

## SolarTech Power Solutions

# Kenyan rooftop solar energy storage



## Overview

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Kenya is stepping up its renewable energy efforts with a newly announced solar-plus-storage project, aiming to enhance energy security and grid stability in a region heavily reliant on hydropower. How much does solar energy cost in Kenya?

Levelized Cost of Energy (LCOE) and simple payback period of US\$ 0.143/kWh and 9.1 years respectively. Kenya boasts of abundant solar irradiation potential across its expansive regions, averaging between 4.5 kWh/m and 6 kWh/m per day. Despite this advantageous condition, solar energy's contribution to the national energy mix remains relatively low.

Does Kenya have a plan to boost solar PV contribution?

Therefore, Kenya has a clear plan to boost solar PV contribution toward the national grid. Such enabling policies have encouraged Solar PV investments, with many homes adopting small standalone solar home systems mounted on rooftops.

How much solar power does University of Kenya get?

The University entered a 20-year power purchase agreement with Kenya power utility and reached a deal of US\$ 0.12/kWh of solar electricity delivered to the national grid as per the agreement under Feed-in Tariff regulations of 2012.

What is the average grid emission factor for solar PV systems in Kenya?

The average grid emission factor for solar PV systems in Kenya for the period between 2019 and 2020 was 0.4087 tCO<sub>2</sub>/MWh. The grid emission factor normally calculates the amount of carbon dioxide that could be avoided by generating power using solar PV systems.

How much kWh will a power plant deliver in Kenya?

Based on the assumptions that the installation will deliver 734,707.73 kWh for

the entire lifetime and with the guaranteed FiT, the annual income (Annual savings by offsetting grid electricity (captive consumption) + Income from energy sold to the Kenya Power Utility) generated is Ksh. 13,976,166.3.

How is Kenya generating electricity?

The Kenyan government installed 300 MW wind turbines in 2016, thus increasing the wind energy contribution to the national electricity mix. The government installed a 50 MW solar plant in 2018 at Garissa County, further boosting renewable energy contribution to electricity generation. Fig. 1 shows the Kenyan electricity generation share in 2020.

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