Review Form 3

Journal Name:	**Asian Journal of Research in Biochemistry**
Manuscript Number:	**Ms_ AJRB_125728**
Title of the Manuscript:	**Energy Assessment Methodology and Analysis in Post Harvest Food System and Opportunities for Use of Renewable Energy Sources: A review**
Type of the Article	

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
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.	**This manuscript provides an in-depth exploration of energy consumption in the post-harvest food (PHF) system and emphasizes the critical role of energy efficiency and renewable energy sources in reducing environmental impact. The detailed methodology for assessing energy use in unit operations offers a valuable tool for researchers and industry practitioners looking to optimize energy use in food processing. By highlighting both conventional and renewable energy technologies, such as solar PV and biomass, the manuscript proposes sustainable solutions that are timely and essential for combating climate change and food security challenges. The importance of standardizing energy data and improving energy efficiency within the PHF system aligns well with current global efforts to promote sustainable agricultural practices, making this research highly relevant to the scientific community. The focus on reducing fossil fuel dependence in post-harvest operations is particularly significant as it addresses both environmental concerns and long-term cost savings for the industry. Additionally, the inclusion of real-world case studies, such as solar drying in turmeric processing, strengthens the manuscript's practical applicability. Overall, the paper provides a robust foundation for future research and policymaking in sustainable food processing systems.**	
Is the title of the article suitable? (If not please suggest an alternative title)	**A possible alternative title could be: "Energy Assessment and Renewable Energy Opportunities in Post-Harvest Food Systems: A Comprehensive Review"**	
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.	**The abstract is generally comprehensive, but it could be improved in a few areas to make it more concise and focused. Here are some suggestions:** **1. Clarity and Focus: The abstract includes many technical details but lacks a clear emphasis on the purpose and key findings of the study. Highlighting the practical outcomes, such as the benefits of renewable energy sources and the importance of energy auditing, would improve the abstract's clarity.** **2. Reduce Redundancy: The first two sentences discuss similar ideas regarding the role of energy in food preservation. Merging them would make the abstract more concise.** **3. Highlight Key Outcomes: While the abstract mentions the methodology and technologies, it doesn't provide a clear sense of the key outcomes or insights gained from the analysis. Including more specific findings, like the role of solar or biomass energy in post-harvest food systems, would strengthen the abstract.**	
Are subsections and structure of the manuscript appropriate?	**The subsections and structure of the manuscript appear generally appropriate, but there are some areas where improvement could enhance readability and logical flow. Here are my observations and suggestions:** **Strengths:** **1. Clear Sectioning : The manuscript is logically divided into relevant sections such as "Energy in PHF Systems," "Energy Assessment/Accounting," "Energy Estimation," and "Opportunities and Renewable Energy Technologies." This provides a clear path for the reader to follow.** **2. Technical Focus : The manuscript covers both technical aspects (energy accounting, audit, and estimation) and applied aspects (renewable energy solutions), making the structure suitable for readers interested in both theory and practice.** **Areas for Improvement:** **1. Introduction Section :**	

	- While the importance of energy in post-harvest food systems is discussed, there is no clear introductory section that outlines the problem statement, research objectives, or relevance to current scientific efforts. A dedicated Introduction section at the beginning would frame the paper's purpose more clearly. **2. Energy Sources Classification :** **- The distinction between Renewable and Non-renewable Energy Sources is important but could be better integrated into the broader discussion of energy consumption in the PHF system. Rather than treating them separately, consider combining this section under a more general heading like Energy Sources in Post-Harvest Systems to discuss both types comparatively.** **3. Methodology :** **- The section on energy estimation and accounting methodology could be expanded into a more detailed Methodology subsection, explaining the step-by-step process used for energy auditing and assessment in more detail. This would provide a clearer guide for practitioners or researchers trying to replicate the study.** **4. Opportunities and Technologies :** **- The section on Opportunities and Renewable Energy Technologies can be made more organized by adding subheadings for different types of renewable energy technologies (e.g., Solar Energy, Biomass Energy, etc.) to improve readability and structure.** **5. Conclusion :** **- While the manuscript ends with a conclusion, it could be more comprehensive. It should not only summarize the key points but also provide insights into the future direction of research and potential policy implications. This would enhance the impact of the paper.** **Suggested Structure:** **1. Introduction** **2. Energy Sources in Post-Harvest Food Systems** **- Renewable Energy Sources** **- Non-Renewable Energy Sources** **3. Energy Assessment/Accounting in PHF Industries** **4. Methodology for Energy Estimation of Unit Operations** **5. Opportunities for Renewable Energy Technologies in PHF Systems** **- Solar Energy** **- Biomass Energy** **- Other Emerging Technologies** **6. Conclusion and Future Directions** **This structure would make the manuscript more organized and easier to follow, while ensuring all key aspects are covered systematically.**	
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.	**This manuscript is scientifically robust and technically sound because it provides a detailed and systematic methodology for assessing energy consumption in post-harvest food systems, which is a critical aspect of modern food processing. The inclusion of both renewable and non-renewable energy sources, along with real-world case studies, ensures that the findings are grounded in practical applications. The equations and parameters for energy audits are well-referenced, drawing from reliable sources, which adds credibility to the analysis. Additionally, the exploration of renewable energy opportunities, such as solar and biomass, aligns with current global sustainability goals, making the manuscript both timely and relevant to the scientific community.**	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	**The references you've listed cover a wide range of topics, including energy audits, renewable energy, agricultural and food processing, and related fields. However, to determine if the references are sufficient and recent for a particular research or project, consider the following points:**	

