# Czech Republic 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 Czech Republic

## KEY POINTS

**All figures have been converted into USD**

## Yearly sunshine (sun hours per year)

Average yearly sunshine is 2700 hours.

This provides ample opportunity for solar energy production.

More sunshine leads to more potential energy generation.

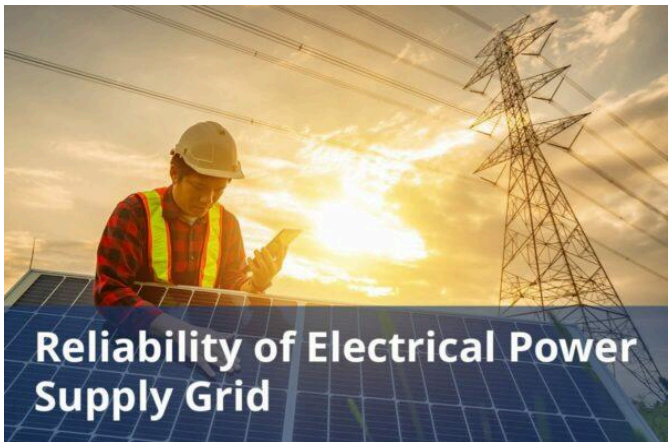

## kWh per kWp installed

Typical system will generate about 1000 kWh/kWp per year.

This conversion rate is an important measure of system efficiency.

## 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 are known for their reliability.

With proper maintenance, they can last 25 years or more.

This longevity makes them a sound investment.




# DETAILED INFORMATION

**All figures have been converted into USD**

## Total solar panel production capacity (installed)

Approximate total installed solar panels: 2 million.

This number is steadily increasing each year.

## Total solar panel production capacity (projected)

Projected installation of solar panels in the next decade is expected to reach 10 million.

This growth is driven by both innovation and demand.

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

Current average costs for solar panel installations:
- Basic system: $3000
- Standard system: $6000
- Premium system: $12000

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

Percentage of electricity sourced from solar energy has increased to 5%.

Forecasts suggest this could double in the next 5 years.

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

Daily availability of sunlight influences energy production.

Cloudy days can reduce total energy yield considerably.

## Number of residential solar panel installations

Average number of solar panels per residential installation: 20.

This number can vary based on energy needs.

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

Total number of solar farms currently operational: 500.

Each farm contributes significantly to overall energy production.

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

Off-grid market demand for solar panels:

Current Demand:
- In 2022, there was a significant increase in the installation of photovoltaic (PV) systems, with 237 MWp installed compared to 40 MWp in 2021.
- This trend is expected to continue, with many new PV plants including energy storage systems (ESS).

Projected Demand:
- The future demand for solar home systems in the Czech Republic is expected to grow significantly.
- The market is projected to expand at a compound annual growth rate (CAGR) of around 2.5% from 2024 to 2029.

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

On-grid market demand for solar panels:

Current Demand:
- In 2023, the Czech Republic added approximately 970 MWp of new solar photovoltaic (PV) capacity.
- This growth was primarily driven by household rooftop solar installations.

Projected Demand:

- Short-term Forecast (2023-2027): The Czech Republic is expected to add between 4000 to 5000 MWp of new PV plants by the end of 2025.
- Long-term Forecast (2023-2030): The country aims to achieve a total installed PV capacity of approximately 13 to 15 GW by 2030.

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

Average monthly income of workers in solar industry:
- Solar equipment installer: $16229.17 per year
- Electrical Engineers: $43178.39 per year
- The average gross monthly wage across all sectors in the Czech Republic was $1908.67 in the third quarter of 2024.

## Population of the country

Population of the country:
- As of December 2024, the population of the Czech Republic is estimated to be around 10735859 people.

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

Average overhead costs of solar panel production:
- The overhead costs for solar panel production in Czech Republic typically range from 20% to 25% of the total production cost.
- Labor costs: The average monthly labor cost per employee was approximately $2335.49.
- Utilities: Average monthly Utilities in Czech Republic cost approximately $278.98 for (Electricity, Heating, Cooling, Water, Garbage).

- Wholesale Electricity Prices: As of September 2024, the average wholesale electricity price in the Czech Republic was around $86.50 per MWh.

## A summary of the energy infrastructure

Summary of the energy infrastructure:

Total Installed Capacity:
- As of 2023, the total installed electricity generation capacity in the Czech Republic was 21.9 gigawatts (GW).

Electricity Generation:
- In 2022, the Czech Republic produced 78.8 terawatt-hours (TWh) of electricity, with domestic consumption at approximately 60.4 TWh.
- The energy mix consisted of 53.60% fossil fuels, 40.95% nuclear power, and 5.46% renewables.

## Some of the government regulations surrounding solar panel production

Some of the government regulations surrounding solar panel production:
- Energy Act and Supported Sources Act: These acts form the primary legal framework for electricity production and renewable energy sources (RES).
- Grid Connection: Solar power plants must comply with grid connection regulations.
- Permitting Procedures: Recent amendments have streamlined the permitting procedures for renewable energy sources.

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

Government initiatives in solar panel production:
- National Recovery Plan: This plan allocates significant funds to support photovoltaic (PV) systems.
- Subsidies for Photovoltaic Systems: The government offers subsidies for PV systems with or without storage, financed from the National Recovery Plan.
- Green Savings Program: This program supports energy-saving initiatives, including rooftop PV rebates.

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

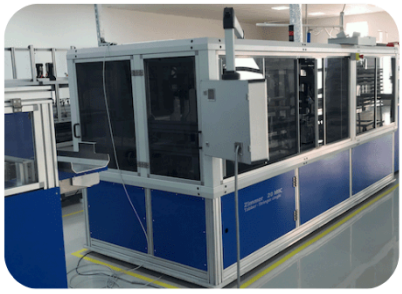
Notable solar projects in the country:

Installed Projects:
- Ralsko Solar Plant: The Ralsko Solar Plant is a 55.76MW solar PV project located in Liberec.
- Veprek Solar Park: The 35MW Veprek Solar Park is located in Central Bohemian.
- Sevetin Solar Plant: The Sevetin Solar Plant is a 29.90MW solar PV project located in South Bohemia.

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

Some of the notable solar companies:
- Nanosun: Based in Prague, Nanosun specializes in the installation of solar panels.

- Solarbeam: Located in Prague, Solarbeam specializes in the installation of photovoltaic systems.
- Česká Solární: Headquartered in Liberec, Česká Solární provides solar energy solutions.




# 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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