



# Central African 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.

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Gain comprehensive insights into the statistics and metrics surrounding the solar production industry in Central African Republic

## KEY POINTS

All figures have been converted into USD



## Yearly sunshine (sun hours per year)

Average yearly sunshine: 300 days

Monthly sunshine variation:

- January: 6 hours
- February: 6 hours
- March: 7 hours
- April: 8 hours
- May: 9 hours
- June: 10 hours
- July: 10 hours
- August: 9 hours
- September: 8 hours
- October: 7 hours
- November: 6 hours
- December: 5 hours



**kWh per kWp installed**

Energy production:

- Average production per kWp: 1200 kWh/year

Efficiency factors:

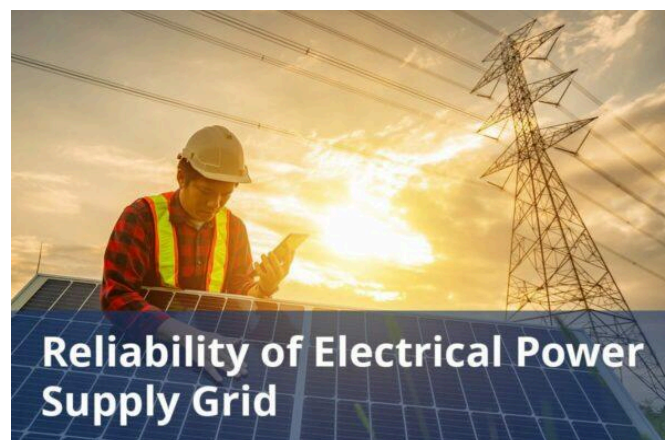
- System loss: 14%
- Orientation and tilt adjustments: 10%



## Average cost per kWh from utility company

Electricity costs:

- Residential rates:
- Off-peak: \$0.10/kWh
- Peak: \$0.20/kWh



## Reliability of electrical power supply grid

System reliability:

- Average uptime: 98%
- Maintenance schedule: Quarterly



## DETAILED INFORMATION

All figures have been converted into USD

### Total solar panel production capacity (installed)

Installed solar panels:

- Total capacity achieved: 500 MW
- Number of residential installations: 20000

### Total solar panel production capacity (projected)

Projected installations:

- Next year forecast: 70000 panels

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

Cost of solar panels:

- Average cost per Watt: \$2.50/W

- Installation labor cost: \$0.50/W

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

Electricity generation sources:

- Solar: 30%
- Wind: 20%
- Natural gas: 25%
- Coal: 10%
- Hydro: 15%

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

Solar availability:

- Average daily sunlight hours: 8 hours

## **Number of residential solar panel installations**

Residential panels installed:

- Total homes with solar: 20000

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

Solar farms in operation:

- Total number of solar farms: 30

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

Current Off-Grid Market Demand in the Central African Republic (CAR):

- The current off-grid solar market demand in CAR is primarily driven by the country's lack of access to reliable electricity, with approximately 80% of the population living without access to the national grid.
- As a result, off-grid solar solutions, such as solar home systems (SHS), are increasingly being adopted, particularly in rural and remote areas.
- Off-grid solar energy systems have become a vital energy source for households, schools, healthcare centers, and small businesses.
- The demand for off-grid solutions has been supported by international organizations, such as the World Bank and USAID, which have implemented various initiatives to promote renewable energy in CAR.
- These initiatives include solar-powered agricultural systems, which are being used to improve productivity in the agriculture sector, and solar solutions for small businesses, which support local economic growth.
- The government's efforts to reduce dependency on fossil fuels and provide energy access through solar mini-grids are also boosting the off-grid solar market.
- For instance, \$7.6 million in funding has been allocated to improve access to electricity in rural areas through solar mini-grids.
- The demand for off-grid systems is also growing as energy independence becomes increasingly important for local communities, especially as they seek sustainable, affordable, and reliable energy solutions.

