

Manuscript No.: **IJAR-53727**

Date: 10-09-2025

Title: PERFORMANCE EVALUATION OF A 500 kW_p SOLAR PHOTOVOLTAIC POWER PLANT CONNECTED TO GRID USING PVSYST SOFTWARE, IN LAMBAYE AREA, SENEGAL

Recommendation:

- Accept as it is
- Accept after minor revision.....**
- Accept after major revision
- Do not accept (*Reasons below*)

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

Reviewer Name: Mr Bilal Mir

Reviewer's Comment for Publication.

The manuscript presents a detailed performance evaluation of a 500 kW_p grid-connected solar photovoltaic system in Lambaye, Senegal, using PVsyst software (lines 7–19). The introduction (lines 20–142) provides strong justification for renewable energy adoption in Africa but could be shortened to avoid redundancy with cited literature. Some sections are overly descriptive, particularly the background on Senegalese government energy policies (lines 92–129), which might be condensed. Technical clarity is generally good, though certain terms, such as "nominal power ratio" (line 368) and "arrow loss diagram" (line 936), would benefit from clearer explanation for non-specialist readers. Minor typographical issues exist, e.g., "titl angle" (line 493), "ist to produce" (line 128), and spacing inconsistencies in equations (lines 630–657). Figures 1–6 and Tables 1–3 support the analysis but lack consistent caption formatting and should explicitly state units (e.g., Table 3, line 810). References are numerous and relevant, yet inconsistencies remain in style, such as missing journal details (lines 1117–1120) and uneven DOI presentation.

Overall, the paper demonstrates originality and technical quality in simulating the system's performance, highlighting optimal tilt/azimuth configurations (lines 430–515) and loss factors affecting efficiency (lines 936–953). The performance ratio (82.24%) is well contextualized against existing studies, though further discussion of real-world implementation challenges (e.g., dust

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accumulation, maintenance, and financing barriers) would enhance significance. The conclusion (lines 960–974) effectively summarizes findings but could better highlight policy implications for scaling up solar deployment in rural Senegal. With minor revisions to improve clarity, structure, and reference formatting, the manuscript is suitable for publication.