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Somalia Solar Report

Prepared by J.v.G. Technology GmbH

J.v.G. Technology GmbH is a German engineering company specializing in turnkey solar module production lines and manufacturing consulting, with project experience ranging from 20 MW to 500 MW per production line, including multi-line and gigafactory projects exceeding this scale.

This Solar Report is part of the **PVKnowHow** Knowledge Network.
The data, analysis, and conclusions in this document are based on real research, consulting insights, and international solar market data.

Gain comprehensive insights into the statistics and metrics surrounding the solar production industry in Somalia

KEY POINTS

All figures have been converted into USD

Yearly sunshine (sun hours per year)

Average yearly sunshine: 300 days

Solar irradiance: 5.0 kWh/m²/day

Total energy received in a year: 547,500 kWh

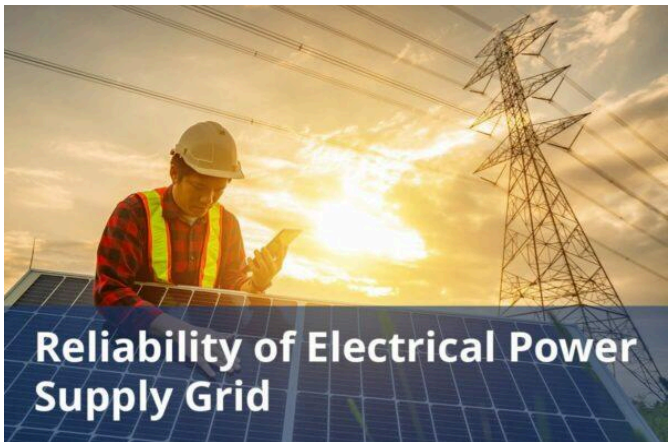
Potential energy generation per year: 500,000 kWh

kWh per kWp installed

Energy generation per kW: 1600 kWh/yr

Average cost per kWh from utility company

Average cost of electricity: $0.12/kWh



Reliability of electrical power supply grid

Solar panel reliability: 25 years

Degradation rate: 0.5%/year




DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

Total solar panels installed: 1,200,000

Total solar panel production capacity (projected)

Total solar panels projected by 2030: 2,500,000

Average costs of various electricity generation sources (coal, natural gas, solar, etc)

Average installation cost per panel: $3,000

Average cost per kWh from solar: $0.11/kWh

Percentages of various electricity generation sources (coal, natural gas, solar, etc)

Percentage of electricity from solar: 15%

Projected percentage by 2030: 30%

Average daily availability of electricity from the national grid (measured in hours)

Daily availability of solar energy: 8 hours

Number of residential solar panel installations

Number of residential solar panels: 500,000

Total number of solar farms (installed and projected)

Total number of solar farms: 400

Off-grid market demand for solar panels (current and projected)

Current Off-Grid Solar Panel Potential in Somalia:
- Currently, Somalia faces substantial energy access challenges, with over 70% of the population lacking any electricity connection.
- The majority of those with access rely on costly, privately owned diesel mini-grids, which serve around 30% of the population at some of the highest rates globally.
- In rural areas, where most of the population resides, charcoal and firewood are the primary energy sources, contributing to deforestation and CO_2 emissions.
- Despite these challenges, there is some traction in the off-grid solar market.
- Approximately 100000–150000 off-grid solar products are sold annually.
- Consumer awareness of off-grid solar is generally high, but issues persist, including the prevalence of low-quality products and difficulties in accessing financing.
- These factors limit the sector's potential and impact.

Projected Off-Grid Solar Potential in Somalia:

- Somalia's off-grid solar potential is significant.
- The Somali Electricity Access Project (SEAP) is a key initiative aimed at expanding access to electricity in targeted areas. SEAP plans to improve the quality of life for thousands of Somalis by increasing access to high-quality off-grid solar products.
- The project intends to reach at least 21500 households (approximately 113900 people) through enhanced consumer awareness, better financing options for solar entrepreneurs, and supportive policy measures.
- Additionally, recent tenders by the Ministry of Energy and Water Resources (MoEWR) for 46 off-grid solar-plus-storage projects in Mogadishu, totaling over 5 MWh, highlight the government's commitment to expanding solar energy capacity.
- These efforts are expected to address current energy access issues and support the growth of the off-grid solar market in Somalia.

On-grid market demand for solar panels (current and projected)

Current Demand:
Electricity Access Gap:
- Approximately 65% of people in Somalia lack access to electricity. This substantial energy access gap highlights a significant demand for solutions to improve electricity availability.
- Existing energy solutions often rely on costly and polluting diesel minigrid systems.
Current Market Dynamics:
- Many rural and underserved communities are dependent on diesel minigrids, which are expensive and environmentally harmful.
- There is a limited ability for these private Electricity Service Providers (ESPs) to scale up due to restricted access to finance.
Current Solar Market:

- The adoption of solar technology is relatively low compared to other regions. However, there are ongoing efforts to introduce and expand solar solutions through pilot projects and partnerships.
Projected Demand:
AMP Somalia Project Goals:
- The AMP Somalia project aims to significantly increase solar minigrid capacity by hybridizing existing diesel minigrids and integrating new solar technologies.
- Initial pilot projects are expected to provide electricity to around 66670 people, with a focus on women and rural communities.
- The long-term goal is to address the energy access gap and promote a transition from diesel to solar, with the potential to mitigate approximately 594000 tons of CO2-equivalent indirect emissions.

