Review of: "Socioeconomic Impacts of Hybrid Pico Hydro-Solar Generation System Implementation in Sitio Singawan, Barangay Umiray, Municipality of Dingalan, Aurora, Philippines"

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Potential competing interests: No potential competing interests to declare.

Review:

Clear Objectives and Methodology: The article effectively outlines the objectives of the research and the methodology employed, including benchmark surveys, needs assessments, and the development of the Pico Hydro-Solar Generation System. The inclusion of geophysical data and census information adds credibility to the study.

Positive Social Impact: The social impact section provides a compelling narrative of the positive changes brought about by the Hybrid Pico Hydro-Solar Generation System. The improved lighting conditions, enhanced safety, economic opportunities, and overall well-being of the community members are well-documented.

Detailed Technical Information: The technical details regarding the development of the Pico Hydro Generation System and the Solar Generation System are adequately explained. The inclusion of the Automatic Generation Controller (AGC) and Fuzzy-based Maximum Power Point Tracking Solar Battery Charge Controller adds depth to the technical aspects of the study.

Effective Technology Transfer: The article highlights the importance of community engagement, workshops, and training sessions for the successful transfer and adoption of the technology. The establishment of a local committee for system management contributes to the sustainability of the project.

Economic Viability Analysis: The inclusion of a return on investment (ROI) analysis is commendable, providing a quantitative measure of the project's economic feasibility. The calculated ROI of 20.49% adds strength to the argument for implementing renewable energy technologies in rural areas.

Comprehensive Implications Section: The implications section effectively summarizes the positive impacts in various aspects, including improved access to electricity, socioeconomic development, enhanced education, health, safety improvements, and environmental benefits. The capacity building and empowerment of the community are also emphasized.

Conclusion and Recommendations: The conclusion effectively ties together the key findings and emphasizes the importance of meticulous planning and community participation. The mention of customization to meet local requirements

and the support obtained from the Dumagat community adds a layer of cultural sensitivity.

Overall Assessment: The paper is well-structured, providing a thorough examination of the Hybrid Pico Hydro-Solar Generation System's implementation and its impacts. It is interesting to see again and again how such small-scale initiatives add such gigantic value in the target communities. The combination of technical details, social narratives, and economic analysis makes it a valuable contribution to the fields of renewable energy and rural electrification. The study's methodology, results, and implications offer practical insights for similar initiatives globally. The abstract section can include the top three key findings and how they can add value in informing future project or policy designs.