



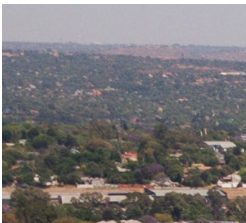
**SIFEM**

SWISS INVESTMENT FUND  
FOR EMERGING MARKETS



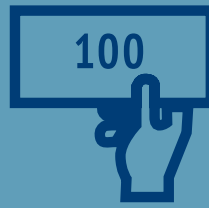
CASE STUDY RENEWABLE ENERGY

# SOLARAFRICA





**2019**  
Investment year



**\$ 10 m**  
SIFEM investment in  
Evolution II Fund



**29**  
employees

## SOLARAFRICA

PROVIDING FINANCE AND ENABLING  
BUSINESSES TO «GO SOLAR»

**Investment:** Commercial Energy SA (CE) (2019) /  
CE appointed SolarAfrica as the Facility Manager

**Region:** South Africa

**Sector:** Renewable Energy

**Fund name:** Evolution II Fund

**Fund Manager:** Inspired Evolution

**SIFEM investment into Fund:** USD 10 million (2016)



> [www.solarafrica.com](http://www.solarafrica.com)

Established in 2011, SolarAfrica is a solar photovoltaic (PV) financing company, providing a financing solution, through its exclusive partnership with Commercial Energy, for rooftop systems of less than 1MW for Commercial & Industrial (C&I) and residential clients. Currently focused on South Africa, SolarAfrica finances a project's construction phase through to commercial operations, working with engineering, procurement and construction (EPC) contractors for project installation and then providing monitoring and maintenance going forward. Once the project achieves commercial operations, the project is acquired by Commercial Energy. Taking into account the high up-front cost for a solar PV system, SolarAfrica offers an alternative to outright purchase..

SolarAfrica enters into power purchase agreements (PPAs) with its clients, with the clients having to pay only for the amount of solar energy they consume, according to an agreed price (indexed according to the rate of consumer price inflation) for the duration of the PPA (typically 15-20 years). SolarAfrica aims to offer its clients savings of 20-40% compared to electricity tariffs charged by local municipalities or the national utility. They accomplish this through the use of an internally developed proprietary software solution which calculates the optimal scale and other parameters of the solar system and takes advantage of the competitive pricing of solar PV power after years of rapidly falling costs. To date, SolarAfrica has installed more than 34,000 solar panels, avoiding more than 12,000 tonnes of CO<sub>2</sub>.





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# THE LOCAL CONTEXT

## SOUTH AFRICA

South Africa is highly dependent on coal, with 90% of its electricity generated in coal-fired power stations, contributing to high per capita levels of CO<sub>2</sub> emissions by global standards. The electrification rate is comparatively high for the region at approximately 85%, but South Africa has a very energy-intensive economy with low rates of energy efficiency. This, combined with increasing energy demand and a backlog of investment in capacity expansion and maintenance, has precipitated periodic rolling blackouts across the country. Furthermore, electricity tariffs have risen by more than 300% over the last 10 years, growing much more rapidly than the national inflation rate. The tariff increases have been driven largely by the national utility's investment in several large new power plants, which have resulted in ballooning debt. These conditions – unreliable power supply, escalating tariffs and concerns about carbon emissions – have driven many electricity consumers to look for alternatives.

## THE COMMERCIAL & INDUSTRIAL SECTOR

Industrial users are responsible for approximately 41% of the electricity consumed in South Africa, which partly explains why 70% of all new rooftop solar PV installations nationally are in the C&I sector. South Africa has a highly competitive solar contractor market as well as some of the world's best solar irradiance resources. These two drivers, together with the increasing local electricity pricing and the continued reduction in the cost of solar PV hardware, make solar PV an increasingly attractive option within the C&I market. Despite the obvious advantages of solar PV systems, however, the market for C&I solar has only started to mature in recent years. Local challenges in this sector include access to financing for new projects, overall customer awareness and education, as well as regulatory uncertainty for larger projects (1MW+). Much of the solar PV development in the C&I sector has not been financed, as the financial sector has been mostly absent. As more customers become aware of the cost-saving potential of solar PV, and new financing models gain traction, it is expected that the adoption of solar in the C&I sector will accelerate.





# SOLARAFRICA

## THE APPROACH OF SOLARAFRICA

SolarAfrica targets financing for installations under 1MW, with an ideal average size between 100kW and 400kW to align with the needs of a typical C&I client. These installations carry no upfront capital costs or ongoing maintenance costs for the client, with their only cost being a monthly fee based on the amount of electricity used. SolarAfrica provides all administrative, monitoring, and maintenance services for the duration of the PPA, and retains ownership of the equipment until the end of the PPA.

A streamlined process is essential for SolarAfrica's business model as it allows the company to provide competitive financing for relatively small-scale projects. SolarAfrica provides solar energy only via PPAs, rather than any outright purchase or sales of solar systems. By procuring solar system components in bulk for multiple installations and applying efficient administrative processes, SolarAfrica can ensure more economical pricing for each system financed by Commercial Energy. In general, projects are finalised in less than four months, from first contact with the client to the completed project installation.

