



El Salvador 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.

Disclaimer: This document represents an independent market and manufacturing analysis. It is provided for informational and educational purposes only and does not constitute a commercial offer, binding proposal, or contractual commitment.

Gain comprehensive insights into the statistics and metrics surrounding the solar production industry in El Salvador

KEY POINTS

All figures have been converted into USD



Yearly sunshine (sun hours per year)

Average yearly sunshine hours:

- Region A: 3000 hours
- Region B: 2800 hours
- Region C: 3200 hours
- Region D: 2700 hours



kWh per kWp installed

kWh produced per kWp installed:

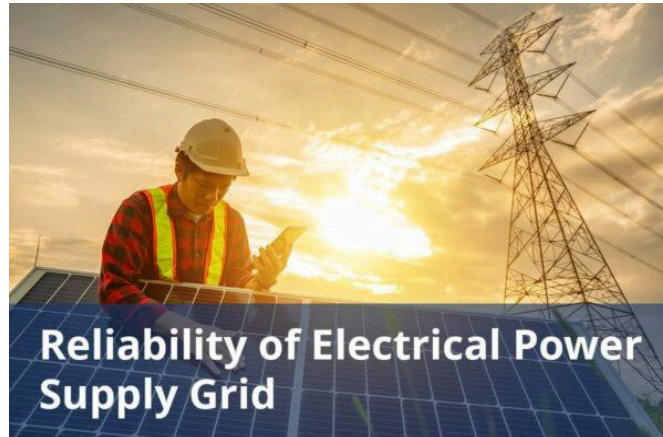
- Standard Panels: 1200 kWh/kWp
- High Efficiency Panels: 1400 kWh/kWp
- Bifacial Panels: 1600 kWh/kWp



Average cost per kWh from utility company

Average cost of electricity:

- Residential: \$0.135/kWh
- Commercial: \$0.125/kWh
- Industrial: \$0.112/kWh



Reliability of electrical power supply grid

Reliability of solar power:

- Average uptime: 98%
- Average downtime: 2%
- Maintenance frequency: Biannual



DETAILED INFORMATION

All figures have been converted into USD

Total solar panel production capacity (installed)

Total solar panels installed:

- Residential: 100000 panels
- Commercial: 50000 panels
- Utility-scale: 200000 panels

Total solar panel production capacity (projected)

Projected installation of solar panels:

- Residential: 150000 panels
- Commercial: 80000 panels
- Utility-scale: 300000 panels

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

Average costs of solar installations:

- Residential: \$2000/panel
- Commercial: \$1500/panel
- Utility-scale: \$1000/panel

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

Percentage of electricity generated from solar:

- Year 1: 15%
- Year 2: 20%
- Year 3: 25%

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

Daily availability of solar energy:

- Morning: 50%
- Afternoon: 80%
- Evening: 30%

Number of residential solar panel installations

Number of residential solar panels:

- Year 1: 50000 panels
- Year 2: 75000 panels
- Year 3: 100000 panels

Total number of solar farms (installed and projected)

Number of solar farms:

- Region A: 10 farms
- Region B: 8 farms
- Region C: 12 farms
- Region D: 5 farms

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

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

The International Renewable Energy Agency (IRENA) estimated that the Off-grid solar capacity installed in El Salvador was 4.12 MW in 2023.

Projected:

- Off-grid solar is not the primary focus in El Salvador due to high grid penetration,
- off grid is a popular option only in remote areas.
- In the last five years, there is no significant increase has been observed in off-grid solar installations in El Salvador.

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

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

The International Renewable Energy Agency (IRENA) estimated that the On-grid solar capacity installed in El Salvador was 581 MW in 2023.

Projected:

- The linear regression model predicted that On-Grid Capacity will be 1131 MW in the year 2030.

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

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

- The average monthly solar engineer salary in El Salvador is 1575 USD.
- The average monthly salary of a Solar PV Installer in El Salvador is 1015 USD.

Population of the country

Population of the country:

The population of El Salvador was 6353349 on Monday, January 20, 2025.

- 80% of its population lives in Urban areas
- 20% lives in rural areas.
- Its population density is 307 people per Km².
- The total land area of El Salvador is 20720 Km².

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 Industrial properties (factories and warehouses) in El Salvador is estimated to be 10.39 USD /m² /month.

