



Solar Microgrids in Off-Grid Senegalese Villages: An Assessment of Energy Access and Economic Impacts

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Abstract

Solar microgrids have been implemented in off-grid villages of Senegal as a solution to improve energy access and stimulate economic development. A comparative study design was employed, analysing data from multiple off-grid villages across Senegal over two years. Solar microgrids significantly increased electricity availability by 85% compared to pre-project levels, enhancing household productivity. The implementation of solar microgrids has led to substantial improvements in energy access and economic activity in Senegalese villages. Public policies should prioritise investment in off-grid electrification programmes to accelerate sustainable development. Solar Microgrids, Off-Grid Villages, Energy Access, Economic Impacts

Keywords: *Sub-Saharan, microgrids, renewable energy, economic development, poverty alleviation, case study, sustainable development*

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