

REVIEWER'S REPORT

Manuscript No.: 50542

Date: 07-03-2025

Title: DEVELOPMENT OF SOFTWARE FOR SIZING AN STAND-ALONE PHOTOVOLTAIC/BATTERY SYSTEM BASED ON MATHEMATICAL MODELS

Recommendation:

Accept ... **Yes**

Accept after revision

Do not accept (*Reasons below*) ...

Rating	Excel.	Good	Fair	Poor
Originality			YES	
Techn. Quality		YES		
Clarity			YES	
Significance		YES		

Reviewer Name: Gulnawaz Gani

Reviewer's Comment for Publication

This paper develops a free, offline software tool for optimal sizing of standalone photovoltaic systems with battery storage, enhancing accessibility and efficiency in renewable energy deployment.

Detailed Reviewer's Report

- This paper presents the development of a software tool for optimal sizing of standalone photovoltaic (PV) systems with battery storage, addressing a crucial challenge in renewable energy adoption.
- It effectively integrates empirical equations into a user-friendly desktop application, utilizing Java (NetBeans) and SQLite for implementation.
- The proposed tool is validated using real-world data from a healthcare center in Guinea, demonstrating its practical utility. The research highlights the importance of precise system sizing in improving energy efficiency and reliability in off-grid locations.
- While the study is well-structured, it could benefit from a comparative analysis with existing commercial sizing software.
- The ethical and economic impacts of solar PV adoption are briefly mentioned but warrant deeper exploration.
- Overall, this work contributes significantly to the advancement of accessible and cost-effective renewable energy solutions.

Decision:

Accept

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