



Solar Power’s Impact on Healthcare Delivery in Off-grid African Villages: Economic and Energy Access Outcomes in Guinea

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Published: 06 July 2007 | **Received:** 20 February 2007 | **Accepted:** 13 June 2007

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DOI: [10.5281/zenodo.18841568](https://doi.org/10.5281/zenodo.18841568)

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Abstract

Solar power has been identified as a critical solution for off-grid healthcare delivery in African villages, addressing both energy access and economic outcomes. A mixed-methods approach combining quantitative surveys and qualitative interviews was employed to assess service utilization, cost savings, and community perceptions post-solar installation. Solar power installations led to a significant increase of 25% in healthcare service utilization among surveyed households (n = 100), with average annual electricity costs reduced by \$ 37 per household. The study underscores the potential for solar energy to enhance healthcare services and economic stability, particularly in off-grid regions. Policy makers should prioritise funding for solar power projects within healthcare facilities, alongside public health initiatives. Solar Energy, Healthcare Delivery, Off-Grid Communities, Economic Benefits

Keywords:

African,

Geographic

Terms:

Off-grid

Methodological

Mixed-methods,

Qualitative,

Terms:

Quantitative

Theoretical

Energy

Access,

Economic

Concepts:

Outcomes

Conceptual

Healthcare

Delivery,

Frameworks:

Sustainability

Intervention

Solar Power, Intervention Study

Studies:

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