	1. Recency: **Many references are quite recent, especially from the last 5-10 years (e.g., Amjad et al., 2023; Bekele, 2021; Morais et al., 2019), which is a good indicator of updated research and relevance to current technologies and methodologies.** **Some references, like Chhinnan et al. (1980) and Ramachandra & Subramanian (1987), are over 30 years old. While foundational, older references may not fully reflect the latest advancements, particularly in rapidly evolving fields like energy and technology.** **2. Balance of Old and New Sources:** **It's essential to have a balanced mix of foundational older studies and recent research. In your list, foundational studies (e.g., Banks, 1977; Parikh & Syed, 1986) provide historical context and background, while recent studies (e.g., Erdiwansyah et al., 2021; Irena, 2021) contribute up-to-date insights.** **3. Relevance:** **The references seem to cover the relevant areas, such as energy consumption in food processing (Ladha-Sabur et al., 2019; Mohod et al., 2011), renewable energy integration (Erdiwansyah et al., 2021), and post-harvest management (Pokhrel, 2021; Bekele, 2021).** **Depending on your specific focus (e.g., renewable energy in food processing, energy audits), ensure that you have more recent references, particularly if the field is changing due to technological advancements (e.g., solar energy, IoT applications in energy management).**	

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	To assess whether the language quality of your article is suitable for scholarly communication, consider the following key aspects: 1. Clarity and Precision : Scholarly writing should be clear, concise, and precise. Avoid overly complex sentences and ambiguous language. For example, instead of writing long, winding sentences, break them down into shorter, more direct statements. Example : Instead of: "The significance of conducting energy audits in the agricultural sector, particularly with regards to the processing and storage facilities, cannot be overstated, as they play a crucial role in optimizing energy use and reducing losses." Use: "Energy audits are vital for optimizing energy use and reducing losses in agricultural processing and storage facilities." 2. Formal Tone : Scholarly articles require a formal, academic tone. Avoid conversational language, contractions, and overly casual phrases. Example : Instead of: "We've seen that energy audits help a lot in cutting down energy waste in these facilities." Use: "Energy audits significantly reduce energy waste in these facilities." 3. Technical Accuracy : Ensure that all terminology is used accurately and is appropriate for your field. Double check technical terms related to energy audits, food processing, and renewable energy to ensure they're used in the correct context. Example : Use precise terms like "energy efficiency measures" instead of more generic phrases like "saving energy methods." 4. Grammar and Syntax : Proper grammar is essential. Make sure that subject verb agreement, verb tense consistency, and punctuation are correct. Example : Instead of: "Energy audits was conducted on various facilities to determine their efficiency." Use: "Energy audits were conducted on various facilities to assess their efficiency." 5. Cohesion and Flow : The article should have a logical flow, with each section building on the previous one. Use appropriate transitions between sentences and paragraphs to guide the reader through the argument. Example : Transitioning from one idea to the next smoothly, such as "In addition to reducing energy consumption, audits also contribute to long term cost savings for facilities, as discussed in the following section." 6. Avoid Redundancies : Repetition of ideas or phrases can reduce the impact of your argument. Ensure that you don't restate the same point in different ways unless it is necessary for emphasis or clarity. 7. Referencing Style : Make sure your references are cited correctly according to the required academic style (APA, IEEE, Chicago, etc.). Proper citation formatting is an essential part of scholarly communication. 8. Vocabulary and Word Choice : Use academic vocabulary appropriate for your audience. Avoid slang or overly simplistic language. Instead of "a lot of energy is used," use "significant energy consumption occurs." 9. Active vs. Passive Voice :	

	While passive voice is acceptable in scientific writing, overuse can make your article sound dull or indirect. Strike a balance between active and passive voice to maintain engagement and clarity. Example : Instead of: "It was observed that energy savings were significant." Use: "The study observed significant energy savings." Overall Evaluation: If your article adheres to these guidelines, its language should be suitable for scholarly communication. However, if there are areas where clarity, grammar, or tone need improvement, revising those aspects can enhance its overall quality. It may also be beneficial to have a colleague or professional editor review the manuscript for any overlooked issues. If you'd like, I can review specific sections of your article to provide more tailored feedback on the language.	
Optional/General comments	The tone of your article should remain neutral and objective, avoiding any overly assertive or subjective language. Use data and references to back up all claims. Ensure consistency in verb tense, typically past tense when describing the methods and results, and present tense when discussing established knowledge. Finally, a thorough proofreading session will catch any grammatical or stylistic issues that may detract from the clarity of your writing. Consider using a peer review service or professional editor for additional feedback. **Comments: I would classify this manuscript as requiring a major revision. While it presents a relevant topic and has a solid foundation, there are areas that need significant improvement in methodology and clarity to meet the standards for publication.**	

PART 2:

	Reviewer's comment	**Author's comment** *(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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

Name:	**K.Ramesh**
Department, University & Country	**Acharya Nagarjuna University, India**