

REDUCING CARBON EMISSIONS IN A THIRD LEVEL EDUCATIONAL INSTITUTION IN SUB-SAHARA AFRICA

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Abstract

The effort to reduce carbon emissions as the arguably most prevalent cause of global warming has been a positive trend in most African countries. One of the most successful strategies towards reaching that goal is the shift from fossil fuel power generation to renewable sources of energy such as wind, hydro, geothermal and solar.

As Kenya sits on the equator it enjoys an all year round insolation between 5 to 6 kW/m²/day which is more than double of the average insolation in Germany, a country where solar energy is widely used. Taking advantage of a green line of financial support created by the French Government, Strathmore University embarked in a project to install a 600kW roof-top, grid connected solar PV system to cater for its electricity needs.

Having as a background of the newly instituted Feed-in-Tariff regulation, the system is designed to produce more than the required self-consumption such that the extra power can be sold to the utility via a PPA (power purchase agreement) and the revenue used to pay for the electricity used by the university at night.

This paper describes the whole process from the technical, regulatory, educational and financial aspect highlighting the positive and negative events along the path such that it can be useful for other private sector institutions interested in greening their sources of energy, invest in renewable energy and thus reduce their operation costs. The authors have written this work having in mind not only countries in Africa but all other countries which sit in the so called “solar belt”.

Introduction