## THE UNIFII PLATFORM

SolarAfrica has developed a unique proprietary platform to facilitate their business model. This tool, «Unifi», enables SolarAfrica to connect with Engineering, Procurement and Construction (EPC) contractors and sales agents who are looking for financing to unlock projects and provide their own clients with a financed solar PV solution. It also allows clients to directly connect with SolarAfrica, who can then source EPC contractors for each project.

The Unifi tool acts as both a connector and enabler to support Commercial Energy in providing financing for solar PV projects in an efficient and timely manner. The tool is used to run both technical reviews of projects, and credit reviews of clients to ensure financing is provided in a responsible manner. SolarAfrica has invested significant resources into this tool, developing it into a feature-rich platform, providing its users with access to sizing and pricing tools, electricity tariffs and load profile templates, as well as modules for credit and technical reviews. The result is a platform which supports all parties to deliver a fully financed PV solution to the end client.



## SOLARAFRICA TOWARDS THE FUTURE

SolarAfrica offers both climate-friendly and cost-saving solutions to its clients. The majority of its installations are embedded generation, that is, they are «grid-tied» or connected to the national grid. The solar PV installations are scaled to provide a portion (usually around 25 per cent and up to 40 per cent) of a client's electricity needs, with the remaining power drawn from the grid. This model ensures that the PV system is utilised optimally – ensuring financial viability – and that the client can use grid power to meet peak demand and when the sun is not shining. The downside is that when the grid is offline (during power outages), the solar PV system also does not provide power.

Currently the cost of battery storage is mostly still too expensive to provide cost-efficient stand-alone systems, but SolarAfrica is monitoring this opportunity carefully and expects to be able to offer a reliability solution for all clients within a couple of years.

## LEADERSHIP IN THE SECTOR

The rapid increase of solar PV installations in South Africa over the last few years has highlighted the need for new national policies and regulations to guide and regulate the solar PV market. There is some general regulatory uncertainty, particularly for embedded generation solar PV installations larger than 1MWp, however the sentiment overall is moving in a positive direction towards solar PV systems, even if policy changes are slow to occur.

SolarAfrica is committed not only to lead by example in its implementation of all applicable local and international legislative requirements, but also to contribute to improving the regulatory environment in which it operates. It does this through active membership in the local solar industry association, promoting the implementation of best practice standards within national policies and regulations. By drawing on their own experience and sector knowledge and encouraging improvements of the operating environment, SolarAfrica is contributing to the development of the renewable energy sector as a whole.

## A PROGRESSIVE EMPLOYER

SolarAfrica is a young company which has grown from 2 employees in 2011 to 29 employees in 2019. Providing training and supporting staff development are important aspects of SolarAfrica's culture as a learning organisation. The company ensures that staff have the possibility to grow in their positions and the sector, to give and receive feedback, and to have the possibility to take on greater responsibilities. SolarAfrica also implements flexible workforce principles, including the possibility for staff to work from home on a regular basis.

SolarAfrica has comprehensive human resource policies which cover its own operations and extend to its procurement of EPC contractors. The company ensures that all stakeholders in its supply chain comply with the labour and working conditions requirements described in IFC Performance Standard 2 (Labour and Working Conditions). The company is currently developing an E&S rating system for contractors and considering developing a more formal auditing system to monitor sub-contractors and EPC companies.

**«Everyone is environmentally conscious in the organisation and we all know we are contributing to something bigger. There is a genuine interest from us all to make a difference.»**

– CANDICE LINK, SOLARAFRICA GENERAL MANAGER





## VALUE FOR EPC CONTRACTORS

SolarAfrica is one of many operators within the large framework of the solar PV sector. SolarAfrica's financing solution facilitates not only the solar PV installation for their C&I clients, but also enables the work of the EPC contractors. This indirectly contributes to employment creation within these EPC companies, in an otherwise difficult environment for employment support and creation. In addition, SolarAfrica operates according to high technical standards, which provides its EPC contracting partners with guidelines, including Operational Health and Safety (OHS) requirements, to ensure the delivery of high-quality installations.

In this way, SolarAfrica supports the improvement of standards across the sector. Recognising their work in this area, they were awarded the Africa Green Future Leadership Award and Best Practice Award in 2016.

**«One of the main obstacles of working within the solar sector is gaining access to finance for projects. SolarAfrica provides a financing solution, and this enables projects to materialise. I really like working within the solar sector as I feel like I am contributing to the environment by installing a green energy solution. I was sceptical at first, but I have been convinced – I even had it installed on my own house!»**

– REIN HENKEMANS, EPC ENGINEER AT SOLEC

Solec, an EPC contractor in Johannesburg, South Africa, has performed the installation of several projects financed by SolarAfrica.



## VALUE FOR CLIENTS

Clients of SolarAfrica sign up for solar PV systems both for the contribution to climate mitigation and the cost-saving opportunity. With SolarAfrica aiming to save clients between 20-40% of power costs in comparison to the national utility company's tariffs, and with clients being required to pay only for the electricity consumed, clients can save money from the very first day of the system's operation. The significant CO<sub>2</sub> emission reduction also comes into play immediately upon each project's installation.



