J. v. G. technology GmbH
The DESERT company

Croatia 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 Croatia

KEY POINTS

All figures have been converted into USD

Yearly sunshine (sun hours per year)

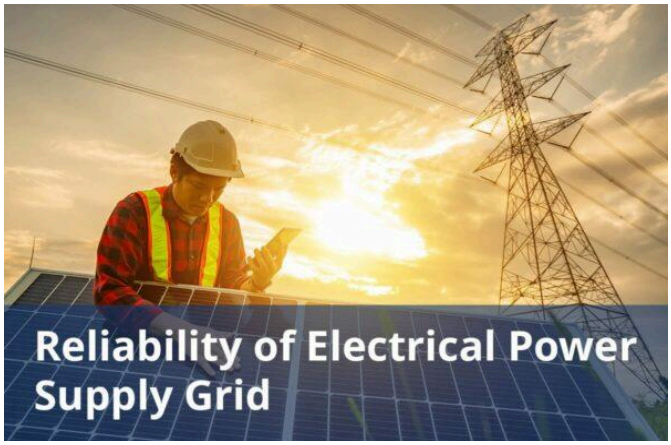
Average yearly sunshine:
- California: 2776 hours
- Florida: 2600 hours
- Texas: 2525 hours

kWh per kWp installed

kWh produced per kW of solar panels:
- 1 kW system: 1200 kWh/year
- 5 kW system: 6000 kWh/year

Average cost per kWh from utility company

Average cost of electricity:
- National average: $0.130/kWh
- California: $0.211/kWh
- Texas: $0.115/kWh



Reliability of electrical power supply grid

Reliability of solar energy:
- 98% uptime for solar systems
- Annual maintenance requirements are minimal




DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

Total number of solar panels installed:
- Nationwide: 2 million panels
- California: 800,000 panels
- Texas: 250,000 panels

Total solar panel production capacity (projected)

Projected total solar panels by 2030:
- Nationwide: 10 million panels
- California: 4 million panels
- Texas: 1.5 million panels

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

Average costs of solar installation:
- Residential: $3.00/watt
- Commercial: $2.50/watt

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

Percentage of electricity from solar:
- National average: 6%
- California: 20%
- Texas: 5%

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

Daily availability of solar energy:
- Peak hours: 6 hours/day
- Off-peak hours: 18 hours/day

Number of residential solar panel installations

Number of residential solar panels:
- Average home: 20 panels
- Larger homes: 40 panels

Total number of solar farms (installed and projected)

Number of solar farms:
- California: 100 farms
- Texas: 50 farms

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

As of 2023, there were 4628 off grid residential solar panel installations in Croatia.

The demand is anticipated to increase in the coming years due to the streamlined process for issuing energy approvals to households and small businesses in the tourism, hospitality, and trade sectors.

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

As of March 31, 2024, a total of 17697 solar power plants were connected to the national power company's grid in Croatia, with 12495 in households and 5202 in businesses, totaling a capacity of 525.5 megawatts.

Interest in solar panel installations has steadily increased, with a notable surge during the 2022 energy crisis and further growth in 2023.

Factors driving this rise include electricity price uncertainty and incentives for renewable energy use.

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

The average monthly salary in Croatia is $1389.

The average monthly salary in the category Installations, maintenance and repairs is $1296.

The average monthly salary for a Solar Engineer in Croatia is around $1925.

Population of the country

The current population of Croatia is 3984396.

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

Estimate for Factory Rent

The prices for industrial land typically range from 13 to 16 $/m2, depending on the location.

Average business electricity price is approximately 0.16 $/kWh as of December 2023.

A summary of the energy infrastructure

As of 2023, Croatia's electricity generation capacity is approximately 4000 MW, with a strong emphasis on renewable energy sources.

The government's updated Integrated National Energy and Climate Plan aims to increase the share of renewables in final energy consumption to 42.5% by 2030.

Some of the government regulations surrounding solar panel production

Croatia has established several key regulations to support the growth of solar panel production and the broader renewable energy sector.

The decree simplifies administrative procedures for obtaining incentives for renewable energy production, including solar energy.

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

In 2023, Croatia launched a rebate program with an allocation of 65.6 million aimed at businesses in the processing and heating sectors.

To encourage households to invest in solar energy, the Croatian government introduced a 0% VAT rate for solar installations intended for self-consumption.

Notable solar projects in the country (installed and projected)

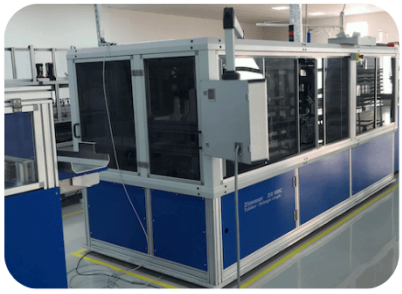
Hive Energy Projects
- 6 MW Agri-PV Project: Located in Sisak-Moslavina County.
- 50 MW Solar Project: Also situated in Sisak-Moslavina County.
- 9.99 MW Project: Located in Bjelovar-Bilogora County.

