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Analysis of the Development and Installations of Renewable Energy-based Mini-grids: Case study Uganda

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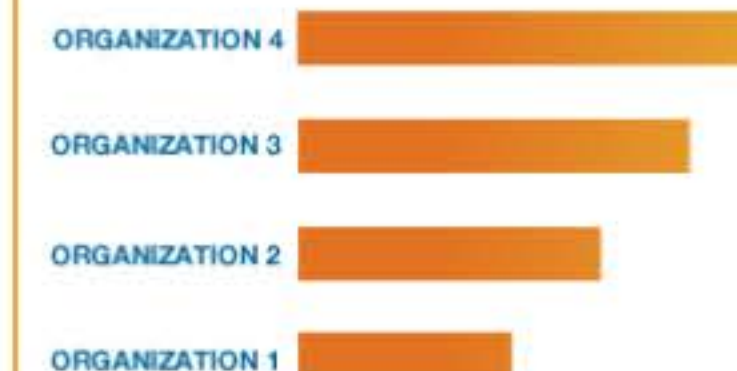
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Abstract:

The provision of energy to all citizens has been an outstanding need in most developing countries in order to meet Sustainable Development Goals (SDGs) by 2030. Uganda as a developing country has put mechanisms in place to provide electricity to her people and be able to realize the national vision of 2040 and be able to address other SDGs by 2030. Solar PV mini-grids are emerging as popular alternatives to address rural electrification shortfall after other renewable energy mini-grid types proved desirable for some period. Uganda's expectations of renewable mini-grids are high with the Ministry of Energy and Mineral Development, the World Bank, and the Government of Uganda showing much interest to support the mini-grid development. This paper, therefore, looks at general mini-grid development and operation models and finds out arguments making renewable energy mini-grids popular at the expense of non-renewable based mini-grids. The methodology focuses on exploring ideas and formulating a hypothesis by summarizing, categorizing, and interpreting both the primary and secondary data. The paper concludes looking at the strength, benefits, and challenges of renewable mini-grids.

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