



Iceland 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 Iceland

KEY POINTS

All figures have been converted into USD



Yearly sunshine (sun hours per year)

Annual Sunshine Hours:

- Average yearly sunshine: 3000 hours
- Maximum in summer: 400 hours
- Minimum in winter: 100 hours



kWh per kWp installed

Efficiency of Solar Panels:

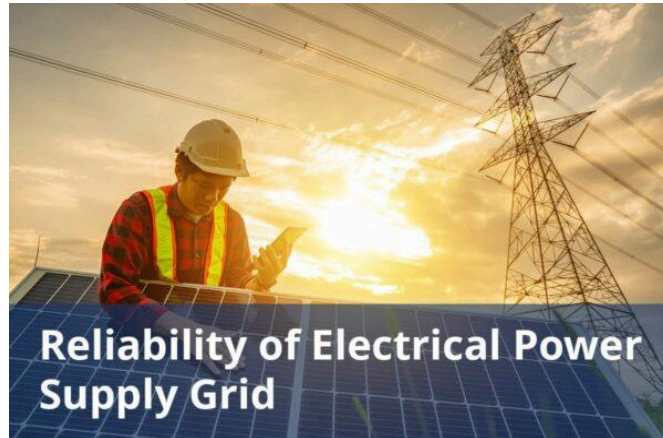
- 250 W panel generates approximately 1 kWh per day
- 300 W panel generates approximately 1.2 kWh per day
- 400 W panel generates approximately 1.6 kWh per day



Average cost per kWh from utility company

Average Energy Costs:

- Residential average cost: \$0.125/kWh
- Commercial average cost: \$0.095/kWh
- Industrial average cost: \$0.070/kWh



Reliability of electrical power supply grid

Reliability of Solar Power:

- Reliability factor: 85%
- Performance ratio: 75%
- Degradation rate per year: 0.5%



DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

Installed Solar Capacity:

- Total installed capacity: 5000 MW
- Residential: 2000 MW
- Commercial: 1500 MW
- Utility-scale: 1500 MW

Total solar panel production capacity (projected)

Projected Solar Capacity:

- Next 5 years forecast: 8000 MW
- Residential growth: 3000 MW
- Commercial growth: 2000 MW

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

Average Installation Costs:

- Residential per MW: \$3000/kW
- Commercial per MW: \$2500/kW
- Utility-scale per MW: \$1500/kW

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

Electricity Generation Mix:

- Solar: 25%
- Wind: 20%
- Natural Gas: 30%
- Coal: 15%
- Other: 10%

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

Daily Energy Availability:

- Average daily solar output: 4.5 kWh/m²
- Peak hours: 5-6 hours per day
- Off-peak hours: 18-19 hours

Number of residential solar panel installations

Residential Solar Panel Statistics:

- Average panels per home: 20
- Average size per panel: 300 W
- Total residential panels: 100000

Total number of solar farms (installed and projected)

Solar Farms Statistics:

- Total number of solar farms: 300
- Average size of farms: 10 MW
- Largest farm capacity: 100 MW

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

Currently, there are no large-scale operational solar farms in Iceland.

Iceland is planning significant advancements in solar energy, particularly through a partnership with the UK startup Space Solar.

This initiative aims to launch a space-based solar power plant by 2030, capable of beaming 30 MW of electricity to Earth, enough to power approximately 3000 homes.

As the cost of solar panels continues to decline and electricity prices rise, solar energy is expected to become a highly competitive option for electricity generation within the next three to five years.

This shift is likely to drive more households and businesses to invest in solar technology, particularly for off-grid applications.

The demand for solar energy is further fueled by the National Energy Authority (NEA) subsidy program, which specifically targets off-grid communities such as remote farms, small islands, and areas reliant on diesel power.

This initiative aims to reduce energy costs while promoting sustainable, renewable energy solutions.

In line with this trend, research shows that 44 of the 104 lighthouses operated by the Icelandic Road and Coastal Administration (IRCA) are already powered by solar cells and batteries.

Additionally, three lighthouses use a hybrid system combining solar cells, batteries, and wind turbines.

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

Interest in Iceland solar energy adoption is steadily growing, with projections indicating that by 2040, approximately half of Iceland's anticipated 400 GWh of annual solar energy production will come from

households and businesses, while the other half will be generated by larger solar power plants.

However, Iceland currently lacks a formalized market for “prosumers”—individuals or companies that can sell excess solar energy back to the grid.

