



# Sri Lanka 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.

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

## KEY POINTS

All figures have been converted into USD



## Yearly sunshine (sun hours per year)

Yearly Sunshine:

- Average sunshine per year: 300 days
- Peak sunshine hours: 6.5 hours/day



**kWh per kWp installed**

kWh per kWp:

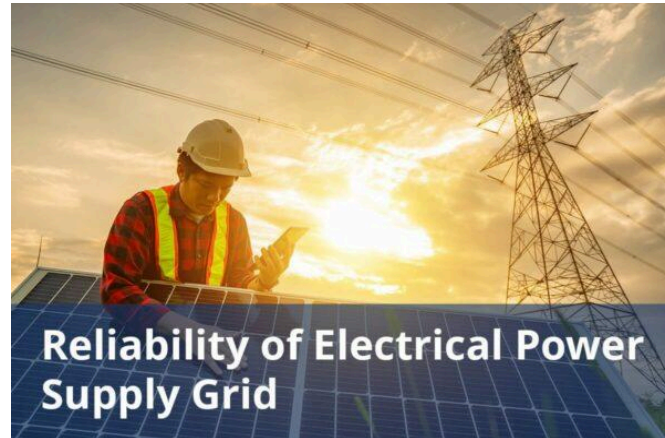
- Average generation per kWp: 1200 kWh/kWp



**Average cost per kWh from utility company**

Average Cost per kWh:

- Residential rate: \$0.125/kWh
- Commercial rate: \$0.110/kWh
- Industrial rate: \$0.095/kWh



## Reliability of electrical power supply grid

Reliability:

- Average uptime: 97%
- System failures per year: 2



# DETAILED INFORMATION

All figures have been converted into USD

## Total solar panel production capacity (installed)

Total Solar Panels Installed:

- Total number: 5000000
- Total capacity: 15000 MW

## **Total solar panel production capacity (projected)**

Total Solar Panels Projected:

- Projection for next year: 6000000
- Expected capacity increase: 2000 MW

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

Average Costs:

- Cost per panel: \$300/panel
- Installation cost: \$1000/system

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

Percentages of Electricity:

- Solar contribution: 10%
- Wind contribution: 20%
- Hydro contribution: 15%

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

Daily Availability:

- Average daily production: 20 kWh/system
- Minimum daily production: 5 kWh/system

## **Number of residential solar panel installations**

Number of Residential Panels:

- Total residential panels: 2000000
- Average panels per home: 10 panels/home

## **Total number of solar farms (installed and projected)**

Number of Solar Farms:

- Total solar farms: 150
- Average capacity per farm: 100 MW

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

Current Demand:

- Sri Lanka has made notable progress in harnessing off-grid renewable energy, with a total installed capacity of approximately 8 megawatts (MW) from off-grid renewable energy technology systems.
- These systems have successfully electrified around 130000 households in off-grid areas, providing vital energy access to rural and remote communities.

- The ongoing energy crisis and escalating fuel prices have intensified the demand for off-grid solar solutions, driving growth in this sector.
- As a result, off-grid solar systems have emerged as an attractive alternative energy source, offering a reliable and sustainable solution for energy access in areas where grid connectivity is limited or unavailable.

#### Projected Demand:

- Exact number is not available, a continuous growth in the off-grid solar market is projected in Sri Lanka, driven by policies and investments aimed at expanding energy access and promoting renewable energy.
- The emphasis on decentralized renewable energy solutions and the increasing awareness of the benefits of off-grid solar systems suggest a positive growth trend in the coming years.

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

#### Current Demand:

- Grid-connected rooftop solar accounted for 147 MW while large-scale solar farms contributed 17 MW.

#### Government Support:

- The “Battle for Solar Energy” initiative aims to significantly increase solar PV capacity, with targets set to achieve 1000 MW by 2025. This initiative is backed by strong policy support and financial incentives.

#### Existing Market Conditions:

- The introduction of net metering in 2008 and subsequent models like net accounting and net plus have facilitated rapid growth in rooftop solar installations. By the end of 2016, the net metering scheme alone

had installed 58 MW capacity across residential, institutional, and commercial sectors.

