

REVIEWER'S REPORT

Manuscript No.: IJAR-54946

Title: A Comprehensive Study of Contemporary Advancements in Hybrid Renewable Energy Systems Incorporating Artificial Intelligence Methodologies

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: **Sudhanshu Sekhar Tripathy**

Reviewer's Comment for Publication.

(To be published with the manuscript in the journal)

The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewer's name.

Reviewer's Comment for Publication

The manuscript presents a broad literature-based review of AI/ML applications in renewable energy systems with emphasis on solar radiation, forecasting models, hybrid systems, challenges, and technological integration. The topic is relevant and important, and the paper contains extensive referenced content. However, several areas require improvement in structure, coherence, grammar, organization, and academic presentation before the manuscript can be considered for publication.

Detailed Reviewer's Report

1. Scope & Relevance

Strengths:

- The topic aligns well with current global research priorities: renewable energy, AI integration, hybrid energy systems.

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- Covers a wide range of concepts such as AI, IoT, blockchain, smart grids, ANN, and energy storage.

Issues:

- The scope is extremely broad and not clearly narrowed to “Hybrid Renewable Energy Systems.”
- Some sections focus heavily on general renewable energy issues rather than hybrid systems or AI methodologies.
- Lacks a clearly defined research objective and contribution.

2. Structure & Technical Presentation

Strengths:

- Includes sections such as Introduction, Literature Review, Challenges, Applications, Conclusion, and References.

Issues:

- The structure is inconsistent: some sections are overly long while others are incomplete.
- Paragraphs are too large and lack proper sub-sectioning.
- Tables and figures are included but not always explained properly in the text.
- Formatting is inconsistent (spacing issues, random line breaks, alignment problems, numbering errors).
- The manuscript reads more like an unstructured compilation of paragraphs rather than a systematic review.

3. Methodological / Analytical Details

Strengths:

- Includes multiple studies and references in a tabular literature review.
- Mentions AI algorithms and technologies with examples.

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Issues:

- No clear methodology describing how literature was selected, analyzed, or compared.
- No analytical framework, metrics, or evaluation criteria.
- Repetition of concepts (solar radiation, fossil fuel issues, general AI benefits).
- No critical analysis—mostly descriptive content.

4. References & Citations

Strengths:

- Contains an extensive reference list (40+ references).
- Many recent citations (2022–2025).

Issues:

- In-text citations are inconsistent (e.g., “[1-2]”, “[6-10]”, “[22]”).
- Some references seem unrelated or repeated.
- Reference formatting does not follow standard academic style.
- Some references appear self-focused or not directly relevant.

5. Language & Style

Strengths:

- The manuscript attempts to use academic language.
- Technical concepts are discussed adequately.

Issues:

- Numerous grammatical errors and incorrect sentence construction.
- Excessive wordiness, redundancy, and unclear phrasing.
- Frequent run-on sentences and ambiguous transitions.
- Many paragraphs are not academically coherent.

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6. Key Strengths

- Highly relevant topic covering AI, renewable energy, and hybrid systems.
- Large collection of references and prior studies.
- Attempts to cover modern technologies such as IoT, blockchain, smart grids, and ANN.
- Table summarizing literature findings is helpful.
- Figures improve conceptual explanation.

7. Areas for Improvement

1. **Improve the structure** with proper headings, subheadings, and flow.
2. **Rewrite the abstract** with clearer objectives, methodology, and contributions.
3. **Fix formatting issues** (line breaks, numbering errors, spacing, alignment).
4. **Add a clear methodological framework** for the literature review (databases used, keywords, selection criteria).
5. **Reduce repetition**—solar radiation details appear multiple times unnecessarily.
6. **Strengthen the analysis**—include comparison of methods, gaps, and future research areas.
7. **Improve English grammar**, sentence clarity, technical presentation.
8. **Refine references** using a consistent referencing style.
9. **Focus more explicitly on Hybrid Renewable Energy Systems (HRES)** rather than general renewable energy issues.
10. **Add a clear conclusion** summarizing contributions and future directions.

8. Final Feedback to Author

The manuscript covers an important research area and contains valuable referenced content. However, in its current form, it lacks structural organization, clarity, analytical depth, and proper academic formatting. Significant revisions are required to improve the flow, coherence, and scholarly contribution. Enhancing methodological rigor, tightening the writing,

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removing redundancies, and improving technical structure will greatly strengthen the manuscript's quality.