

## CASE STUDY

**Project:** Solar Street lighting

**Location:** Parliament Road, Nairobi, Kenya

**Year:** 2010



## Eco-Friendly Street Lighting from Powerpoint Systems (EA) Ltd



With the increase in urbanization in Kenya and Africa as a whole, Powerpoint Systems (EA) Ltd invests in staying ahead of its field by developing new solutions to complement specific projects and environments.

Driving the demand for Solar street lighting are factors such as frequent power outages; high maintenance cost; high monthly bills; Climate change; remote locations aiming to modernize and lack of electricity supply. This means that from governments and large organisations, to local authorities, housing associations and owners of private residential and commercial premises, solar-powered lighting solutions are gaining popularity.

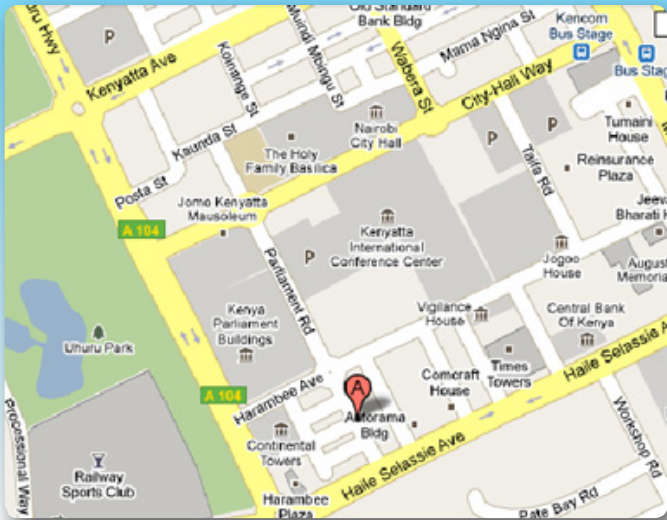
Solar Power can be utilized where the sun energy is in abundance. In Kenya, sun is a naturally occurring and therefore free and efficient resource. Powerpoint is using its expertise and experience to help customers cut energy costs and achieve an ecological solution, wherever their location. The company recently developed solar-powered street lighting systems for the Nairobi City Council.

Each system generates its own energy from the solar modules during the day. This is stored in deep cycle maintenance-free batteries for nighttime use. Intelligent electronics sense nightfall and automatically activate the lamp which, via a user settable timer, can operate either for a pre-set number of hours, or until dawn. An internal charge controller protects the battery against over charge and over discharge and all materials are completely protected against corrosion. To deliver the right solution, each system is custom designed on its individual merits and usage. As well as taking into account the location for use, the options to be considered include the following variables:

- ambient or normal street light,
- maybe a brighter street light to light up a dark spot,
- an individual light,
- or a cluster of lights for a dedicated project.

## Advantages of Solar street lights

- The day to day running and maintenance costs are slashed.
- The lack of wiring to be installed minimizes the disruption caused to, for example, road users during installation
- Power outages have no impact whatsoever on street lighting in the area
- Solar street lights can be easily erected in almost all locations
- Location Flexibility
- Battery backup for cloudy or rainy days
- No scheduled maintenance for up to 5 years
- No monthly electric bills
- Controlled charging to prolong battery service life
- Better light source - LED lights feature cool white light without flickering and higher brightness than sodium lights
- Safe 12 volt/24 volt circuit, no risk of electric shock
- Environmentally friendly - 100% powered by the sun, solar panels reduce fossil fuel consumption, eliminating pollution
- Self-contained solution - Light on/off controlled by automatic daylight sensing or hour preset, no running or maintenance cost



The panel size in solar lighting system dictates the amount of energy produced and the size of the battery required to efficiently power the light. The battery, normally buried under the mounting post, is thus protected in torrid conditions, tempering the variation between daytime heat and nighttime cold. Conversely, it can also be mounted on the lamppost for easier access.



The system was powered using high quality SHURJO solar PV modules. The customized induction lamp IC technology provided are self-contained systems with a performance life up to 100,000 Hours, lasting up to 100 times as long compared with incandescent lamp.

In these times of heightened environmental awareness, electric street lighting is rightly regarded as an enormous consumer of electricity, at a vast financial and environmental cost. However, because of the road safety and security benefits which result from a good street lighting system, authorities everywhere are keen to implement cost-effective and environmentally friendly lights. Solar street lights can deliver that much-desired outcome and offer an exceptional lighting program whilst, at the same time, producing considerable economic and environmental savings.

