Renewable Microgrids in Off-Grid Mozambique: A Cost-Benefit Analysis Over Three Years

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Abstract

Renewable microgrids have emerged as a viable solution for off-grid communities in Africa, particularly those with limited access to traditional power sources. The study employed a mixed-methods approach combining quantitative data from financial audits with qualitative insights from community surveys and interviews. A significant proportion (75%) of households reported improved energy access, with cost savings averaging $20 per month. Community engagement was crucial for successful implementation. Renewable microgrids offer a sustainable solution to off-grid communities in Mozambique, enhancing socio-economic well-being and environmental sustainability. Communities should be actively involved in planning and decision-making processes to ensure long-term success. Renewable Energy Microgrid, Off-Grid Communities, Cost-Benefit Analysis, Sustainable Development

Keywords: *Sub-Saharan, African, Sustainability, Empirical, Case-Study, Microfinance, Decentralized, Energy-Inequality*

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