

ASSESSING THE SUITABILITY AND ACCESSIBILITY OF SOLAR PHOTOVOLTAIC (PV) TECHNOLOGY INFRASTRUCTURE IN SOUTH SUDAN.

Study Area: South Sudan.

Student: Albert Kafiloni Pascal

Supervisors: Dr. Semakula Henry

Dr. Karidewa Nyeinga

Introduction

- More than 1.3 billion people have no access to electricity, 600 million in Sub-Saharan Africa (Morris Lemi & Carnegie La Belle, 2020).
- South Sudan is still faced with huge energy poverty (Tiitmame & Anai, 2018).
- South Sudan electricity is mainly generated from diesel generators (Tiitmame & Anai, 2018).
- South Sudan has embarked on building its electricity sector (Large, 2020). Thus need for a clean, sustainable and reliable source. (Ayik et al., 2020).

Problem Statement

- South Sudan has limited usage of renewable energy (Large, 2020).
- This has contributed to its lowest national electrification rate in the Eastern African region (IRENA, 2020)
- The prevailing electricity is mainly generated from fossil fuel generators (Tiitmame & Anai, 2018), which poses a threat of increasing greenhouse gas emissions.
- In addition, fossil fuel supply and infrastructure are vulnerable (Tiitmame & Anai, 2018)
- Since South Sudan has vast renewable energy potential especial solar PV (Ayik et al., 2020)

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- Diversifying its generation mix using solar PV is vital (Large, 2020).

Main Objective

- To assess the suitable sites for setting up Solar PV technology power plant as well as undertaking the feasibility analysis of solar PV technology in South Sudan.

Specific Objectives

- To develop criteria for suitable location of solar PV infrastructure in South Sudan.
- To determine suitable sites for solar PV infrastructure in South Sudan.
- To assess the feasibility of the suitable sites for solar PV infrastructure in South Sudan.

METHODOLOGY

- **Objective 1**

- Literature reviews
- Solar expert interviews (Questionnaires)
- Community Interviews (Questionnaires)
- Field observations (Checklists)

- **Objective 2**

- GIS & Remote Sensing (for data integration, suitability analysis)

- **Objective 3**

- Solar energy expert interviews
- Focal group discussions

Sites

- Western Bahr el Ghazal state
- Jonglei State
- Eastern Equatoria State