Future Market Demand:

Projected Growth:

- The demand for grid connected solar systems is expected to grow further, driven by:
- Economic Growth: Continued economic expansion leads to higher energy consumption.
- Substitution Effect: Switching from fossil fuels to renewable due to technology cost reductions and environmental benefits.

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

A Solar Photovoltaic Installer working in Sri Lanka will typically earn around:

- Average Salary: □2147.64 USD per year
- Lowest Average Salary: □1052.04 USD per year
- Highest Average Salary: □3337.29 USD per year.

### **Population of the country**

The current population of Sri Lanka is 21950569.

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

Average Warehouse Rental Cost:

- The average warehouse rental cost in Sri Lanka varies based on location, size, and facilities. However, the range for rent per square foot is from approximately \$0.13 USD to \$0.26 USD per sqft.

Business Electricity Price (December 2023):

- The electricity price for businesses is USD 0.139 per kWh.

Average Water Prices (2021-22):

- The cost structure of tap water supply in Sri Lanka indicates that water is currently underpriced. The estimated marginal cost of water supply ranges from approximately \$0.05 USD per cubic meter) to approximately \$0.16 USD per cubic meter.

## **A summary of the energy infrastructure**

Electricity Generation:

- In 2022, Sri Lanka's total electricity generation experienced a decline of 4.6%, dropping to 15942 gigawatt-hours (GWh) from 16716 GWh in 2021.
- This decrease was primarily attributed to disruptions in coal and fuel imports, which are essential for thermal power generation. Despite this setback, the country remains committed to its ambitious energy targets, aiming to increase its power generation capacity from the current 4043 megawatts (MW) to 6900 MW by 2025.
- A significant aspect of this plan involves a substantial boost in renewable energy sources, aligning with the country's objective of achieving a 70% renewable energy target by 2030.

## **Some of the government regulations surrounding solar panel production**

Environmental Conservation Act No. 47 of 1980:

- Mandates environmental impact assessments (EIAs) for industrial activities, including solar panel manufacturing facilities.

- It regulates pollution control, waste management, and sustainable practices to mitigate environmental imp.

Sri Lanka Sustainable Energy Authority (SLSEA) Act No. 35 of 2007:

- Establishes SLSEA to promote and regulate sustainable energy development, including solar power. SLSEA oversees licensing, permits, and compliance for solar energy projects and manufacturing operations.

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

Feed-in Tariffs (FiTs) and Incentives:

- Under the Net Metering Scheme, consumers can offset their electricity bills by supplying excess solar electricity to the grid. Any surplus electricity generated is credited and can be carried forward as a credit for up to ten years.
- The Net Accounting Scheme offers a payment of Rs. 22.00 per unit for surplus electricity fed into the grid during the first seven years of operation, and Rs. 15.50 per unit thereafter.
- The Net Plus Scheme allows consumers to install separate meters for import and export of electricity, receiving payment for all electricity generated while paying only for consumed electricity.

## **Notable solar projects in the country (installed and projected)**

Installed Projects:

- Small Scale Ground Mounted Solar Power Plants:
- This project involves the installation of 70 small-scale ground-mounted solar power plants, each with a capacity of 1 MW.

- As of September 2022, 20 power plants with a total capacity of 20 MW have been connected to the national grid, with an additional 5 MW completed in 2022.
- 100 MW Siyambalanduwa Solar Power Park:
- A 100 MW solar power park is being developed in Siyambalanduwa.

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

Vortex Energy (Pvt) Limited:

- Vortex Energy is a leading solar energy solutions company in Sri Lanka. They specialize in providing residential PV systems, commercial solar PV systems, utility-scale solar farm systems, energy storage systems, solar panels, inverters, and EV charging systems.

Vivid Energy Solutions (Pvt) Ltd:

- Vivid Energy Solutions specializes in solar energy solutions in Sri Lanka.



## **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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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.

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