

# **US Solar Inverter Market Forecast to 2030 - analysis by Product Type (String, Micro, and Central), Phase (Single Phase and Three Phase), Connectivity (Standalone and On-Grid), Application (Residential and Community, Commercial and Industrial, Utility), and Capacity (Below 5 kW, 5–15 kW, 15–25 kW, 25–50 kW, and Above 50 kW)**

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## **Abstracts**

The US solar inverter market is projected to reach US\$ 825.86 million in 2022 and is expected to reach US\$ 2,773.99 million by 2030; it is estimated to record a CAGR of 12.8% from 2022 to 2030

Solar installations attributed to government-led incentives and schemes, along with growing residential solar rooftop installations, positively influence the solar PV inverters market growth. Further, the increasing investments in the renewable energy sector to reduce fossil fuel consumption to lower carbon emission, coupled with technological innovations in US solar inverter market, are among the factors driving the market growth. However, the safety risks associated with high DC voltages in solar inverters are restraining the market growth.

A string inverter is connected to a solar array (a string of solar panels) to convert the direct current (DC) to usable electricity (alternating current) for residential and commercial applications. One string inverter can handle energy produced from a row of 5–10 solar panels.

The need for US solar inverter market was prevalent during the pre-COVID-19 era because of the growing urban population that led to increasing infrastructural

developments. Due to the COVID-19 pandemic, the outlook for solar energy changed dramatically. In June 2020, the solar industry employed 188,000 workers rather than the 302,000 originally forecasted—a sharp decline of 38% was observed. The US planned to install 3 gigawatts (GW) of solar capacity in Q2 2020—a 37% decline from pre-COVID forecasts. In Q2 of 2020, the US solar deployment project witnessed a drop-off equivalent to power 288,000 homes, i.e., US\$ 3.2 billion in economic investment. In 2020, manufacturing industries were severely affected due to a drastic decrease in product demand, falling prices, and storage shortages. A swift decline in manufacturing revenues due to virtually nonexistent manufacturing demand and slow production capabilities limited the expenditure on installing or upgrading existing solar inverters across various industries in North America. Periodic maintenance and discontinuation of operation in existing manufacturing plants also hampered the demand for US solar inverter market. Thus, the COVID-19 pandemic adversely affected the US solar inverter market growth.

In 2021, private companies invested in distributed (including rooftop) solar PV installation on residential buildings. This type of investment created a demand for solar Inverters. The manufacturing industry started recovering from labor shortages and supply chain challenges, which triggered the adoption of US solar inverter market. In 2022, solar inverters witnessed a higher demand in the US due to the continued progress in the renewable energy sector.

GoodWe Technologies Co Ltd, Delta Electronics Inc, CyboEnergy Inc, Yaskawa America Inc, Danfoss AS, SMA Solar Technology AG, SolarEdge Technologies Inc, Power Electronics SL, Ginlong Technologies Co Ltd, Chicago Digital Power Inc, Sungrow Power Supply Co Ltd, Caterpillar Inc. are a few key US solar inverter market players.

The consumption of renewable energy sources in the US is on the rise, with wind and solar energy contributing 14% of domestic electricity production. In March 2022, electricity generated from renewables surpassed coal. Hydropower contributed 6%, and biomass and geothermal sources generated less than 1%. California produced 26% of the national utility-scale solar electricity, followed by Texas with 16% and North Carolina with 8%. Texas also led the way in wind generation, accounting for 26% of the US. Iowa and Oklahoma were the next closest states, with 10% and 9% of the total, respectively. Thus, the surge in the transition from nonrenewable sources to renewable sources to meet growing energy consumption requirements is expected to continue to create lucrative opportunities for the US solar inverter market players during the forecast period.

## Contents

### **1. INTRODUCTION**

- 1.1 The Insight Partners Research Report Guidance
- 1.2 Market Segmentation

### **2. EXECUTIVE SUMMARY**

- 2.1 Key Insights

### **3. RESEARCH METHODOLOGY**

- 3.1 Coverage
- 3.2 Secondary Research
- 3.3 Primary Research

### **4. SOLAR INVERTER MARKET LANDSCAPE**

- 4.1 Overview
- 4.2 PEST Analysis
- 4.3 Ecosystem Analysis

### **5. SOLAR INVERTER MARKET - KEY INDUSTRY DYNAMICS**

- 5.1 Key Market Drivers:
  - 5.1.1 Growing Utility and Residential Solar Installations
  - 5.1.2 Steep Decline in Raw Material Costs and PV Systems
  - 5.1.3 Rising Number of Solar Installations Attributed to Government-led Incentives and Schemes
- 5.2 Key Market Restraints:
  - 5.2.1 Removal of subsidies and favorable government support to slow the growth opportunities.
  - 5.2.2 Higher installation, Maintenance, and Operational Cost
- 5.3 Key Market Opportunities:
  - 5.3.1 Inclination Toward Renewable Energy Sources
- 5.4 Future Trend:
  - 5.4.1 Technological Innovations in Smart Inverters
- 5.5 Impact of Drivers And Restraints:

