

# Living and Sustainability: An Environmental Critique of Design and Building Practices, Locally and Globally

**1. Paper / Proposal Title:** Scaling-up renewable energy technologies using solar lantern in rural Africa

**2. Format:**

Written Paper/Verbal Presentation

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**4. University or Company Affiliation:**

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**5. Abstract**

Energy plays a pivotal role in human development. Not only is it sine qua non for national economic development, but it also provides services that enhance social development including, health and sanitation, education, potable water, cooking, electricity. In spite of this, at present, there are about two billion people without access to modern sources of energy, most of them in urban and rural areas of Africa. The over-reliance and unsustainable use of traditional biomass fuel in Africa

leads to a low levels of energy efficiency and ability to mitigate climate change and high levels of deforestation, biodiversity loss, and health hazards due to indoor air pollution. The development of renewable energies (solar PV technology) is panacea to the energy crisis in Africa. The continent has a very attractive solar radiation and has one of the highest levels of average annual solar radiation; 95% of the daily global sunshine above 6.5 kWh/m<sup>2</sup> falls on Africa. An off grid solar PV lantern is one of the possible models of electrification which makes commercially sense in the task of bringing energy to isolated communities in Africa. Using data from a pilot energy in Kenya, this paper shows how this facility could electrify isolated rural communities as interim solution and trigger electrification program with option of jobs creation using solar PV which is a proved technology.

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