|  |
| --- |
|  |
| Journal Name: | [Physical Science International Journal](http://www.sciencedomain.org/journal/33)  |
| Manuscript Number: | **Ms\_PSIJ\_142503** |
| Title of the Manuscript:  | **Energy recovery from water hyacinth (Eichhornia crassipes) by briquetting as an alternative to wood fuel in Burkina Faso** |
| Type of the Article | **Research Paper** |

|  |
| --- |
| PART 1: Comments |
|  | Reviewers comment | **Authors Feedback** (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. A minimum of 3-4 sentences may be required for this part.** | This manuscript addresses a critical global challenge by proposing a suitable solution to two pressing issues: deforestation and invasive aquatic plant management. By converting water hyacinth into biofuel briquettes, the study offers a sustainable alternative to wood fuel, which is particularly relevant for regions like Burkina Faso where wood consumption is high and forest resources are under severe pressure. The research contributes to the fields of renewable energy and environmental management by demonstrating the potential of underutilized biomass for energy recovery. |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | The title, "Energy recovery from water hyacinth (Eichhornia crassipes) by briquetting as an alternative to wood fuel in Burkina Faso," is suitable as it clearly reflects the study's focus and scope. However, to emphasize the broader implications, a slight modification could be: "Sustainable energy recovery from water hyacinth (Eichhornia crassipes) through briquetting as an eco-friendly alternative to wood fuel in Burkina Faso” |  |
| 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 comprehensive but could be improved by briefly mentioning the facts and figures on environmental benefits of using water hyacinth (e.g., reducing invasive species proliferation and mitigating deforestation). Additionally, the technical limitations (e.g., compressive strength) could be summarized more succinctly to maintain focus on the key findings. Suggestion:"The study highlights the dual environmental advantage of mitigating water hyacinth proliferation while reducing reliance on forest resources, though challenges such as compressive strength require further optimization." |  |
| Is the manuscript scientifically, correct? Please write here. | The manuscript appears scientifically sound, with well-described methodologies, clear results, and logical conclusions. The use of standardized procedures (e.g., French and ISO standards) and detailed equations for physicochemical analyses enhances its credibility. However, the manual briquetting process could benefit from further validation or comparison with mechanized methods to strengthen the findings. In addition inclusion of a stepwise briquetting process flow sheet will enhance the readability. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | The references are sufficient and include recent studies (e.g., 2021, 2023) alongside foundational works. However, adding recent literature on alternative binders or comparative studies of biomass briquettes (e.g., from other invasive species) could enrich the discussion. Comparative Performance and Analysis of Fuel Briquette produced from Water Hyacinth Plant with Paraffin oil, DOI:[10.5281/zenodo.1204296](http://dx.doi.org/10.5281/zenodo.1204296)Progress in the utilization of water hyacinth as effective biomass material, https://link.springer.com/article/10.1007/s10668-023-03655-6 |  |
| Is the language/English quality of the article suitable for scholarly communications? | The language is generally suitable for scholarly communication, but minor grammatical and stylistic improvements could enhance clarity. For example, some sentences are overly complex or redundant (e.g., "This study presents environmental advantages for ecological management of aquatic environments and reduction of forestry pressure"). A professional proofreading pass would be beneficial. |  |
| Optional/General comments | Include few more key words such as biobriquettes, densification, etc.The introduction was briefed about firewood consumption contribution as 65.6% for cooking in Burkina Faso but not mentioned the year and types of firewood species. Starch source was not clearly mentioned in materials and methods.2.5.2 title can be changed to more relevant like Thermo-physical properties in spite of physico-chemical propertiesThe entire results of the study reported solely about the materials tested but not tried to validate the results with similar studies.The manuscript is well-structured and addresses a significant topic with practical implications. However, minor revisions such as refining the abstract, improving language clarity, and expanding the discussion on validation of the results and technical limitations would enhance its impact.  |  |

|  |
| --- |
| **PART 2:**  |
|  | **Reviewer’s comment** | **Author’s Feedback** (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:**

**Aremanda Ramesh Babu, Mainefhi College of Engineering and Technology (MCET), Eritrea**