

# **A COST BENEFIT ANALYSIS OF ENERGY ALTERNATIVES AND ECONOMIC GROWTH IN NIGERIA.**

**By**

**Emily Ikhide and Charles Adjasi**

**University of Stellenbosch Business School, Cape Town, South Africa.**

**Emmyjay11@gmail.com**

## **1. Overview**

Despite her rich endowment in energy resources, Nigeria has remained one of the many countries in Sub-Saharan African region with low access to energy supply. This has largely emanated from improper use of its natural resource endowment, particularly fossil energy which contributes over 80% to national revenue and the growing energy demand. The consequence is that the depletion of fossil fuel energy, fluctuations in oil prices and recent climate change and global warming constitute important developmental challenges for the country.

Although the call for alternative energy sources is centered on the premise that alternative energy sources (renewable energy sources and clean technologies) help to increase universal access to energy supply, especially in rural areas and in a sustainable manner, the exact effect of renewable energy on economic growth is not yet clear and proven, particularly for countries that are huge exporters of conventional energy (Resnick and Thurlow, 2013, Huberty et al., 2011, Dercon, 2012 and Scott, 2013). In this context, the critical challenge thereof is the selection of the most feasible, technically efficient and least cost energy option, especially in the midst of the heated debate on energy and the environment.

Therefore, the objective of this paper is to carry out a feasibility analysis of off-grid stand-alone renewable technology generation system for some remote rural areas in Nigeria. Specifically, the study compares solar technology with the diesel generator set and national grid electricity supply based on resource endowment.

## **2. Methodology**

In this study, we combined both qualitative and quantitative methods by employing both primary and secondary data sourced from Energy Commission of Nigeria (ECN) and Rural Electrification Agency (REA). The study compared the economic viability of renewable energy sources and fossil energy sources. Cost benefit analysis (CBA) method is used to estimate the life-time cost of projects (Solar Plant, National grid and Generator Set). Three different rural communities are selected composing of 200 households.

### **3. Results**

The results of the study are expected to improve understanding of the cost-benefit analysis framework for renewable energy in Nigeria. It would also clarify the socio-economic viability of investment in alternative energy sources, and ultimately recommend effective policies on inclusive energy consumption for an optimal energy supply in Nigeria.

### **4. Conclusion**

The paper intends to provide an assessment of the socio-economic implications of investing in alternative energy sources for an optimal energy supply mix in Nigeria. The results of CBA will enhance policy makers on the most feasible alternative energy sources for optimal energy supply and economic growth in Nigeria.

### **References:**

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**JEL Classification: Q2, Q3 and Q4**