

# **String PV Inverter Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034**

<https://marketpublishers.com/r/SA05F7DBE3B3EN.html>

Date: March 2025

Pages: 150

Price: US\$ 4,850.00 (Single User License)

ID: SA05F7DBE3B3EN

## **Abstracts**

The Global String PV Inverter Market, valued at USD 19 billion in 2024, is projected to grow at a CAGR of 9.8% from 2025 to 2034. The increasing global emphasis on mitigating climate change and reducing carbon emissions is fueling the demand for clean energy solutions, accelerating the adoption of string PV inverters. These inverters offer a scalable, cost-effective, and efficient solution to harness solar energy, making them a preferred choice for expanding renewable energy infrastructure. With governments worldwide setting aggressive renewable energy targets and providing financial incentives for solar energy projects, the demand for string PV inverters is expected to soar. The integration of advanced digital technologies, such as AI and IoT, into PV inverters is further enhancing their performance, monitoring capabilities, and predictive maintenance, ensuring higher operational efficiency. Additionally, the growing focus on decentralizing power generation and ensuring grid stability in emerging economies is pushing the adoption of these inverters across residential, commercial, and industrial sectors.

The three-phase segment is poised to generate USD 47.8 billion by 2034, driven by the rising demand for high-power solutions in commercial and industrial applications. These inverters are particularly advantageous for larger-scale installations due to their ability to efficiently handle higher power output while maintaining grid stability. Their adaptability to various grid systems and ease of customization make them ideal for accommodating diverse project requirements. Moreover, advancements in inverter technology are enhancing the performance of three-phase inverters, reducing downtime, and increasing overall energy yields, further driving their adoption in the commercial and industrial sectors.

The string PV inverter market is segmented into standalone and on-grid systems, with the on-grid segment dominating the market with a 78.4% share in 2024. The rising demand for on-grid systems stems from the need to reduce dependence on conventional power sources, particularly in remote and off-grid areas. As more regions seek energy independence by generating and storing solar energy, on-grid solutions are becoming increasingly popular for their reliability and ability to provide backup power during grid outages. These systems are critical for ensuring energy resilience in critical infrastructure, commercial establishments, and residential setups, thereby driving the growth of the on-grid segment.

North America held a 15.4% share of the string PV inverter market in 2024 and is expected to witness steady growth through 2034. The decreasing cost of solar PV installations, coupled with supportive policies such as the Investment Tax Credit (ITC) and various state-level incentives, is encouraging the adoption of solar systems across residential, commercial, and utility-scale applications. Growing concerns about energy security, climate change mitigation, and the push toward sustainable energy solutions are further bolstering the demand for string PV inverters in the United States. As the U.S. continues to promote clean energy adoption, the string PV inverter market is expected to witness sustained growth, offering promising opportunities for manufacturers and service providers in the region.

## Contents

### **CHAPTER 1 METHODOLOGY & SCOPE**

- 1.1 Research Design
- 1.2 Base Estimates & Calculations
- 1.3 Forecast Model
- 1.4 Primary Research & Validation
  - 1.4.1 Primary Sources
  - 1.4.2 Data Mining Sources
- 1.5 Market definitions

### **CHAPTER 2 EXECUTIVE SUMMARY**

- 2.1 Industry synopsis, 2021 – 2034

### **CHAPTER 3 INDUSTRY INSIGHTS**

- 3.1 Industry ecosystem
- 3.2 Regulatory landscape
- 3.3 Industry impact forces
  - 3.3.1 Growth drivers
  - 3.3.2 Industry pitfalls & challenges
- 3.4 Growth potential analysis
- 3.5 Porter's analysis
  - 3.5.1 Bargaining power of suppliers
  - 3.5.2 Bargaining power of buyers
  - 3.5.3 Threat of new entrants
  - 3.5.4 Threat of substitutes
- 3.6 PESTEL analysis

### **CHAPTER 4 COMPETITIVE LANDSCAPE, 2024**

- 4.1 Introduction
- 4.2 Strategic dashboard
- 4.3 Innovation & technology landscape

### **CHAPTER 5 MARKET SIZE AND FORECAST, BY PHASE, 2021 – 2034 (USD BILLION & MW)**

5.1 Key trends

5.2 Single phase

5.3 Three phase

5.3.1 Low power ( $\leq 99$  kW)

5.3.2 High power ( $> 99$  kW)

## **CHAPTER 6 MARKET SIZE AND FORECAST, BY CONNECTIVITY, 2021 – 2034 (USD BILLION & MW)**

6.1 Key trends

6.2 Standalone

6.3 On grid

## **CHAPTER 7 MARKET SIZE AND FORECAST, BY NOMINAL OUTPUT VOLTAGE, 2021 – 2034 (USD BILLION & MW)**

7.1 Key trends

7.2  $\leq 230$  V

7.3 230 - 400 V

7.4 400 - 600 V

7.5  $> 600$  V

## **CHAPTER 8 MARKET SIZE AND FORECAST, BY NOMINAL OUTPUT POWER, 2021 – 2034 (USD BILLION & MW)**

8.1 Key trends

8.2 8.3 3 - 33 kW

8.4 33 - 110 kW

8.5  $> 110$  kW

## **CHAPTER 9 MARKET SIZE AND FORECAST, BY APPLICATION, 2021 – 2034 (USD BILLION & MW)**

9.1 Key trends

9.2 Residential

9.3 Commercial & industrial

9.4 Utility

## **CHAPTER 10 MARKET SIZE AND FORECAST, BY REGION, 2021 – 2034 (USD BILLION & MW)**

- 10.1 Key trends
- 10.2 North America
  - 10.2.1 U.S.
  - 10.2.2 Canada
- 10.3 Europe
  - 10.3.1 Germany
  - 10.3.2 Italy
  - 10.3.3 Poland
  - 10.3.4 Netherlands
  - 10.3.5 UK
  - 10.3.6 France
- 10.4 Asia Pacific
  - 10.4.1 China
  - 10.4.2 Australia
  - 10.4.3 India
  - 10.4.4 Japan
  - 10.4.5 South Korea
- 10.5 Middle East & Africa
  - 10.5.1 Israel
  - 10.5.2 Saudi Arabia
  - 10.5.3 UAE
- 10.6 Latin America
  - 10.6.1 Brazil
  - 10.6.2 Mexico

## **CHAPTER 11 COMPANY PROFILES**

- 11.1 Canadian Solar
- 11.2 Delta Electronics
- 11.3 GoodWe
- 11.4 Growatt New Energy
- 11.5 Huawei Technologies
- 11.6 Ingeteam Power Technology
- 11.7 SMA Solar Technology
- 11.8 Sungrow
- 11.9 Siemens

11.10 Solis Inverter

11.11 SolarEdge Technologies

11.12 Sineng Electric

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