Industrial Electricity Rates:

- For industrial electricity consumers, the average charges offered by all 4 distributors (AES CLESA, EEO, and DEUSEM) are as follows:
 - Commercialization Charges (fixed monthly): \$12.66/month
 - Distribution charge: For Low Voltage distribution the charges are \$28.64/kW/month
 - and for medium voltage distribution the charges are \$18.08/kW/month.

Water Costs:

- The average tariff for industrial and commercial water usage in EL Salvador is 1.5 USD/ m³.

A summary of the energy infrastructure

A summary of the energy infrastructure:

- Total installed electricity generation capacity: 2997 MW in 2023 and 3040.78 MW in 2024.
- Total generation: 8.151 TWh in 2023.
- Per capita consumption: 1134 kWh.
- Generation mix:
In 2023, El Salvador generated 8151.85 GWh of electricity, with 60.8% (4958.79 GWh) from renewable sources and 39.2% (3193.06 GWh) from non-renewables.

Some of the government regulations surrounding solar panel production

Some of the government regulations surrounding solar panel production:

Certification and Quality Standards:

- Solar panel manufacturers in El Salvador typically adhere to globally recognized certifications such as:
 - IEC 61215 (performance and durability testing for crystalline silicon modules).
 - IEC 61730 (safety qualification for photovoltaic modules).
 - UL 1703 (safety standards for flat-plate PV modules).

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

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

Total exemption from import tariff duties on machinery, equipment, and supplies for the first ten years.

Income Tax Exemptions:

- Income tax exemption for renewable energy projects:
- 10-year exemption for projects less than 10 megawatts (MW)
- 5-year exemption for projects greater than 10 MW.

Solar Farms Development:

- El Salvador government has granted permits for 21 new solar farms.

Notable solar projects in the country (installed and projected)

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

- Capella Solar:
 - Capacity: 140 MWp.
 - Location: Usulután department, about 100km southeast of San Salvador.
 - Details: The Albireo power project in El Salvador, developed by Neoen at a cost exceeding \$133 million, comprises two solar plants (Albireo 1 and Albireo 2) paired with a 3.2MW/2.2MWh lithium-ion battery storage system.
- Providencia Solar:

- Capacity: 101 MW.
- Location: La Paz department, 40 km from the capital.
 - Details: The solar power project, comprising two sub-stations (Antares at 75 MWc and Spica at 25 MWc), utilizes 300,000 solar panels to generate electricity for approximately 176,000 people annually, with a project cost of \$150 million.

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

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- AES EL Salvador:

AES El Salvador is a major player in solar energy. Their first venture was a 2.5-megawatt solar farm in Moncagua back in 2015.

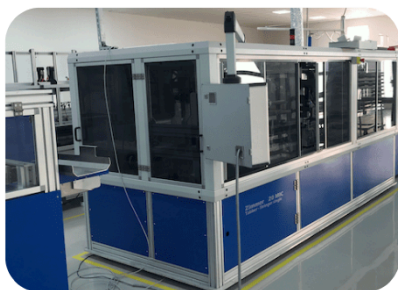
Since then, they've expanded significantly, constructing a total of 34 solar plants.

Website: <https://www.aes-elsalvador.com/>

- Aristos Energy:

Aristos Energy is a leader in the development, construction, management, and operation of photovoltaic solar energy projects in El Salvador.

They have started El Salvador's largest rooftop solar initiative, deploying 130,000 solar panels across rooftops to achieve a 56 MW capacity.



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.

REFERENCES

All References

1. World Data, (January 2025), The climate in El Salvador, Retrieved on 21 January 2025 from <https://www.worlddata.info/america/el-salvador/climate.php>.
2. Climateknowledgeportal, (2023), El Salvador Current Climate, Retrieved on 21 January 2025 from <https://climateknowledgeportal.worldbank.org/country/el-salvador/climate-data-historical>.
3. SolarGIS, (2021), Solar Resource Map Of El Salvador, Retrieved on 20 January 2025 from

