

Sustainable rural electrification in Kitonyoni, Kenya

Kitonyoni is an off-grid rural market village in Makueni County, Kenya. The Energy for Development (E4D) Network worked closely with the villagers to determine their needs, aspirations and goals with respect to electrification and business. This activity is supported by the local and national government in Kenya.

To meet these requirements a business and community model was developed. E4D's goals are to establish an economically sustainable approach, whereby the community contributes to the project and is responsible for the operation and maintenance of the plant. Income is generated for the Co-operative through share ownership and local sales of electricity, which also finances capital cost.

Together, E4D engineers, local contractors and villagers were able to assemble the 13.5 kWp photovoltaic solar plant within one week in September 2012. The premise of the modular design is to make it easy to replicate and resize to each village's requirements.

Up to 3000 local people can now benefit from electrical services. The school, health center and 40 businesses have round-the-clock stable electricity, allowing them to provide services such as food refrigeration, lighting and phone and battery charging facilities. Rechargeable LED lanterns are sold by the Co-operative to households. Additionally, the solar canopy acts as a collector during the rainy season, enabling water storage for use throughout the year.

Future projects replication

To bring the social, technical, economic and humanitarian benefits of this project to other villages, replication is key, and the team are working with Kenyan partners to make this happen.

We are searching for partners willing to support future installations in this or other locations. If you are interested in our work or think your company, government or institution would be able to offer help or expertise, please contact us through our website.

Energy for Development Network

The Energy for Development consortium consists of Engineers, Social Scientists, Business and Finance experts. The partners within the consortium are:



University of Southampton
Sustainable Energy Research Group &
Centre for Global Health, Population,
Poverty and Policy



Imperial College
Business School, Innovation and
Entrepreneurship Group



This work is funded under EPSRC grant EP/G06394X/1 of the Research Councils UK Energy Programme, which is a Research Councils UK cross council initiative led by EPSRC and contributed to by ESRC, NERC, BBSRC and STFC.

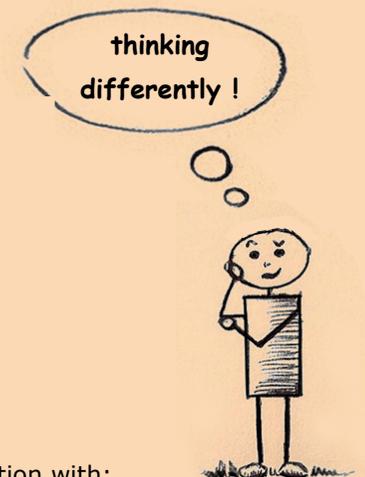
Contact us through our website:
www.energyfordevelopment.net

Energy for Development Network

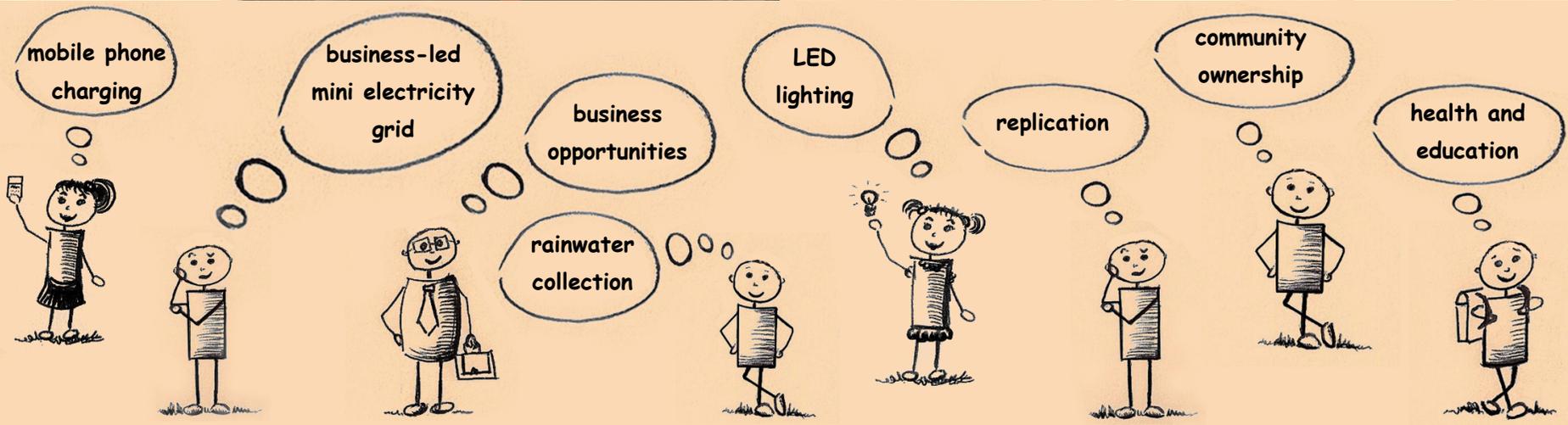
Replication of rural decentralised off-grid electricity generation through technology and business innovation



Kitonyoni rural solar electrification project



In collaboration with:
Makueni County Solar Energy Supply Co-operative Society Ltd.



Capacity building — developing in-country expertise

Engagement at the heart of the community

Social entrepreneurship — opportunity not aid

Design life 25 years — all components are locally available

Modular design for low cost replication

Co-operative ownership open to all in the community