**«We started looking into the possibility of solar power due to the unreliability of power and steep increase of tariffs from the national utility company. The deal SolarAfrica offered was for us to always pay less than the utility's tariffs, with no capital expenditures. I don't understand why everyone is not doing the same! Our main focus was to save expenses, as well as act in a climate-friendly way. SolarAfrica handled the installation efficiently and professionally, they did not disturb the hotel's operations at all during the installation. I hope in the future to also install a battery system to improve our energy security.»**

– MR JEFFREY HURWITZ, DIRECTOR OF APOLLO HOTEL

SolarAfrica installed a 112kW solar PV system comprising of 408 modules on Apollo Hotel's roof in 2019. The installation will not only reduce the CO<sub>2</sub> emissions of the hotel but is also expected to save the hotel more than R3 million (USD 200,000) in operating costs over the lifetime of the PPA.



**«Our church is located on the outskirts of Pretoria and we did not have access to the national grid. SolarAfrica offered to install the solar PV system with batteries and to take care of maintenance and insurance, and we would only need to pay a monthly fee for the power consumed. We have a 10-year power-purchase agreement with SolarAfrica, after which we will own the system. As we operate mainly during the day when the sun is shining, we can take full advantage of solar power.»**

– PASTOR BERNARD MULDER, HOUSEHOLD OF CHRIST CHURCH  
(PICTURED WITH HIS WIFE, PASTOR BELINDA MULDER)

Due to its location, Household of Christ Church (HoCC) is not connected to the national grid, and the costs to do so were prohibitively expensive, leading to their search for alternative solutions such as a solar PV system. HoCC now has a fully off-grid solar PV system (60kW) with a 120kWh battery, as well as their own diesel generator as back-up. Prior to the installation of the solar PV system, HoCC were spending R50,000 (USD 3,300) per month on diesel, and now only spend R5,000 (USD 330) per month. This demonstrates not only the large cost-savings for the church, but also their significant reduction in CO<sub>2</sub> emissions.



## EVOLUTION II

Evolution II is a clean energy fund with a dual focus on clean energy infrastructure and resource efficiency. Following SIFEM's injection of USD 10 million into the Fund in 2016, Evolution II committed R100m (USD 7.3 million) to Commercial Energy SA (CE) in early 2019. CE has appointed SolarAfrica as the Facility Manager to provide credit and technical review services for C&I solar PV projects in South Africa. For Evolution II, the solar financing sector has a sustainable future in South Africa because the growth to date is the result of commercial private sector investment, rather than any government subsidies or feed-in tariffs.

Inspired Evolution, the Fund Manager, possesses a deep market knowledge and network which is providing useful support to SolarAfrica at this early stage of its development. Introduction to new partners and assistance with debt fundraising, as well as support for project management, improvement of technical quality and documentation are some of the ways Inspired Evolution is supporting SolarAfrica. These activities also indirectly improve the operations of SolarAfrica's partners, adding value to the chain of operations.

SolarAfrica has identified two primary Sustainable Development Goals (SDGs) as best capturing their contribution towards sustainable growth for the benefit of people and planet, namely SDG 7 (ensuring access to affordable and clean energy) and SDG 11 (sustainable cities and communities). SolarAfrica is a pioneer in developing a workable financial and technical model for implementing renewable energy embedded generation. This has enormous potential for scaling up, both in South Africa and the wider African region. Through their business model, they are inherently supporting the growth of sustainable urban operations via the installation of solar PV systems.

**«The improvements we are implementing as a result of our relationship with Evolution II also filter down to the EPC contractors and our other partners, improving quality and applying industry standards.»**

– CANDICE LINK, SOLARAFRICA GENERAL MANAGER



## LIST OF ABBREVIATIONS

C&I: Commercial & Industrial

EPC: Engineering, procurement and construction

PV: Photovoltaic

PPA: Power purchase agreement

SDG: Sustainable Development Goals

## ABOUT SIFEM

The Swiss Investment Fund for Emerging Markets (SIFEM) is the Swiss development finance institution. It is owned by the Swiss Government and is an integral part of the instruments of economic development cooperation. SIFEM is specialized in providing long-term financing through local funds and financial institutions to small and medium-sized enterprises and other fast-growing companies in developing and emerging countries, focusing on the priority countries of Switzerland's development cooperation. This helps to create and secure more and better jobs and reduce poverty while also contributing towards the integration of these countries into the global economic system.

## ABOUT OBVIAM

Obviam is an independent investment advisor specialised in long-term investments in emerging and frontier markets. Obviam advises public, institutional, and private clients, including the Swiss Investment Fund for Emerging Markets (SIFEM), the Development Finance Institution (DFI) of the Swiss Confederation. Obviam offers investors an opportunity to capture attractive returns and generate sustainable positive impact in emerging and frontier markets, via a proven and responsible investment approach.

Obviam has made reasonable efforts to ensure the accuracy of the data presented. A case study is made possible both through Obviam's first-hand experience and/or the information provided by Obviam's investment partners. The data in this case study is valid as per 2019

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