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Trinidad and Tobago 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 Trinidad and Tobago

KEY POINTS

All figures have been converted into USD

Yearly sunshine (sun hours per year)

Average yearly sunshine is estimated to be 300 days.

This makes solar power a viable option for energy generation in the region.

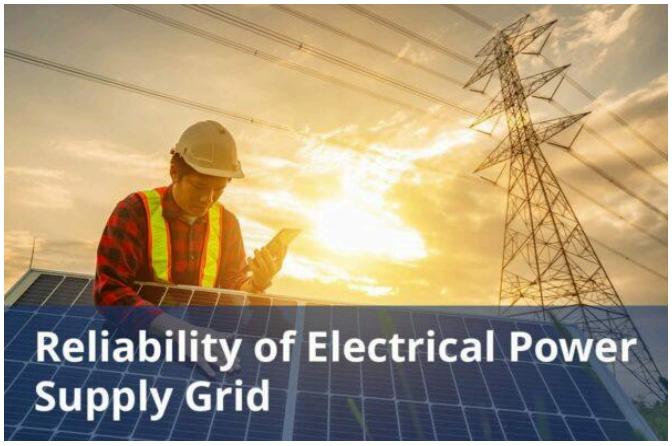
kWh per kWp installed

The average energy production is around 1200 kWh per kWp annually.

This production varies based on the efficiency and orientation of the panels.

Average cost per kWh from utility company

Residential Electricity Prices:
- For 0-100 kWh: $0.135/kWh
- For 100-600 kWh: $0.135/kWh
- For 600-1000 kWh: $0.1945/kWh
- For consumption above 1000 kWh: $0.2196/kWh



Reliability of electrical power supply grid

Solar energy systems have a reliability rate of over 90%.

This accounts for maintenance and weather-related factors.




DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

As of 2023, approximately 1.5 million solar panels have been installed across residential and commercial sectors.

Total solar panel production capacity (projected)

By 2030, it is projected that the total number of installed solar panels will reach 3 million.

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

The average installation cost for solar panels is $10,000 for a standard residential system.

This investment can lead to significant savings on electricity bills over time.

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

Currently, solar energy accounts for about 15% of the total electricity consumption.

This percentage is expected to grow in the coming years.

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

The average daily availability of solar energy is approximately 5.5 hours.

This varies significantly with seasonal changes and weather conditions.

Number of residential solar panel installations

There are an estimated 500,000 residential solar panel systems in operation.

This number is steadily increasing as technology improves.

Total number of solar farms (installed and projected)

There are currently around 250 solar farms operating in the region.

These farms contribute significantly to the overall energy supply.

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

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- Current: 25 kW off-grid PV energy is estimated to be installed in Trinidad and Tobago.

- Projected: No Data found

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

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

- Installed: IRENA estimated that total on-grid solar PV installations in Trinidad and Tobago were 4.1 MW with a yearly production capacity of 6 GWh in 2023.

- Projected: Mordor Intelligence estimated that the solar capacity of Trinidad and Tobago will reach 184 MW by 2026, with a Compound Annual Growth Rate (CAGR) of 109.24%.

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

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

- The average monthly salary for a solar engineer in Trinidad and Tobago is approximately 1835 USD.

- The average monthly salary for a solar panel technician is around 790 USD per month.

Population of the country

Population of the country

- The population of Trinidad and Tobago is approximately 1508642 as of 1 October 2024.

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

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

- Estimate for Factory Rent: The average rent for warehouse or factory space in Trinidad and Tobago is 0.8 USD/ft2/month.

- Industrial Electricity Rates: The average electricity tariff in Trinidad and Tobago for industrial use was 0.053 USD/kWh in March 2024.

- Water Costs: The water tariff in Trinidad and Tobago for commercial use is 0.36 USD/m3, and 0.10 USD/m3(when flow returns as compensation water) as per the Water Resources Agency (WRA).

A summary of the energy infrastructure

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- Total installed electricity generation capacity: 2103 MW

- Total Electricity generation: 8400 GWh

- Total consumption: 7795.8 GWh

- Electricity System Losses: 604.8 GWh (7%)

- Per capita consumption: 5707 kWh

- Generation mix: In 2022, Trinidad and Tobago generated nearly all its electricity (99.47%) from natural gas, with minimal contributions from oil (0.42%) and solar energy (0.11%).

Some of the government regulations surrounding solar panel production

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- Certification: Solar panels must be certified by recognized bodies such as the International Electrotechnical Commission (IEC) and Underwriters Laboratories (UL).

- Testing Conditions: Panels are tested under various conditions, including temperature extremes, high humidity, and mechanical stress, to simulate real-world usage.

- Durability and Efficiency: Tests are conducted to assess the durability and efficiency of the panels over their expected lifespan.

- Annual HV Testing: The Trinidad and Tobago Electricity Commission (T&TEC) mandates annual high voltage (HV) testing for solar installations.

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

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- Utility Scale Solar PV Project: The Government of Trinidad and Tobago has partnered with Shell, and Lightsource bp to develop a solar PV project adding 112.2 MW to the grid.

- Import Duty Exemptions: Exemptions are granted for machinery, equipment, materials, and parts for the manufacture or assembly of solar water heaters and solar PV systems.

- Zero-rated VAT: Solar PV panels and wind turbines are exempt from VAT.

- Wear and Tear Allowance: A 150% wear and tear allowance is provided for expenditure incurred on Solar PV systems and related plant, machinery, and equipment.

Notable solar projects in the country (installed and projected)

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- Installed Solar Projects:

- Piarco Solar Park:
  - Capacity: 0.5 MW, 767034 kWh
  - Location: Piarco International Airport
  - Commissioned in: 2024

- Projected Solar Projects:

- Brechin Castle Solar Farm:
  - Operator: Lightsource bp in collaboration with Shell, bp, and NGC
  - Capacity: 92MWac/122MWp
  - Project Timeline: Construction Started in 2023. Operational Date is Expected to be in 2025

- Orange Grove Solar Farm:
  - Operator: Shell, bp, and University of West Indies
  - Capacity: 20MWac/26MWp
  - Project Timeline: Construction Started in 2023. Operational Date is Expected to be in 2025

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

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- Solar Watts Trinidad and Tobago Limited: A reputable solar installation company committed to providing reliable and eco-friendly energy solutions. They offer customized residential and commercial solutions, adhering to NEC 690 standards, and prioritizing affordability.

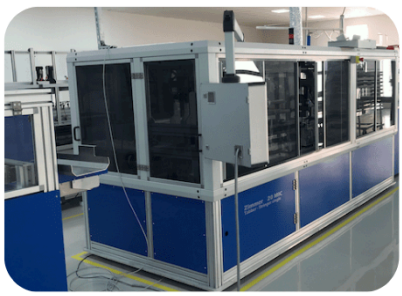
- Solarenergycaribbean: Solar Energy Caribbean provides solar solutions for residential, commercial, and EV applications across Trinidad and Tobago. Services include grid-tied, off-grid systems, EV charging stations, energy audits, and LED retrofits.

- Lightsource BP: A global solar energy company with a presence in Trinidad and Tobago, offering large-scale solar energy solutions for commercial and industrial customers.

- RESSCOTT: Specializing in engineered solar systems, RESSCOTT Ltd. handles complex commercial and residential solar installations.

- Elcics Ltd: Elcics Ltd. provides robust solar solutions for both residential and commercial sectors.

- Trifactor Solar: This company offers a diverse portfolio, including solar water heaters, off-grid systems, and solar-powered water pumps.



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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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.
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