

# **How much is the hybrid energy of Ethiopian solar container communication stations**





## Overview

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Can a solar/wind/micro-hydro hybrid power system electrify Ethiopian remote areas?

This paper proposed a standalone solar/wind/micro-hydro hybrid power generation system to electrify Ethiopian remote areas that are far from the national utility grid.

How much does a hybrid energy system cost?

The net present cost of the system is \$4,377,731, incorporating capital depreciation and levelized operation and maintenance costs. During the hybrid energy system's lifetime, the cost of a grid extension power supply is \$22.185 million, which is nearly \$17,808,000 more than the cost of the proposed standalone system.

Can a hybrid power generation system combine solar and biogas resources?

To tackle these concerns, the present study suggests a hybrid power generation system, which combines solar and biogas resources, and integrates Superconducting Magnetic Energy Storage (SMES) and Pumped Hydro Energy Storage (PHES) technologies into the system.

Can a hybrid solar-biogas distribution system solve the challenges faced by Debre Markos?

In conclusion, this paper proposes a solution to the challenges faced by the Debre Markos University's distribution system through the introduction of a grid-connected hybrid solar-biogas power generation system, supplemented by an SMES-PHES energy storage system.



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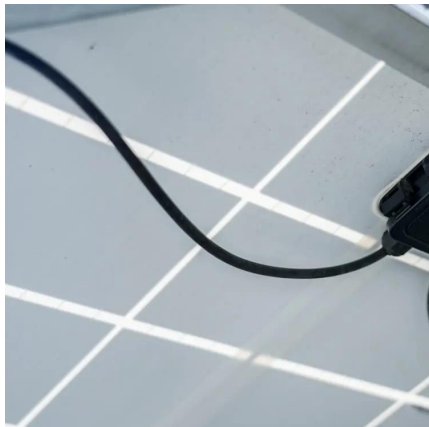
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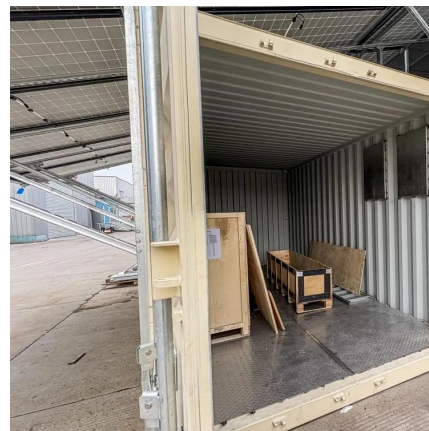
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