facility. The objective was to install a rooftop photovoltaic solar plant to reduce fossil energy consumption and reduce energy costs.

THE ROLE OF AFD

Thanks to SUNREF East Africa, Strathmore University was able to access financing to invest in the installation of a photovoltaic solar plant in Kenya. The SUNREF technical assistance was mobilized from the beginning in order to help identify the right partner for project design and implementation, and then went on validating the final design for the benefit of both the Strathmore University and the partner bank.

PROJECT AND SOLUTIONS

Strathmore University is a private university based in Nairobi with a focus in Business, Law and Engineering curriculums. To reduce its fossil energy consumption and to cut down on energy costs, Strathmore Energy Research Center (SERC) installed a 0.6 MW rooftop solar photovoltaic plant to cater for energy needs. In implementing the
Today, more than two years since commissioning we have received so many visitors who are ready to take up this bright journey and help reduce carbon emission and the consequent global warming. This is certainly a successful story and a great model for many in this region.

Prof. Izael da Silva
Deputy Vice Chancellor
Strathmore University

The project, Strathmore University installed a fixed angle roof top solar photovoltaic system.

Strathmore University decided to oversize the generation capability of the photovoltaic plant compared to the electricity consumption in order to export its excess electricity to the grid. This was technically and legally possible but had never been done before in Kenya.

IMPACTS

The project, which was completed in 2015, was a huge success and fully reached its objectives, generating 31% of energy needs and saving up to 51% on the energy bill.

With this plant in place, SERC not only improved its corporate energy policy, but it also developed its training in renewable energy: the photovoltaic solar plant is now used as a live laboratory to train skilled technicians to design, install and maintain solar and energy efficiency installations. Therefore, SUNREF East Africa has contributed to bridge the gap in the energy skilled personnel in Kenya.

Furthermore, Strathmore University managed to sign the first solar photovoltaic Power Purchase Agreement (PPA) in Kenya to export its excess energy to the grid, thus encouraging many project developers of solar projects to follow its example.
ENHANCING TEA PROCESSING EFFICIENCY THROUGH ENERGY SELF-SUFFICIENCY

To improve energy supply to four tea factories in central Kenya, Kenya Tea Development Agency benefited from an AFD / Co-operative Bank SUNREF credit facility. The objective was to build a hydro power plant to reduce costs in processing tea and running factory operations.

THE ROLE OF AFD

Thanks to SUNREF, the Agency benefited from a loan of Co-operative Bank to install a small hydro plant in Gura River and supply 5.6 MW of electric power to 4 adjacent tea factories. Hydro projects have a typical payback period in excess of 8 years and no commercial loan in the country could provide a tenor adapted to that need. SUNREF East Africa with Co-operative Bank helped bridging that gap by providing a 12-years loan.

PROJECT AND SOLUTIONS

Kenya Tea Development Agency is a quasi-private entity charged with the management of tea factories and marketing of processed tea. Biomass and grid energy have been the main sources of power for factory operations, based on the unsustainable exploitation of nearby natural resources.
Kenya Tea Development Agency has benefited from the partnership with AFD/SUNREF in the following ways: affordable financing, quick turnaround time to access loans and friendly terms. Upon completion of the projects, we expect factory electricity costs to reduce by about 50% and the quality and reliability of the electricity supply to improve.

Lucas Maina
General Manager
KTDA Power Limited

The project installation involved horizontal mounting of two 2830 KW Francis turbines with the output power supplying 4 factories.

IMPACTS
Completion of the project has enabled Kenya Tea Development Agency to reduce energy costs by 30%, to improve the power supply of the factories while selling surplus power to Kenya Power and Lighting Company, a public energy utility, on a Power Purchase Agreement (PPA) basis.

