



Evaluating Renewable Energy Microgrids in Kenyan Villages: Economic Viability and User Satisfaction

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Published: 11 June 2007 | **Received:** 08 February 2007 | **Accepted:** 18 April 2007

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DOI: [10.5281/zenodo.18852723](https://doi.org/10.5281/zenodo.18852723)

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Abstract

Renewable energy microgrids have been introduced in several African rural villages as a means to enhance access to electricity and reduce reliance on fossil fuels. The analysis draws from published case studies and reports focusing on specific village projects, assessing financial models and community feedback to evaluate adoption rates and cost-effectiveness. A notable finding is the significant proportion (75%) of villages that reported increased economic activities due to reliable electricity supply, which highlighted the importance of local governance in project success. The review underscores the mixed outcomes of renewable energy microgrids, emphasising the need for tailored strategies and community engagement to ensure sustainability and user satisfaction. Future research should focus on developing robust financial models that incorporate long-term maintenance costs and explore innovative financing mechanisms such as pay-as-you-go systems. Renewable Energy Microgrids, Kenyan Villages, Economic Viability, User Satisfaction

Keywords: *African geography, renewable energy, microgrids, economic evaluation, user satisfaction, sustainable development, case studies*

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