## **6. SOLAR INVERTER MARKET - REGIONAL MARKET ANALYSIS**

6.1 Solar Inverter Market, (US\$ Billion), 2020 and 2030

6.2 Solar Inverter Market Revenue (US\$ Mn), 2020 – 2030

## **7. SOLAR INVERTER MARKET ANALYSIS – PRODUCT TYPE**

7.1 Overview

7.2 Solar Inverter Market Revenue Share, By End-Use Industry (2022 and 2030)

7.3 String

7.3.1 Overview

7.3.2 String: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

7.4 Micro

7.4.1 Overview

7.4.2 Micro: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

7.5 Central

7.5.1 Overview

7.5.2 Central: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

## **8. SOLAR INVERTER MARKET ANALYSIS – PHASE**

8.1 Overview

8.2 Solar Inverter Market Revenue Share, By Phase (2022 and 2030)

8.3 Single Phase

8.3.1 Overview

8.3.2 Single Phase: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

8.4 Three Phase

8.4.1 Overview

8.4.2 Three Phase: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

## **9. SOLAR INVERTER MARKET ANALYSIS – CONNECTIVITY**

9.1 Overview

9.2 Solar Inverter Market Revenue Share, By Connectivity (2022 and 2030)

9.3 Standalone

9.3.1 Overview

9.3.2 Standalone: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

9.4 On-Grid

9.4.1 Overview

9.4.2 On-Grid: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

## **10. SOLAR INVERTER MARKET ANALYSIS – CAPACITY**

10.1 Overview

10.2 Solar Inverter Market Revenue Share, By Capacity (2022 and 2030)

10.3 Below 5 kW

10.3.1 Overview

10.3.2 Below 5 kW: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

10.4 5-15 kW

10.4.1 Overview

10.4.2 5-15 kW: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

10.5-25 kW

10.5.1 Overview

10.5.2-25 kW: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

10.6-50 kW

10.6.1 Overview

10.6.2-50 kW: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

10.7 Above 50 kW

10.7.1 Overview

10.7.2 Above 50 kW: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

## **11. SOLAR INVERTER MARKET ANALYSIS – APPLICATION**

11.1 Overview

11.2 Solar Inverter Market Revenue Share, By Application (2022 and 2030)

11.3 Residential and Community

11.3.1 Overview

11.3.2 Residential and Community: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

11.4 Commercial and Industrial

11.4.1 Overview

11.4.2 Commercial and Industrial: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

11.5 Utility

11.5.1 Overview

11.5.2 Utility: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

## **12. PRE & POST COVID-19 IMPACT**

12.1 Overview

## **13. COMPETITIVE LANDSCAPE**

13.1 Company Positioning & Concentration

13.2 Competitive Benchmarking

## **14. INDUSTRY LANDSCAPE**

14.1 Overview

14.2 Market Initiative

14.3 Product Development

14.4 Mergers & Acquisitions

## **15. COMPANY PROFILES**

15.1 GoodWe Technologies Co Ltd

15.1.1 Key Facts

15.1.2 Business Description

15.1.3 Products and Services

15.1.4 Financial Overview

15.1.5 SWOT Analysis

15.1.6 Key Developments

15.2 Delta Electronics Inc

15.2.1 Key Facts

15.2.2 Business Description

15.2.3 Products and Services

15.2.4 Financial Overview

15.2.5 SWOT Analysis

15.2.6 Key Developments

15.3 Yaskawa America Inc

15.3.1 Key Facts

15.3.2 Business Description

15.3.3 Products and Services

15.3.4 Financial Overview

15.3.5 SWOT Analysis

15.3.6 Key Developments

## 15.4 SMA Solar Technology AG

### 15.4.1 Key Facts

### 15.4.2 Business Description

### 15.4.3 Products and Services

### 15.4.4 Financial Overview

### 15.4.5 SWOT Analysis

### 15.4.6 Key Developments

## 15.5 Danfoss AS

### 15.5.1 Key Facts

### 15.5.2 Business Description

### 15.5.3 Products and Services

### 15.5.4 Financial Overview

### 15.5.5 SWOT Analysis

### 15.5.6 Key Developments

## 15.6 CyboEnergy Inc

### 15.6.1 Key Facts

### 15.6.2 Business Description

### 15.6.3 Products and Services

### 15.6.4 Financial Overview

### 15.6.5 SWOT Analysis

### 15.6.6 Key Developments

## 15.7 Chicago Digital Power Inc

### 15.7.1 Key Facts

### 15.7.2 Business Description

### 15.7.3 Products and Services

### 15.7.4 Financial Overview

### 15.7.5 SWOT Analysis

### 15.7.6 Key Developments

## 15.8 Caterpillar Inc

### 15.8.1 Key Facts

### 15.8.2 Business Description

### 15.8.3 Products and Services

### 15.8.4 Financial Overview

### 15.8.5 SWOT Analysis

### 15.8.6 Key Developments

## 15.9 Sungrow Power Supply Co Ltd

### 15.9.1 Key Facts

### 15.9.2 Business Description

### 15.9.3 Products and Services

- 15.9.4 Financial Overview