Through the innovative SUNREF East Africa credit line, the 4 Kenyan Tea Development Agency factories have adequate supply of hydro-electric power to run operations. It both increased the use and quality of renewable energy and contributed to reduce energy costs. Kenya Tea Development Agency therefore decided to go for several other hydro projects; 2 of them received continued support from SUNREF East Africa.
In order to improve milk productivity and processing efficiency, Meru Central Farmers’ Cooperative Society Limited secured an AFD / Co-operative Bank SUNREF credit facility. The objective was to reduce energy costs and minimize milk losses.

**THE ROLE OF AFD**

Thanks to SUNREF East Africa, Meru Cooperative benefited from a USD 2,3 million loan through Co-operative Bank. SUNREF technical assistance team reviewed the conclusion of an energy audit carried out in the facility, validated the new proposed equipment and designed the new workshop layout. The loan was provided at favorable terms, enabling Meru Cooperative to demonstrate an acceptable pay-back period to the bank.

**PROJECT AND SOLUTIONS**

Meru Central Farmers’ Cooperative Society Limited is a farmers’ milk buying, processing and marketing establishment, which produces chilled and ambient dairy products. It was powered by grid energy and a stand-by diesel generator. Thanks to SUNREF East Africa, the cooperative was able to replace its old inefficient equipment.
Through the support of AFD’s SUNREF programme, we received a loan at very affordable interest rates which enabled us to acquire and install modern machinery that has helped eliminate wastage, maximize efficiency.

Kenneth Gitonga
Chief Executive Officer
Meru Cooperative

with a new set of energy efficient ones, thus significantly reducing energy consumption and costs. As part of the project, Meru Central Farmers’ Cooperative installed a biomass steam boiler, a pasteurizer, a homogenizer, and a sterilizer kit leading to improved energy efficiency.

**IMPACTS**

Energy consumption went down 20% (including 60% on diesel) leading to significant financial gains.

In addition, this energy efficiency project entailed a series of positive effects leading to higher productivity and increased quality: milk loss was reduced by 10%, water loss by 15%, chemicals reduced by 15% and milk quality improved due to a new UHT line. The improved quality of milk also allowed them to start new product lines. Due to the development of new products and the reliability of energy sources, sales increased dramatically.

Through the innovative SUNREF East Africa credit line, Meru Central Farmers’ Cooperative not only benefited from a great improvement of its energy consumption, but also from important other financial gains due to the higher quality of products.
In order to turn avocado pulp, of which 90% is wasted in oil production, into biogas, Olivado Biogas benefited from an AFD / Chase Bank SUNREF credit facility. The objective was to use the resultant biogas to run its oil factory and cut energy costs.

**THE ROLE OF AFD**

Thanks to SUNREF East Africa, **Olivado** was able to access financing in order to invest in the construction of a biogas power plant in Kenya.

Biogas is certainly the most complicated type of renewable energy from a technical point of view, and the SUNREF team was called upon to validate the technical choices proposed in the design.

It gave confidence to the partner bank which decided to move forward with the project.

**PROJECT AND SOLUTIONS**

**Olivado** produces avocado oil for the overseas market. Due to the dire need for sustainable energy supply, **Olivado** ventured into biogas production with the financial support of SUNREF East Africa, using the avocado waste to produce biogas.
The biogas plant saves the earth landfill and curtails further environmental degradation.

**Olivado** has installed 2 digesters financed by SUNREF East Africa to produce 300 KW of renewable energy, which allows to power the entire factory.

**IMPACTS**

Utilization of avocado waste has helped cut down costs related to dumping, reduce the electricity bill, and benefit from a stable source of electricity as opposed to the frequent power cuts which were affecting the controlled avocado ripening process and caused important losses. The produced electricity powers the factory and the excess energy is used for powering tractors of local farmers.

While the avocado oil factory, which operates under fair trade principles, guarantees employment and a market to local communities for the abundant avocado crop, the biogas project would ensure sustainable operations of the factory and guarantee long-term benefits to the local economy.
In order to revive its flagging business and expand Kenya’s capacity in textile manufacturing, Thika Cloth Mills benefited from an AFD / Commercial Bank of Africa (CBA) green credit facility. The objective was to replace old machines with more efficient state-of-the-art equipment that would improve energy efficiency and the quality of its products.

