

Review Form 3

Journal Name:	Journal of Energy Research and Reviews
Manuscript Number:	Ms_JENRR_125234
Title of the Manuscript:	TECHNO-ECONOMIC ANALYSIS OF OPTIMAL PHOTOVOLTAIC-BATTERY-DIESEL GENERATOR BASED POWER SYSTEM FOR IBUDO ORA, A REMOTE COMMUNITY IN OGBOMOSO
Type of the Article	Original Research Article

[Review Form 3](#)

PART 1: Review Comments

<u>Compulsory</u> REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p>	<p>This manuscript addresses a significant issue in sustainable energy deployment for remote communities, specifically in Nigeria. The study's focus on techno-economic analysis of a hybrid power system, incorporating photovoltaic, battery, and diesel generator components, offers valuable insights for policymakers and engineers working on rural electrification. The findings are timely and relevant, providing a compelling alternative to solely diesel-based power systems. This research is particularly beneficial for reducing carbon emissions and enhancing system reliability, aligning well with global sustainability goals.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>The title is generally suitable but could be more concise. Consider the following alternative for clarity: "Techno-Economic Analysis of Hybrid PV-Battery-Diesel Power System for Rural Electrification: A Case Study in Ibudo Ora, Ogbomoso"</p>	
<p>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</p>	<p>The abstract is mostly comprehensive, though some restructuring for clarity and flow would be beneficial. I suggest specifying the comparative advantage of EVO over HOMER earlier in the abstract for better emphasis on novelty. Additionally, phrases such as "loss of power supply probabilities" could be simplified to "power reliability metrics" for readability.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>The structure of the manuscript is logically organized, and the subsections are appropriately labeled. Each section flows well, supporting a clear and systematic progression from background to methodology, results, and conclusions.</p>	
<p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p>	<p>The manuscript is scientifically sound and technically robust. The use of the Energy Valley Optimizer (EVO) adds a novel aspect to the study, showing significant improvements in cost-efficiency and emission reduction over the traditional HOMER-based design. The mathematical modeling is well-founded, and the assumptions for system reliability and carbon emissions appear reasonable for this type of study. Overall, the data collection, feasibility studies, and simulation methodologies are adequately detailed, enhancing reproducibility.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>The references are sufficient and mostly recent. However, consider adding recent studies on hybrid energy optimization models to strengthen the literature review.</p>	
<p><u>Minor</u> REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>Language Quality: Minor grammatical corrections are needed for scholarly consistency. For example, ensure uniform usage of terms like "PV" instead of switching between "PV" and "Photovoltaic."</p> <p>Figure Captions: Some figures could benefit from more descriptive captions, especially where multiple graphs are presented side-by-side (e.g., figures for System Behavior across different cases).</p> <p>Additional Information on EVO: A brief description of the Energy Valley Optimizer in lay terms could be added in the introduction or methodology for accessibility.</p>	
<p><u>Optional/General</u> comments</p>		

Review Form 3

PART 2:

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

Name:	Fahel Bin Noor
Department, University & Country	North Carolina State University, U.S.A