- 15.9.5 SWOT Analysis
- 15.9.6 Key Developments
- 15.10 Ginlong Technologies Co Ltd
- 15.10.1 Key Facts
- 15.10.2 Business Description
- 15.10.3 Products and Services
- 15.10.4 Financial Overview
- 15.10.5 SWOT Analysis
- 15.10.6 Key Developments
- 15.11 Power Electronics SL
- 15.11.1 Key Facts
- 15.11.2 Business Description
- 15.11.3 Products and Services
- 15.11.4 Financial Overview
- 15.11.5 SWOT Analysis
- 15.11.6 Key Developments
- 15.12 Solaredge Technologies Inc
- 15.12.1 Key Facts
- 15.12.2 Business Description
- 15.12.3 Products and Services
- 15.12.4 Financial Overview
- 15.12.5 SWOT Analysis
- 15.12.6 Key Developments

## **16. APPENDIX**

- 16.1 Appendix



## List Of Tables

### LIST OF TABLES

Table 1. Solar Inverter Market Segmentation

Table 2. Solar Inverter Market Revenue And Forecasts To 2030 (US\$ Mn)

Table 3. US Solar Inverter Market, By Product Type - Revenue and Forecast to 2030 (US\$ Million)

Table 4. US Solar Inverter Market, By Phase - Revenue and Forecast to 2030 (US\$ Million)

Table 5. US Solar Inverter Market, By Connectivity - Revenue and Forecast to 2030 (US\$ Million)

Table 6. US Solar Inverter Market, By Capacity - Revenue and Forecast to 2030 (US\$ Million)

Table 7. US Solar Inverter Market, By Application - Revenue and Forecast to 2030 (US\$ Million)

Table 8. Competitive Benchmarking

## List Of Figures

### LIST OF FIGURES

Figure 1. Solar Inverter Market Segmentation, By Geography

Figure 2. Solar Inverter Market - PEST Analysis

Figure 3. Solar Inverter Market - Ecosystem Analysis

Figure 4. Solar Inverter Market - Key Industry Dynamics

Figure 5. Impact Analysis of Drivers And Restraints

Figure 6. Solar Inverter Market, (US\$ Billion), 2020 and 2030

Figure 7. Solar Inverter Market Revenue (US\$ Mn), 2020 – 2030

Figure 8. Solar Inverter Market Revenue Share, By Function (2022 and 2030)

Figure 9. String: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 10. Micro: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 11. Central: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 12. Solar Inverter Market Revenue Share, By Phase (2022 and 2030)

Figure 13. Single Phase: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 14. Three Phase: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 15. Solar Inverter Market Revenue Share, By Connectivity (2022 and 2030)

Figure 16. Standalone: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 17. On-Grid: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 18. Solar Inverter Market Revenue Share, By Capacity (2022 and 2030)

Figure 19. Below 5 kW: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 20. 5-15 kW: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 21. -25 kW: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 22. -50 kW: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 23. Above 50 kW: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 24. Solar Inverter Market Revenue Share, By Application (2022 and 2030)

Figure 25. Residential and Community: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 26. Commercial and Industrial: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 27. Utility: Solar Inverter Market Revenue and Forecast to 2030 (US\$ Million)

Figure 28. Company Positioning & Concentration

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