THE ROLE OF AFD

Thika Cloth Mills is one of Kenya’s leading textile industries. The factory has recently started implementing a global modernization programme with the objective to curve inefficiency in every department.

The fully integrated textile manufacturer, which employs about 700 employees, has begun a process of equipment modernization to improve efficiency in consumption of energy, water and chemicals while also cutting costs and waste in order to reduce its environmental impact, increase revenues and improve the quality of its textile products.

The SUNREF programme contributes to these objectives by providing access to finance at an affordable cost for the financing of energy efficient equipment.
Thika Cloth Mills has decided to start this journey and was able to get a loan from CBA, SUNREF partner bank, to finance the 2 first equipment of its modernization plan.

SOLUTIONS AND IMPACTS

Thanks to AFD’s financing, Thika Cloth Mills was able to implement 2 state-of-the-art equipment: a compressor and a spinning machine with expected energy savings of 25% and a payback period of less than 5 years. The machines will also directly contribute to reduction in water and chemicals consumption and will increase the quality of the yarns.

Additionally, due to its focus on Kenyan cotton farmers and ginners, Thika Cloth Mills will promote Kenya’s programme of “Buy Kenya, build Kenya”, which focuses on promoting consumption of locally produced goods and raw materials, with job creation, support for local producers of raw materials and enhanced capacity in the country’s textile sector.
PARTNERS

Partner banks

Local banks are key private sector actors and play a crucial role in financing the ecological transition and green investments. With SUNREF, local partner banks finance private development projects that are more innovative than those usually financed.

Bank of Africa Tanzania’s partnership with AFD is a major step towards ensuring a sustainable environment in which we operate. Our clients are very excited about the low rates of interest, flexible facility tenors and our ability to deliver on timely manner enabling our clients to complete their projects in time.

Ammishaddai Owusu, CEO, Bank of Africa Tanzania

CBA has approved projects in excess of Euro 8 million and is also pursuing several pipeline projects. These green energy projects assist our customers to save on electricity costs and improve efficiency in their operations. Due to the success of this partnership, the bank is in discussion with AFD for a second tranche of financing that is expected to be concluded shortly.

Peter Kiguru, Assistant General Manager, Commercial Bank of Africa

The participation of Co-operative Bank of Kenya in the SUNREF programme has opened up its financial intermediation to the growing renewable energy and energy efficiency sectors through affordable and customized financing for its customers. The technical assistance team at SUNREF has been pivotal to ascertaining the viability and feasibility of projects proposed to the bank for financing. We embrace this partnership and look forward to continued collaboration into the future.

Alois Ngure, Senior Relationship Manager, Co-operative Bank of Kenya

Through its businesses in Kenya and Uganda, DTB is excited to partner with AFD in financing green energy projects for customers in the two countries. The credit line enables DTB to promote its sustainable development agenda by providing its eligible customers with access to credit at concessionary rates; equally important it provides our eligible borrowers the opportunity to benefit from SUNREF’s technical evaluation of their projects.

Alkarim Jiwa, General Manager, Finance & Planning, Diamond Trust Bank

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Institutional partners

**SUNREF East Africa** benefits from the support of local authorities and socio-professional organizations.

As part of their implementation, the **SUNREF East Africa** programs can be supported by local authorities, socio-professional and parastatal organizations.

This is particularly the case with KAM (Kenya Association of Manufacturers), which manages the technical assistance in East Africa, supported by CTI (Confederation of Tanzanian Industries) in Tanzania and UMA (Uganda Manufacturers Association) in Uganda.
For more information about the loan conditions and application procedures, please reach us directly

TECHNICAL ASSISTANCE

SUNREF East Africa Team
contact-sunref@kam.co.ke
+254 (0) 703 957 829

PARTNER BANKS

BOA-Tanzania
www.boatanzania.com

CBA
www.cbagroup.com

Co-operative Bank
www.co-opbank.co.ke

DTB
www.dtbafrica.com

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