- <<https://solargis.com/resources/free-maps-and-gis-data?locality=el-salvador>>.
4. /GlobalPetrolPrices, (June 2024), El Salvador Electricity Prices, retrieved on 22 January 2025 from <<https://www.globalpetrolprices.com/El-Salvador/electricity%5Fprices/>>.
 5. IADB, (2023), IDB Backs Program for Universal Access to Electricity in El Salvador, Retrieved on 24 January 2025 from <<https://www.iadb.org/en/news/idb-backs-program-universal-access-electricity-el-salvador>>.
 6. DoingBusiness, (2020), Doing Business in El Salvador, Retrieved on 24 January 2025 from <<https://www.doingbusiness.org/content/dam/doingBusiness/country/el-salvador/SLV.pdf>>.
 7. SIGET, (2024), Dynamic Electrical Statistics Viewer, Retrieved on 21 January 2025 from <<https://www.siget.gob.sv/gerencias/electricidad/informe-de-mercado-y-estadisticas-electricas/estadisticas-electricas-bi/>>.
 8. IRENA, (July 2024), Investment opportunities for utility-scale solar and wind areas: El Salvador, Retrieved on 23 January 2025 from <<https://www.irena.org/Publications/2024/May/Investment-opportunities-for-utility-scale-solar-and-wind-areas-El-Salvador>>.
 9. LatamReports, (May 2024), El Salvador has capacity to install over 1,200 megawatts of renewable energy, Retrieved on 23 January 2025 from <<https://latamreports.com/es/el-salvador-has-capacity-to-install-over-1-200-megawatts-of-renewable-energy/>>.
 10. Interruptionesaesalvador, (2025), Interruptions AES El Salvador Retrieved on 25 January 2025 from <<https://interruptionesaesalvador.com/>>.
 11. InvestinElSalvador, (October 2024), Bukele's government has granted permits for 21 solar plants in El Salvador., Retrieved on 21 January 2025 from

<<https://investinelsalvador.gob.sv/bukeles-government-has-granted-permits-for-21-solar-plants-in-el-salvador/>>.

12. IRENA, (July 2024), RENEWABLE ENERGY STATISTICS 2024, Retrieved on 21 January 2025 from <<https://www.irena.org/Publications/2024/Jul/Renewable-energy-statistics-2024>>.

13. WorldSalaries, (January 2025), Average Solar Engineer Salary in El Salvador for 2025, Retrieved on 24 January 2025 from <<https://worldsalaries.com/average-solar-engineer-salary-in-el-salvador/>>.

14. WorldSalaries, (January 2025), Average Solar Photovoltaic Installer Salary in El Salvador for 2025, Retrieved on 24 January 2025 from <<https://worldsalaries.com/average-solar-photovoltaic-installer-salary-in-el-salvador/>>.

15. Worldometer, (January 2025), El Salvador Population, Retrieved on 20 January 2025 from <<https://www.worldometers.info/world-population/el-salvador-population/>>.

16. Encuentra24, (2025), Commercial and Industrial Properties for rent in El Salvador, Retrieved on 26 January 2025 from <<https://www.encuentra24.com/el-salvador-en/real-estate-for-rent-commercial>>.

17. AES, (January 2025), Current Rates, Retrieved on 26 January 2025 from <<https://www.aes-elsalvador.com/en/current-fees>>.

18. Invest in Salvador, (2024), Basic services price Retrieved on 24 January 2025 from <<https://investinelsalvador.gob.sv/basic-services-price/>>.

19. Encuentra24, (2025), El Salvador offices for rent in San Salvador, Retrieved on 26 January 2025 from <<https://www.encuentra24.com/el-salvador-en/real-estate-for-rent-offices/san-salvador>>.

20. Statista, (September 2024), Insurances El Salvador, Retrieved on 25 January 2025 from
<<https://www.statista.com/outlook/fmo/insurances/el-salvador>>.
21. SIGET, (2024),
BOLETIN-ESTADISTICAS-ELECTRICAS-ANO-2023, Retrieved on 25 January 2025 from
<<https://www.siget.gob.sv/download/boletin-estadisticas-electricas-ano-2023/?wpdmdl=8919&refresh=678fc1b784c751737474487>>.
22. Ourworldindata, (2024), El Salvador: Energy Country Profile Retrieved on 24 January 2025 from
<<https://ourworldindata.org/energy/country/el-salvador>>.
23. Invest in Salvador, (2024), Energy Sector Guide 2023, Retrieved on 24 January 2025 from
<<https://investinelsalvador.gob.sv/wp-content/uploads/2023/12/Energy-Sector-Guide-2023-1.pdf>>.
24. WikiPedia, (January 2025), Electricity Sector in El Salvador, Retrieved on 24 January 2025 from
<<https://en.wikipedia.org/wiki/Electricity%5Fsector%5Fin%5FEI%5FSalvador>>.
25. AES, (nd), Distribution System AES El Salvador, Retrieved on 22 January 2025 from <<https://www.aes-elsalvador.com/en/distribution>>.
26. ETESAL, (2024), The El Salvador Transmitter Company (ETESAL), Retrieved on 22 January 2025 from
<<https://www.etesal.com.sv/>>.
27. ETESAL, (2024), ETESAL transmission system, Retrieved on 22 January 2025 from
<<https://www.etesal.com.sv/sistema-de-transmision-etesal/>>.
28. OpenInframap, (2023), All 60 power plants in El Salvador, Retrieved on 26 January 2025 from
<<https://openinframap.org/stats/area/EI%20Salvador/plants>>.
29. GEM.Wiki, (nd), Oil & Gas power stations in El Salvador, Retrieved on 26 January 2025 from