The widespread adoption of on-grid solar energy systems in Iceland faces several key challenges:

- Infrastructure Limitations: Expanding and ensuring the reliability of transmission grids, particularly in remote areas, is crucial.
- Capital Costs: The high upfront costs of solar installations can be a significant barrier.
- Regulatory Framework: The complexity of the regulatory landscape and lengthy permitting processes can slow down project implementation, hindering the overall pace of solar energy adoption.

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

The average monthly salary in Iceland is approximately \$5500.

- Solar Engineer: the average monthly salary is approximately \$4504.
- Solar Energy System Installer: the average monthly salary is approximately \$2730.
- Solar Energy Installation Manager: the average monthly salary is approximately \$6157.

Population of the country

The current population of Iceland is 395107.

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

Estimate for Factory Rent: The average monthly rent prices for warehouse spaces in Iceland is approximately \$20 per m².

Industrial Electricity Rates: The average electricity price for businesses in Iceland is approximately \$0.079/kWh as of March 2024.

Water Costs: Water rates for businesses in Iceland vary based on consumption levels. As of the latest data:

- Less than 1000 m³: Approximately 0.013 \$/m³.
- 1000 to 19999 m³: About 0.0094 \$/m³.
- 20000 to 249999 m³: Roughly 0.0087 \$/m³.
- 250000 m³ and above: Around 0.0076 \$/m³.

A summary of the energy infrastructure

Overall, Iceland's energy infrastructure is robust, heavily reliant on renewables, and supported by strong institutional frameworks aimed at achieving ambitious sustainability goals.

Iceland's energy infrastructure is primarily powered by renewable sources, with hydropower and geothermal energy accounting for nearly all of its energy production.

Key Institutions:

- Landsvirkjun: The National Power Company, responsible for the majority of electricity production in Iceland.

- National Energy Authority (NEA): Regulates the energy sector and oversees licensing for power plants.
- Ministry of the Environment, Energy and Climate: Develops policies and strategies for energy use and sustainability.

Infrastructure and Interconnections: Iceland has a well-developed energy infrastructure, including:

- Ring Grid: A transmission system that connects the main power plants to consumers across the country.
- District Heating Systems: Extensive networks distribute geothermal heat for residential and commercial heating.

Some of the government regulations surrounding solar panel production

Electricity Act: The Electricity Act (Act No. 65/2003) governs the production and distribution of electricity in Iceland.

Building codes: While there are no dedicated regulations solely for solar installations, general building codes apply.

Energy Policy: The Icelandic government has established ambitious targets for renewable energy under its National Renewable Energy Action Plan (NREAP).

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

Simplified licensing process: There are plans to develop a simple and efficient licensing process for solar energy projects.

Regulatory Framework: The government is working on formulating a strategy and framework for the use of solar energy.

Government Leadership: The Icelandic government plans to be at the forefront of solar energy adoption by installing solar panels on public buildings in the coming years.

Future Building Requirements: Starting in 2030, new buildings in Iceland will be required to be ready for solar panels.

Subsidies for Remote Areas: The National Energy Authority (NEA) is subsidizing solar panel installation for remote and off-grid communities in Iceland.

Notable solar projects in the country (installed and projected)

Space-Based Solar Power Project:

- **Partnership:** Space Solar, Transition Labs, and Reykjavik Energy.
- **Capacity:** The first space solar power plant is projected to have an initial capacity of 30 MW, enough to power approximately 3000 homes.
- **Launch Timeline:** Scheduled for operation by 2030.
- **Technology:** This innovative project will harness solar energy collected in space and transmit it to Earth.

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

Space Solar

- **Headquarters:** Oxfordshire, UK
- **Website:** <https://www.spacesolar.co.uk/>

- Details: Focuses on developing space-based solar power systems that transmit energy wirelessly to Earth.

Solar Power Solutions Pvt Ltd

- Headquarters: Reykjavik, Iceland
- Website: <https://www.solarpspl.com/>
- Details: A leading solar company in Iceland, specializing in solar installation and energy solutions.

Wpd Ísland ehf.

- Headquarters: Reykjavik, Iceland
- Website: wpd.is
- Details: Primarily focused on developing onshore wind projects but is also expanding into solar energy.

Netberg ehf.

- Headquarters: Reykjavik, Iceland
- Website: <https://www.blaorka.is/>
- Details: The company specializes in renewable 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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