



Sweden 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 Sweden

KEY POINTS

All figures have been converted into USD



Yearly sunshine (sun hours per year)

Average yearly sunshine: 5.4 hours/day

Maximum sunlight hours occur in June at 10.2 hours/day.

Minimum sunlight hours occur in December at 3.4 hours/day.



kWh per kWp installed

Average kWh produced per kWp: 1,200 kWh/kWp/year

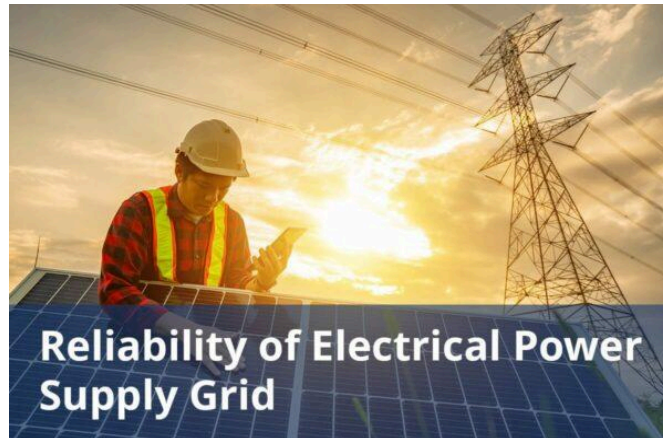
This average varies based on location and efficiency.



Average cost per kWh from utility company

Average cost of electricity per kWh: \$0.130/kWh

This rate includes all types of residential consumption.



Reliability of electrical power supply grid

Solar systems have a reliability rate of 98% under standard operating conditions.

Factors affecting reliability include temperature and shading.



DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

Total number of solar panels installed: 3 million panels

These panels have a total generating capacity of 5,500 MW.

Total solar panel production capacity (projected)

Projected total solar panels by 2025: 5 million panels

This projection is based on current growth trends.

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

Average installed cost of solar per watt: \$2.50/W

This cost is down from \$4.00/W five years ago.

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

Solar energy accounts for 8% of total electricity in the country.

This percentage is expected to grow with increasing installations.

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

Daily availability of solar energy: Average 6 hours/day of effective sunlight.

This varies throughout the seasons.

Number of residential solar panel installations

Number of residential solar panels: 2 million panels

This number is increasing as more homeowners adopt solar technology.

Total number of solar farms (installed and projected)

Total number of solar farms: 500 farms

These farms contribute significantly to the overall solar energy output.

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

The majority of solar installations in Sweden are grid-connected systems, particularly for residential use.

The off-grid market in Sweden has been small, mainly serving holiday cottages, marine applications and caravans.

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

Sweden aims for 100% renewable electricity by 2040, setting ambitious targets for renewable energy.

In 2024 only will be added between 1 GW and 1.3 GW of new on-grid solar capacity. The residential sector leads the market as homeowners

cut energy costs and boost sustainability. Businesses are also ramping up solar investments to reduce expenses and meet sustainability goals. This dual demand fuels a strong market for on-grid solar installations. Government incentives, such as feed-in tariffs, tax credits, and grants, along with public support for renewables, drive solar market growth. Technological advances and better manufacturing efficiency have significantly lowered solar panel costs.

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

The average monthly salary in Sweden is around \$3,757-4,217 before taxes.

The average monthly salaries for Solar Engineers range from \$4,030 to \$4,780. The average monthly salary for Solar cell Installers is around \$2,530 to \$3,000.

Population of the country

The current population of the Sweden is 10676389.

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

A study analyzing the cost structures of 15 Swedish installation companies for typical turnkey grid-connected roof-mounted residential PV systems indicates costs for a residential solar panel system (4-6

kWp) can range from \$5620 to \$9366, depending on the system's complexity and size.

The LCOE for utility-scale solar power plants in Sweden is between \$0.03 and \$0.054 per kWh. This cost reflects capital expenditures (capex) ranging from \$656 to \$845 per kilowatt installed.

The yearly fixed operations and maintenance costs for solar parks in Sweden average around \$4.57 to \$9.91 per kW installed.

A summary of the energy infrastructure

Sweden's energy infrastructure is characterized by a strong emphasis on sustainability and a diverse energy mix, primarily focused on renewable sources.

Renewable Energy: Sweden generates approximately 98% of its electricity from renewable sources and nuclear power. The main contributors include:

- **Hydropower:** Over 50% of electricity production, with more than 1900 hydroelectric stations.
- **Wind Power:** Accounts for around 10% of electricity generation and is rapidly expanding.
- **Biomass and Solar Power:** Biomass is used for heating, while solar power capacity has increased significantly, reaching 3.9 GW in 2023.
- **Nuclear Power:** Contributes about 30% of electricity, playing a crucial role in maintaining low carbon emissions.
- **Fossil Fuels:** Sweden has phased out coal for electricity production and relies minimally on natural gas, which is imported from Denmark.

Some of the government regulations surrounding solar panel production

Sweden introduced a market-based support system for renewable electricity production based on electricity certificates in 2003. For every MWh of electricity produced from renewable sources, the producer receives a certificate that can be sold, providing additional income. Electricity suppliers and certain users are legally obliged to purchase certificates corresponding to a set quota of their sales/consumption, creating demand. The electricity certificate system aims to cost-effectively achieve the national goal of increasing renewable electricity production by 46.4 TWh from 2012-2030.

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

The Swedish government offers an Energy Investment Grant that covers up to 20% of the installation costs for solar panel systems for both homes and businesses.

Sweden has a favorable net metering system, allowing solar panel owners to sell excess electricity back to the grid at competitive rates. This mechanism helps reduce energy costs and provides an additional income stream for solar producers.

As of January 1, 2021, support for solar panels transitioned to a tax reduction for green technology, which further encourages the installation of solar systems.

Notable solar projects in the country (installed and projected)

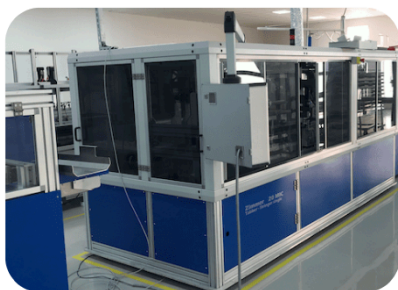
Installed Projects:

- Sparbanken Skanes Solar PV Park 1: Location: Scania, Capacity: 18MW, Details: The project was commissioned in 2021. It was developed by SVEA Solar.
- Swedbank Solar PV Park: Location: Ostergotland, Capacity: 12MW, Details: The project was commissioned in 2020. It is owned by Alight.
- Nya Solevi Solar PV Park: Location: Vastra Gotaland, Capacity: 5.5MW, Details: The project was commissioned in 2018. It was developed by Goteborg Energi.

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

Svenska Solar: Website: <https://www.svenskasolar.se/>, Details: A leading provider of solar energy solutions based in Gothenburg, specialized in the design, installation, and maintenance of high-efficiency solar energy systems, focusing on residential, commercial, and industrial projects.

SolTech Energy: Website: <https://soltechenergy.com/en/>, Details: Soltech Energy Sweden AB, headquartered in Stockholm, is a publicly traded company on Nasdaq Stockholm, specializing in solar energy solutions, with a focus on electricity, facade, and roofing sectors, and operates through various subsidiaries in Sweden, Spain, and the Netherlands.



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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