Average monthly income of workers in solar industry (labor cost)

A Solar Photovoltaic Installer in Somalia would earn approximately:
- Typical Annual Salary: $3323.16
- Lowest Average Salary: $1667.22
- Highest Average Salary: $5160.48

Population of the country

The current population of Somalia is 19104820.

Average overhead costs of solar panel production (with a brief breakdown)

Estimate for Factory Rent:
Monthly Average Warehouse Rental Cost:
- Warehouse rents in Somalia are not available but one can contact:

- Hayaan Trading & Transportation Company.

Key Components of Administrative Costs:

Salaries and Wages:

- A Solar Photovoltaic Installer in Somalia would earn approximately:
- Typical Annual Salary: $3323.16
- Lowest Average Salary: $1667.22
- Highest Average Salary: $5160.48

Monthly Rents for Office Space:

- Not available
- But one can contact Sultaan Business Park.

A summary of the energy infrastructure

Electricity Generation:

- Diesel Generators: Most of Somalia's electricity comes from diesel generators, which are costly and environmentally harmful.
- Absence of National Power Grid: Somalia lacks a national power grid, which hinders the development of a unified electricity network.
- High Electricity Costs: The country faces some of the highest electricity prices in Africa.
- Lack of Legal and Regulatory Framework: There is no established legal and regulatory framework governing the energy sector.

Transmission & Distribution:

- Electricity in Somalia is primarily provided by private electricity service providers (ESPs) funded by private investors, often from the Somali diaspora.

Some of the government regulations surrounding solar panel production

Currently there are no regulations for solar panel production but;

- In Somalia, the development of solar energy, particularly off-grid solar solutions, is a key focus due to the country's largely rural and nomadic population. The government, supported by organizations like the Africa Clean Energy (ACE) Programme, is working on building a supportive regulatory and policy framework for solar energy.

Government initiatives in solar panel production (includes investments and subsidies)

The Somali government, supported by international partners, has launched several initiatives to boost solar energy production and access across the country. Key efforts include:
1. Somalia Electricity Access Project (SEAP): Funded by the World Bank with $7.2 million, this project aims to increase electricity access in off-grid rural and peri-urban areas by distributing solar home systems (SHS).
2. Somalia Electricity Recovery Project: With $150 million in funding from the World Bank, this project aims to speed up access to clean and affordable energy. A significant portion, around $40 million, is dedicated to rural electrification through solar mini-grids and stand-alone solar systems.

Notable solar projects in the country (installed and projected)

Current Projects:
Project Name: Kube Energy Solar Hybrid Project in Baidoa
- Capacity: 2.8 MW of solar PV and 4.8 MWh of battery storage
- Location: Baidoa, Somalia
- Details: Developed by Kube Energy in collaboration with the South West State of Somalia and CrossBoundary Energy.
Project Name: Mogadishu Solar Power Plant

- Location: On the edge of Mogadishu, Somalia
- Details: Established to lower electricity costs, replacing diesel-powered generators.

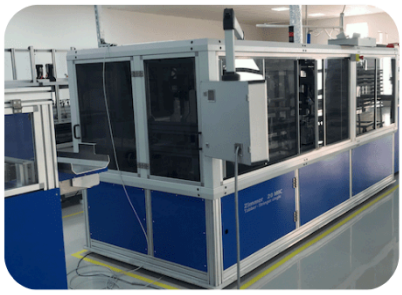
Project Name: Puntland Solar Plant
- Location: Bosaso, the commercial capital of the state of Puntland, Somalia
- Capacity: 3.5 MW.

Some of the notable solar companies (plus brief details on what they do)

SECCCO (Somali Energy Company for Climate Change and Consultancy Organization)
- Location: Garowe, Puntland, Somalia
- Services: Renewable Energy Projects, Research and Consultation, Training Center.

Somali Solar®
- Location: HQ – Wadajir, Garowe, Somalia
- Services: Solar Power Purchase Agreements (PPA), Consultation and Installation.

Tamarso
- Location: Bakaro Market, Mogadishu, Somalia
- Services: Solar System Design, Energy Management.



ABOUT THIS REPORT

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All market data, analysis, and conclusions follow JvG's internal consulting standards and international PV market research practices.

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For a detailed list of references and additional information, please visit our website with the current report at:
https://www.pvknowhow.com/solar-report/somalia/

About J.v.G. Technology GmbH

J.v.G. Technology GmbH is a European engineering and advisory specialist for solar production lines and manufacturing equipment, supporting investors and operators with market, location and production-focused decision frameworks.
www.jvg-thoma.com

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