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

Current On-Grid Solar Market Demand in the Central African Republic (CAR):

- The on-grid solar market in CAR is gaining momentum as the government prioritizes expanding access to reliable electricity.
- With the electrification rate currently at 35% in Bangui, 8% in provincial cities, and only 2% in rural areas, the demand for clean energy solutions is increasing.
- The Danzi 25-megawatt solar park, inaugurated in November 2023, is a major milestone, almost doubling the country's electricity generation capacity.
- This park is designed to replace more than 90% of the energy generated by diesel, which is expensive and polluting.
- This project is part of a broader strategy, including the Electricity Sector Strengthening and Access Project (PARSE), which focuses on deploying solar mini-grids and providing solar kits to households and businesses.

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

A Solar Photovoltaic Installer in the Central African Republic typically earns around 5201 USD yearly.

- The salary can range from a low average of about 2417 USD/yr to a high average of 8077 USD/yr.

### **Population of the country**

The current population of the Central African Republic is 5395621.

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

Estimate for Factory Rent Monthly Average Warehouse Rental Cost:

- Rental costs are not given but; Starting a business in the Central African Republic (CAR) involves navigating several legal and procedural steps.
- For a typical limited liability company (LLC), here are the key aspects:
  - Registration Process: It includes depositing the initial capital, obtaining various certificates (such as a residence certificate for the director), notarizing company documents, and registering at the Guichet Unique de formalité des Entreprises (GUFÉ).
  - The whole process takes around 22 days, with the official registration costing approximately 127.8% of the income per capita.
  - Legal Requirements: The company must be domestically owned, typically by five individuals, with a mix of shares.

## **A summary of the energy infrastructure**

Electricity Generation:

- The Central African Republic (C.A.R.) generates a significant portion of its electricity from renewable sources, with hydropower accounting for nearly 99% of the installed capacity.
- The Central African Republic (CAR) has limited electricity transmission and access, with only a small portion of the population having access to the national power grid.
- Electricity access remains very limited, with only 14% of the population having access, mostly in urban areas like the capital, Bangui.

## **Some of the government regulations surrounding solar panel production**

In CAR, solar energy is increasingly promoted as a means to enhance sustainability and reduce dependence on traditional energy sources.

- However, due to high dependency on hydro, no definite regulations are related to solar panel productions.
- Below are the key regulations and considerations for renewable electricity installations in the country:
- Decree No. 68/048 of 1968 grants a distribution monopoly to ENERCA, the state-owned utility.
- However, this monopoly has been criticized due to poor service quality, which led the government to liberalize the sector in 2005.

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

The Central African Republic (CAR) has made considerable strides in promoting solar energy production through several government initiatives and partnerships.

- Danzi Solar Park: In November 2023, CAR launched the Danzi solar park, a 25 MWp solar power plant located near Bangui.
- World Bank Financing: The World Bank provided a €56 million grant through its International Development Association (IDA) to fund the solar park and associated infrastructure.

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

Current Projects:

- Bangui Solar PV Park:
- Location: Bangui, Central African Republic
- Capacity: 40 MW
- Inauguration Date: Expected commercial operation start in 2023.

- Project Stage: Partially active, with construction commencing in 2021.

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

Some of the notable solar companies:

- Africa Offshore Services and Engineering Works PLC (AFOSE Works):

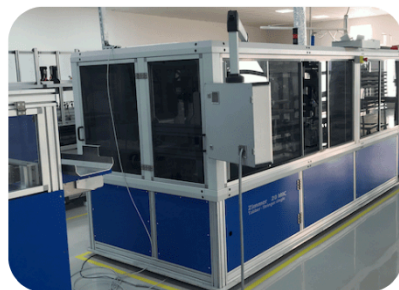
- Website: <https://www.afoseworks.com>

- Products and Services: Solar panel and battery storage installation services.

- Aptech Africa Ltd.:

- Website: <https://aptechafrica.com>

- Products and Services: Solar system installation and battery storage 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.

