

# SUN LIGHT STORY

**We are privately owned Czech company in photovoltaic (PV) energy market in Central Europe oriented on turnkey services for Small and Medium Enterprises and public electrical energy systems sector. We are ready and willing to offer our services to ACP countries.**

*We have analyzed all the relevant information concerning renewable energy resources application for Africa. We have identified that photovoltaic applications are at the beginning phase and that a decentralized approach to renewable energy resources is addressed only at the final beneficiary's side (e.g. legal or illegal connections to the grid). Initial energy sources are centralized in power-generating units (e.g. water, thermal, turbo generators units) and the entire electric power business - based on the traditional experiences in the developed countries - has a serious problems. The process of delivering the generated electricity via distribution network to end users is very non-transparent and represents a difficult task. To demonstrate financial feasibility of such investment is almost impossible, and any ROI figures or any CBA outputs seem to be more artificial than the engineering aspect of a project itself. For example, having (on Africa's electric power market) the use of the Compact Fluorescent Lamp, pre-payment meters and to implement the Loss Reduction Program is still a good approach, but it will be, over and over again subjected to, and severely affected by the problems described above. Any financial institution, national or international (via their loans, credits, grants or guarantees) will be still under pressure to assist projects with these high risks, and therefore investment will continue be slow in coming in not only for electric power market, but also for development of the SME as well (for more details see my presentation to participants of the CDE European Institutional Network Annual Meeting in Florence, October 2009).*

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**Two years ago a good friend of mine** - older man a teacher who traveled all the world, and just came back from mission in Africa, asked me, if I can help him. He wanted me to design simple and inexpensive solar lamp that can be used in rural African houses. He told me, that he can teach children in school during day, and everything is just all right, but when the teacher gives the students homework, some of them cannot complete it, because there is no light in their homes. My friend went to these houses and told me, that some of these families are using candles, or kerosene lamps, but when they run out of the supplies, there is no light. And when there is no light, children cannot make their homework, parents cannot do a work around the house, and all the life stops with first sign of the darkness. My friend also told me, that there are over one billion people around world, who don't have access to electricity and light, **and that's a lot of people.**

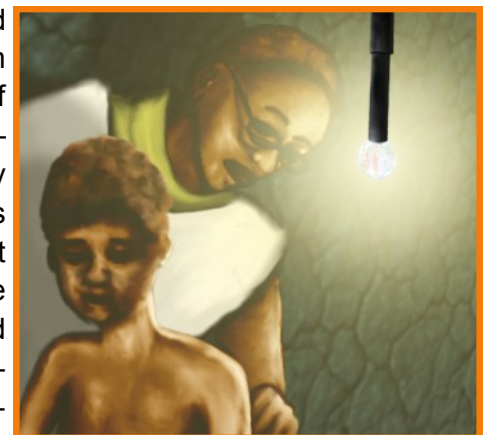


**First we looked at the construction** - of typical African rural dwellings and noticed similarities in construction of most roofs - and this is actually what determined the basic philosophy of the whole design.

**Then we put together group of the good people** - good engineers from three different continents in order to deal with any problems that would arise in the course of design, development, testing and production of this light - because is not simple to develop simple and reliable device.

**It took lot of changes and almost two years of the work.**

**Sunlight is here** - we designed this light to be simply inserted from outside, through the thatched roof on south side of the dwellings - then a solar part stays permanently on the roof charging the batteries that are built inside, and the light part stays permanently inside of the dwelling, where the light is operated by switch. Simple - one piece device, with no outside wires or batteries - no installation - no repairs.



**Lights with incredible flexibility** - need more light for rural hospital or shop? - just insert 10 or more of these lights in roof and they will work automatically. In the near future we are planning to enclose micro USB connector to charge mobile phones, and if you have more of these lights - you can charge a laptop. This is almost like electric LEGO, that can make life of billion people little easier.

*Thomas P. Chrupa Ph.D.; email: thomaschrupa@hotmail.com*



## WORLD'S BEST PRACTICE

### CASE STUDIES:

#### **Price reduction: Aurolab in India – Intraocular lenses:**

*Aurolab has brought the price of intraocular lenses down to \$4 from the \$100 they cost in the United States.*

*Aurolab is now one of the largest intraocular lens manufacturers in the world with 7 percent market share, selling 600,000/ plus units per year to 86 countries.*

#### **From Strategy to Business: Danone yogurt for Bangladesh:**

*Danone strategy:*

*To offer a product with nutritional value; to protect the environment; to be economically viable; and unique distribution and selling system was developed.*

*Finally cost of a new Danone yogurt was much more less than a price for traditional Bangladesh yogurt.*

#### **New ways of doing business: Mobile boom in Africa**

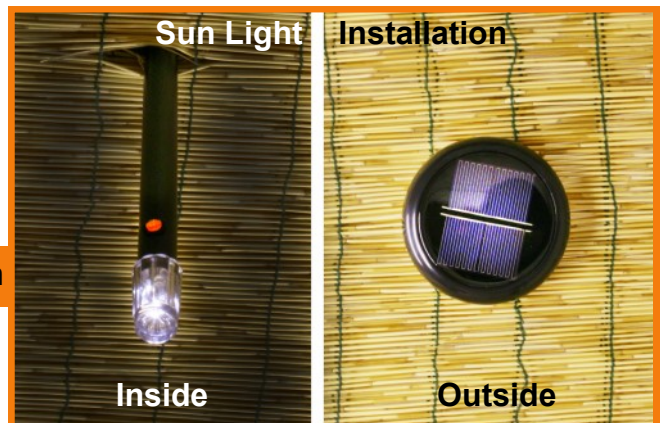
*Over the past five years the continent's mobile phone use has increased at an annual rate of 65 percent - twice the global average.*

*About 38 million Kenyans has over 5.6 million mobile phone subscribers, despite the fact that only 200,000 Kenyan households have electricity.*

## Current Situation



## Sun Light Installation



## SUN LIGHT DESCRIPTION

One piece sun light (1) with solar cell (2) installed in top module also contains photocell that disconnects the lighting element during day. Power storage are by NI-CD rechargeable batteries. The light elements (3) are a single ultra high bright LED .

Installation: the light is inserted in south side of the thatched roof, for wooden or other roof drill the hole.

Water proofing: rubber seal between roof and shaft - enclosed

Securing: the light is secured against removal from outside by round plate and pin inside

Operation: photocell automatically disables the light LED during the day in order to prevent power drainage during daylight. The LED is operated with switch (4) inside of the dwelling. Connector to charge mobile phones is installed on the opposite side of switch.

Sun Light system (SLs) is under U.S. patent registered. Feasibility study "Micro-entrepreneur's Sun" will balance market needs and final technical solution for any specific case. SLs is presented by prototype.



**We are looking for a partner for our Sun Light Technology.**