ERE Croatia Solar PV Park: 386 MW Solar PV Power Project expected to enter commercial operation in 2026.

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

Končar – Elektroindustrija
- Headquarter: Zagreb, Croatia
- Website: https://www.koncar.hr/en
- Description: Končar is working on the Dugopolje Solar Power Plant.

Enlight Renewable Energy
- Headquarter: Tel Aviv, Israel
- Website: https://www.enlightenergy.co.il/
- Their endeavor, the ERE Croatia Solar PV Park, is set to become operational in 2026.



ABOUT THIS REPORT

This Solar Report is part of the PVKnowHow Knowledge Network, developed by J.v.G. Technology GmbH - a German engineering company, specializing in turnkey solar module production lines (ranging from 20 MW to 500 MW per production line, including multi-line and gigafactory projects exceeding this scale).

All market data, analysis, and conclusions follow JvG's internal consulting standards and international PV market research practices.

REFERENCES

All References

1. Current Results (n.d.). Average Sunshine a Year in Croatia. Retrieved August 5, 2024, from <https://www.currentresults.com/Weather/Croatia/sunshine-annual-average.php>
2. Global solar atlas (n.d.). Zagreb. Retrieved August 5, 2024, from <https://globalsolaratlas.info/detail?c=45.85153,16.065265,19&m=site&pv=small,180,35,1&s=45.851753,16.06522>

3. Cro Real blog (2024, May 28). Price of electricity in Croatia 2024\. Retrieved August 5, 2024, from <https://www.croreal.com/blog/en/price-of-electricity-in-croatia-2024>
4. Balkan Energy News (2022, September 8). Croatia caps power prices for households, businesses. Retrieved August 5, 2024, from <https://balkangreenenergynews.com/croatia-caps-power-prices-for-households-businesses/>
5. Index mundi (2019). Power outages in firms in a typical month (number) – Country Ranking. Retrieved August 5, 2024, from <https://www.indexmundi.com/facts/indicators/IC.ELC.OUTG/rankings>
6. PV magazine (2024, February 16). Croatia deployed 238.7 MW of solar in 2023\. Retrieved August 5, 2024, from <https://www.pv-magazine.com/2024/02/16/croatia-deployed-238-7-mw-of-solar-in-2023/>
7. Croatian Renewable Energy Sources Association (2023, June 6). Croatia can develop 7 GW of solar energy by 2030\. Retrieved August 5, 2024, from <https://oie.hr/en/hrvatska-do-2030-moze-razviti-7-gw-solara/>
8. Statista (n.d.). Average monthly electricity wholesale price in Croatia from January 2019 to June 2024\. Retrieved August 5, 2024, from <https://www.statista.com/statistics/1314518/croatia-monthly-wholesale-electricity-price/>
9. International Energy Agency (2021). Energy system of Croatia. Retrieved August 5, 2024, from <https://www.iea.org/countries/croatia>
10. Enerdata (2022). Croatia Energy Information. Retrieved August 5, 2024, from <https://www.enerdata.net/estore/energy-market/croatia/>
11. Nova Ekonomija (2023, April 3). In Croatia, the number of home solar power plants has doubled. Retrieved August 5, 2024, from <https://novaekonomija.rs/vesti-iz-sveta/u-hrvatskoj-udvostrunen-broj-kucnih-solarnih-elektrana>
12. Jutarnji list (2024, February 08). More than ten thousand solar power plants are in operation. Retrieved August 5, 2024, from