# REFERENCES

## All References

1. Sunshine & Daylight Hours in Birao, Central African Republic. (2023). *\_Sunlight, Cloud & Day length\_*. Retrieved November 9, 2023, from <<https://www.climate.top/central-african-republic/birao/sunlight/>>
2. Statista. (2023). Chart: Africa leads the world in solar power potential. *\_Statista\_*. Retrieved November 9, 2023, from <<https://www.statista.com/chart/27722/practical-potential-solar-energy-output-by-global-region/>>
3. Climatescope. (2023). *\_Climatescope 2023 | Central African Republic\_*. Retrieved November 6, 2023, from <https://www.global-climatescope.org/markets/cf/>
4. World Bank. (2022). Central African Republic: Increasing electricity supply and access and supporting the health system. Retrieved November 6, 2023, from <<https://www.worldbank.org/en/news/press-release/2022/06/03/afw-central-african-republic-increasing-electricity-supply-and-access-and-supporting-the-health-system>>
5. International Renewable Energy Agency. (2024). *\_Renewable energy statistics 2024\_*. Retrieved November 9, 2023, from <<https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2024/Jul/IRENA%5FRenewable%5FEnergy%5FStatistics%5F2024.pdf>>
6. Sall, M., & Diagana, O. (2023). Powering West and Central Africa for a brighter future. *\_The Africa Report\_*. Retrieved November 9, 2023, from <<https://www.theafricareport.com/328637/powering-west-and-central-africa-for-brighter-future/>>

7. Worldometer. (2023). [\\_Central African Republic Electricity Statistics\\_](https://www.worldometers.info/electricity/central-african-republic-electricity/). Retrieved November 11, 2023, from <<https://www.worldometers.info/electricity/central-african-republic-electricity/>>
8. World Bank. (2023). [Powering Up Africa: Let There Be Light](https://www.worldbank.org/en/news/feature/2023/11/27/powering-up-africa-let-there-be-light). Retrieved November 11, 2023, from <<https://www.worldbank.org/en/news/feature/2023/11/27/powering-up-africa-let-there-be-light>>
9. Power plant profile: Bangui Solar PV Park, Central African Republic. (2024). [\\_Power Technology\\_](https://www.power-technology.com/data-insights/power-plant-profile-bangui-solar-pv-park-central-african-republic/?cf-view). Retrieved November 6, 2023, from <<https://www.power-technology.com/data-insights/power-plant-profile-bangui-solar-pv-park-central-african-republic/?cf-view>>
10. Central African Republic inaugurates 25MW solar plant. (2023, November 17). [\\_Pumps Africa\\_](https://pumps-africa.com/central-african-republic-inaugurates-25mw-solar-plant/). Retrieved November 11, 2023, from <<https://pumps-africa.com/central-african-republic-inaugurates-25mw-solar-plant/>>
11. CAR: GCF and IDA release \$138m for solar electrification. (2023, November 7). [\\_Afrik 21\\_](https://www.afrik21.africa/en/car-gcf-and-ida-release-138m-for-solar-electrification/). Retrieved November 9, 2023, from <<https://www.afrik21.africa/en/car-gcf-and-ida-release-138m-for-solar-electrification/>>
12. Central African Republic's first large-scale solar PV plant goes live. (2023, May 4). [\\_SolarQuarter\\_](https://solarquarter.com/2023/05/04/central-african-republics-first-large-scale-solar-pv-plant-goes-live/#google%5Fvignette). Retrieved November 9, 2023, from <<https://solarquarter.com/2023/05/04/central-african-republics-first-large-scale-solar-pv-plant-goes-live/#google%5Fvignette>>
13. World Bank. (2022). [\\_Central African Republic: First Phase of the Electricity Sector Strengthening and Access Project\\_](https://documents1.worldbank.org/curated/en/824551653593686389/pdf/Central-African-Republic-First-Phase-of-the-Electricity-Sector-Strengthening-and-Access-Project.pdf). Retrieved November 11, 2023, from <<https://documents1.worldbank.org/curated/en/824551653593686389/pdf/Central-African-Republic-First-Phase-of-the-Electricity-Sector-Strengthening-and-Access-Project.pdf>>
14. With the Support of the World Bank, a New Solar Park in the Central African Republic Expands Access to Clean Energy. (2023, November 17). [\\_World Bank\\_](https://www.worldbank.org/). Retrieved November 11, 2023, from

