

## Kongres Container

# Ghana communication base station inverter



## Overview

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Can solar PV/fuel cell hybrid system power telecom base stations in Ghana?

This study investigates the viability of deploying solar PV/fuel cell hybrid system to power telecom base stations in Ghana. Furthermore, the study tests the proposed power system resilience by comparing its technical, economic, and environmental performance to PV/diesel and diesel power systems.

Can a PV/fuel hybrid system replace existing diesel power systems in Ghana?

Presently in Ghana, base stations located in remote communities, islands, and hilly sites isolated from the utility grid mainly depend on diesel generators for their source of power. This study presents an analysis on deploying a PV/fuel hybrid system as a possible substitute for existing diesel power systems and even grid-connected base stations.

How does diesel genset affect the environment in Ghana?

In Ghana, telecom base stations located in remote communities, islands, and hilly sites with no access to grid electricity mainly depend on diesel genset for their source of power. The combustion of diesel emits GHG, pollutes the environment, and negatively affects the climate.

Which mobile network operators operate in Ghana?

ICT usage accounted for 0.53% of global CO<sub>2</sub> emissions in 2015 and is expected to contribute about 3% to the global emissions for 2020 (Malmodin & Lundén, 2018; Postnote, 2008 ). The mobile network operators (MNO) operating in Ghana are Scancom (MTN), AirtelTigo, Vodafone Ghana, and Globacom Ghana.

How much does a PV system cost in Ghana?

These suppliers and installers have been granted a permit from the Energy Commission of Ghana to supply and install PV systems. Per the data obtained in , the average cost of PV panels with accessories was estimated at 745

USD/kW. A 10% margin for installation was added, increasing PV capital cost to 820 USD/kW.

Can Ghana decarbonize the telecom sector?

Also, it is supported by Ghana's Renewable Energy Act 832, which promotes the utilization of locally available renewable energy resources to cut down greenhouse emissions (Government of Ghana, 2011 ). This is a potential footprint for Ghana towards decarbonization for the telecom sector across the country.

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