<https://novac.jutarnji.hr/novac/aktualno/u-pogonu-vise-od-deset-tisuca-solarnih-elektrana-15424569>
13. Total Croatia (2023, April 26). Croatia: electric companies offer solar panels for homes. Retrieved August 5, 2024, from <https://total-croatia-news.com/lifestyle/croatia-solar-energy/>
14. Croatia Week (2024, May 3). Solar panel installations on the rise in Croatia. Retrieved August 5, 2024, from <https://www.croatiaweek.com/solar-panel-installations-on-the-rise-in-croatia/>
15. MojPosao.net (2024, May 16). The average salary in Croatia reached 1,270 euros net, but most workers earn less than that amount. Retrieved August 5, 2024, from <https://www.moj-posao.net/Vijest/84158/Prosjecna-placa-u-Hrvatskoj-dosegla-1270-eura-neto-medjutim-vecina-radnika-zaradjuje-manje-od-tog-iznosa/55/>
16. MojPosao (2023, July 4). Installer of solar panels (m/f). Retrieved August 5, 2024, from <https://mojposao.hr/posao/d0396f32-a610-11ee-9a53-02d5740d71bf/monter-solarnih-panela-m-z?source=old>
17. Salary Expert (n.d.). Solar Engineer / Croatia. Retrieved August 5, 2024, from <https://www.salaryexpert.com/salary/job/solar-engineer/croatia>
18. Worldometers (n.d.). Croatia Population. Retrieved August 5, 2024, from <https://www.worldometers.info/world-population/croatia-population/>
19. MLS worldwide (n.d.). Industrial Properties for Rent in Croatia. Retrieved August 5, 2024, from <https://mlsworldwide.com/en/rent-croatia-commercial-industrial>
20. Global Petrol Prices (2023, December). Croatia electricity prices. Retrieved August 5, 2024, from <https://www.globalpetrolprices.com/Croatia/electricity%5Fprices/>
21. Cro Real blog (2024, May 30). Drinking Water Prices in Croatia: Overview and Comparison. Retrieved August 5, 2024, from

<https://www.croreal.com/blog/en/drinking-water-prices-in-croatia-overview-and-comparison>
22. Indomio (n.d.). Commercial Property for rent in Rijeka, Split-Dalmatia and Zagreb. Retrieved August 5, 2024, from <https://www.indomio.hr/en/to-rent/commercial/multiple-areas/area-ids%5F450149,450156,451319>
23. Statista (2024, March). Property Insurance – Croatia. Retrieved August 5, 2024, from <https://www.statista.com/outlook/fmo/insurances/non-life-insurances/property-insurance/croatia>
24. Enerdata (2024, February). Croatia energy report. Retrieved August 5, 2024, from <https://www.enerdata.net/estore/country-profiles/croatia.html>
25. Ministry of Economy and Sustainable development (2023, June). Integrated national energy and climate plan for the republic of Croatia for the period 2021-2030\. Retrieved August 5, 2024, from <https://commission.europa.eu/system/files/2023-07/CROATIA%5F%20DRAFT%20UPDATED%20NECP%202021%202030%20%282%29%5F0.pdf>
26. Balkan Green Energy news (2023, June 29). Croatia adopts regulations to facilitate renewables growth. Retrieved August 5, 2024, from <https://balkangreenenergynews.com/croatia-adopts-regulations-to-facilitate-renewables-growth/>
27. Ministry of environment and energy (2019, December). Integrated National Energy and Climate Plan for the Republic of Croatia. Retrieved August 5, 2024, from <https://mingo.gov.hr/UserDocsImages/UPRAVA%20ZA%20ENERGETIKU/Strategije,%20planovi%20i%20programi/hr%20necp/Integrated%20Nacional%20Energy%20and%20Climate%20Plan%20for%20the%20Republic%20of%5FCroatia.pdf>
28. Renewable market watch (2021, May 12). Croatia Solar Photovoltaic (PV) Power Market Development in the Clean Energy

Transformation Context – Insights, Political Climate, Energy Strategy, Forecast, Renewable Market Watch. Retrieved August 5, 2024, from <https://renewablemarketwatch.com/news-analysis/388-croatia-solar-photovoltaic-pv-power-market-development-in-the-clean-energy-transformation-context-insights-political-climate-energy-strategy-forecast-renewable-market-watch>
29. PV Magazine (2023, April 19). Croatia launches rebate program for solar, other renewables, batteries. Retrieved August 5, 2024, from <https://www.pv-magazine.com/2023/04/19/croatia-launches-rebate-program-for-solar-other-renewables-batteries/>
30. Solar Power Europe (n.d.). Solar saves in Croatia. Retrieved August 5, 2024, from <https://www.solarpowereurope.org/advocacy/solar-saves/stories/solar-saves-in-croatia>
31. Hive energy (2024, February 9). We have secured land on three solar projects in Croatia. Retrieved August 5, 2024, from <https://www.hiveenergy.co.uk/2024/02/09/we-have-secured-land-on-three-solar-projects-in-croatia/>
32. Power Technology (2024, February 15). Top five solar PV plants in development in Croatia. Retrieved August 5, 2024, from <https://www.power-technology.com/data-insights/top-5-solar-pv-plants-in-development-in-croatia/>

For a detailed list of references and additional information, please visit our website with the current report at:
https://www.pvknowhow.com/solar-report/croatia/

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.
www.jvg-thoma.com

Contact & Further Information

For further discussion or clarification of manufacturing-related aspects, please contact:

J.v.G. Technology GmbH
www.jvg-thoma.com
info@jvg-thoma.com

Created with the support of
JVGLABS
AI Automation for Marketing & Sales
www.jvglabs.com