<<https://www.worldbank.org/en/news/press-release/2023/11/17/with-the-support-of-the-world-bank-a-new-solar-park-in-the-central-african-republic-expands-access-to-clean-energy>>

15. Average Solar Photovoltaic Installer Salary in Central African Republic for 2024\ (2023). [\\_World Salaries\\_](#). Retrieved November 6, 2023, from

<<https://worldsalaries.com/average-solar-photovoltaic-installer-salary-in-central-african-republic/>>

16. Central African Republic Population (2024) – Worldometer. (2024). [\\_Worldometer\\_](#). Retrieved November 9, 2023, from

<<https://www.worldometers.info/world-population/central-african-republic-population/>>

17. World Bank. (2020). [\\_Doing business 2020: Central African Republic\\_](#). Retrieved November 9, 2023, from

<<https://archive.doingbusiness.org/content/dam/doingBusiness/country/c/central-african-republic/CAF.pdf>>

18. Numbeo. (n.d.). [\\_Central African Republic property investment information\\_](#). Retrieved November 11, 2023, from

<<https://www.numbeo.com/property-investment/country%5Fresult.jsp?country=Central+African+Republic>>

19. Understand low-carbon energy in Central African Republic through Data | Low-Carbon Power. (2023). [\\_Low-Carbon Power\\_](#). Retrieved November 11, 2023, from

<<https://lowcarbonpower.org/region/Central%5FAfrican%5FRepublic>>

20. Central African Republic | Africa Energy Portal. (2023). [\\_Africa Energy Portal\\_](#). Retrieved November 9, 2023, from

<<https://africa-energy-portal.org/aep/country/central-african-republic>>

21. Expanding solar power in the Central African Republic | DFC. (2023). [\\_DFC\\_](#). Retrieved November 9, 2023, from

<<https://www.dfc.gov/investment-story/expanding-solar-power-central-african-republic>>

22. Power Africa Awards Grants to Increase Access to Solar-Powered Productive-Use Technologies in East Africa. (2023, October 10).

\_Press Release | Power Africa | U.S. Agency for International Development\_. Retrieved November 6, 2023, from <https://www.usaid.gov/uganda/press-release/oct-10-2024-power-africa-awards-grants-increase-access-solar-powered-productive-use-technologies-east-africa>

23. Invest Central African Republic Solar Energy – Business Opportunities in Central African Republic. (2023). \_AFSIC\_. Retrieved November 9, 2023, from

<<https://www.afsic.net/central-african-republic-solar-energy/>>

24. CAR: the country's second photovoltaic solar power plant(25 MWp) inaugurated at Danzi. (2023). \_Afrik 21\_. Retrieved November 9, 2023, from

<<https://www.afrik21.africa/en/car-the-countrys-second-photovoltaic-solar-power-plant25-mwp-inaugurated-at-danzi/>>

25. Aptech Africa Ltd. | Solar System Installers | Uganda. (2023). \_ENF Solar\_. Retrieved November 6, 2023, from

<<https://www.enfsolar.com/aptech-africa?directory=installer&utm%5Fsource=ENF&utm%5Fmedium=Africa&utm%5Fcontent=82534&utm%5Fcampaign=profiles%5Finstaller>>

26. Africa Offshore Services and Engineering Works PLC | Solar System Installers | Cameroon. (2023). \_ENF Solar\_. Retrieved November 9, 2023, from

<<https://www.enfsolar.com/afose-works?directory=installer&utm%5Fsource=ENF&utm%5Fmedium=Africa&utm%5Fcontent=137297&utm%5Fcampaign=profiles%5Finstaller>>

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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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