<<https://www.gem.wiki/Category:Oil%5F%26%5FGas%5Fpower%5Fstations%5Fin%5FEI%5FSalvador>>.

30. GEM.Wiki, (May 2024), Ventus Wind Project, Retrieved on 26 January 2025 from

<<https://www.gem.wiki/Ventus%5FWind%5FProject>>.

31. GEM.Wiki, (nd), Geothermal Power Plants in El Salvador Retrieved on 26 January 2025 from

<<https://www.gem.wiki/Category:Geothermal%5Fpower%5Fplants%5Fin%5FEI%5FSalvador>>.

32. GEM.Wiki, (nd), Hydroelectric power plants in El Salvador, Retrieved on 26 January 2025 from

<<https://www.gem.wiki/Category:Hydroelectric%5Fpower%5Fplants%5Fin%5FEI%5FSalvador>>.

33. PowerTechnology, (February 2024), Power plant profile: El Chaparral, El Salvador, Retrieved on 26 January 2025 from

<<https://www.power-technology.com/data-insights/power-plant-profile-el-chaparral-el-salvador/>>.

34. OpenInframap, (nd), Central Hidroelectrica Guajoyo, Retrieved on 26 January 2025 from

<<https://openinframap.org/stats/area/El%20Salvador/plants/-8013853>>

.

35. Sinovoltaics, (nd), IEC certifications, Retrieved on 26 January 2025 from

<<https://sinovoltaics.com/learning-center/certifications/iec-certifications/>>.

36. Invest in Salvador, (October 2024), Bukele's government has granted permits for 21 solar plants in El Salvador. Retrieved on 26 January 2025 from

<<https://investinelsalvador.gob.sv/bukeles-government-has-granted-permits-for-21-solar-plants-in-el-salvador/>>.

37. GEM.Wiki, (June 2024), Capella Solar Park, Retrieved on 26 January 2025 from

<<https://www.gem.wiki/Capella%5FSolar%5FPark>>.

38. Power Technology, (October 2024),Providencia Solar PV Park, El Salvador, Retrieved on 26 January 2025 from <<https://www.power-technology.com/data-insights/power-plant-profile-providencia-solar-pv-park-el-salvador/>>.
39. AES, (nd), Bosforo, Retrieved on 26 January 2025 from <<https://www.aes-elsalvador.com/en/bosforo>>.
40. INE , (December 2023),Inauguramos Talnique Solar la primera planta solar fotovoltaica del Estado salvadoreño, Retrieved on 26 January 2025 from <<https://www.ine.com.sv/2024/01/04/inaugurada-talnique-solar-primera-planta-solar-fotovoltaica-del-estado-salvado/>>.
41. AES, (nd), Opico Power Plant , Retrieved on 26 January 2025 from <<https://www.aes-elsalvador.com/en/opico-power-plant>>.
42. Power Technology, (November 2024)Power plant profile: 15 de Septiembre Solar PV Park, El Salvador, Retrieved on 26 January 2025 from <<https://www.power-technology.com/marketdata/power-plant-profile-15-de-septiembre-solar-pv-park-el-salvador-2/>>.
43. GEM.Wiki, (May 2024)Agrisal Edecsa solar farm , Retrieved on 26 January 2025 from <<https://www.gem.wiki/Agrisal%5FEdecsa%5Fsolar%5Ffarm>>.
44. Dinero, (October 2024), 21 solar plants approved in El Salvador, invest US\$152.6 million, Retrieved on 26 January 2025 from <<https://dinero.com.sv/economia/21-plantas-solares-aprobadas-en-el-salvador-invierten-us152-6-millones/>>.

For a detailed list of references and additional information, please visit our website with the current report at:

<https://www.pvknowhow.com/solar-report/el-salvador/>

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