REFERENCE CODE **GDAE1097MAR** | PUBLICATION DATE **MARCH 2015**

GlobalData

SOLAR PV INVERTER MARKET, UPDATE 2015 – SEGMENTATION, MARKET SIZE, COMPETITIVE LANDSCAPE, AND ANALYSIS TO 2020

Executive Summary

Global Solar Inverter Market Size Estimated at $5.7 Billion in 2014

The global solar Photovoltaic (PV) inverter market's size decreased from $XX billion in 2010 to an estimated $XX billion in 2014, at a negative Compound Annual Growth Rate (CAGR) of XX%. The market size is supported by strong growth in the solar PV industry in the major PV markets in Europe and the emerging markets in Asia-Pacific and North America. Although the annual addition of solar PV systems is increasing globally every year, falling inverter prices have reduced the market size. Prices are expected to fall by XX–XX% in the forecast period to reach $XX per Watt (W) by 2020, which will cause the market size to drop to around $XX billion by 2020.

European PV Inverter Manufacturers Dominate the Global Market

Germany-based SMA Solar Technology is the largest PV inverter manufacturer in the world, with a production share of XX% in 2013 and an estimated share of XX–XX% in 2014. ABB was the second largest manufacturer after SMA Solar with a share of around XX% in 2013. The company is estimate to account for a decreased share of XX–XX% due to lower installations in European region which is its major market. Sungrow, the third largest company in 2013, increased its market share and is estimated to hold XX–XX% of the global market in 2014. TBEA, another Chinese major solar PV inverter manufacturer, emerged as the fourth largest PV inverter manufacturer, with production of more than XX Gigawatts (GW) in 2014. Advanced Energy and Omron are the other major solar PV inverter manufacturers. Of the top XX solar PV manufacturers in the world, XX are headquartered in Europe, while five are based in North America and Asia-Pacific.

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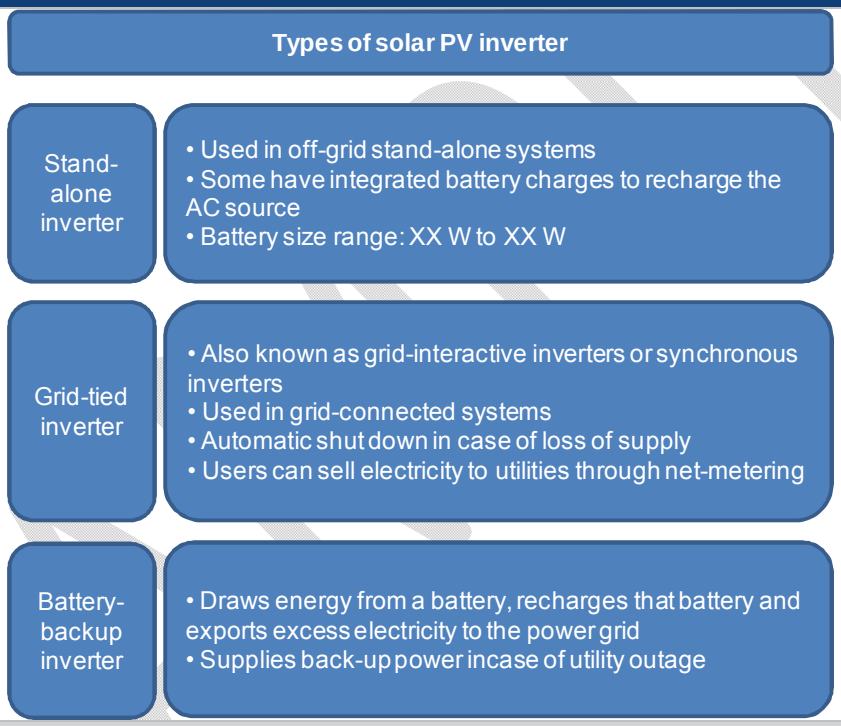
2 Introduction

2.1 Technology Definition

A solar inverter is an electrical inverter that converts Direct Current (DC) electricity generated from solar Photovoltaic (PV) panels into Alternating Current (AC) to facilitate both grid connectivity and use with appliances. There are three main types of solar PV inverters, as outlined in the following figure.

Figure 1: Solar PV Market, Global, Types of Solar PV Inverters



Source: GlobalData

Introduction

2.5 Report Guidance

The report begins with an executive summary, which gives a snapshot of the key points in the global PV inverters market.

The Introduction section discusses solar PV inverter technology, areas of application of solar PV inverters, benefits of inverters and cost break-down of solar PV system.

The Solar PV Inverter Market, Global section provides an overview of the PV power market, segmentation of solar PV capacity (2012–2014), average inverter price per W (2010–2020), market size estimates (2010–2020) based on annual installations, market share of key companies in 2013, and estimates in 2014.

The global section is followed by country-based sections on the solar PV inverter market. These sections cover six major solar PV countries: the US, China, Japan, India, Germany and Italy. Each of the sections presents a solar PV market overview of the country, which is followed by a section on solar PV installed capacity (2010–2020). The country sections also discuss the segmentation of solar PV capacity (2013–2014), the average price and market size of inverters (2010–2020), the company profiles of solar PV inverter companies in the country, and regulations impacting the solar PV market in that country.

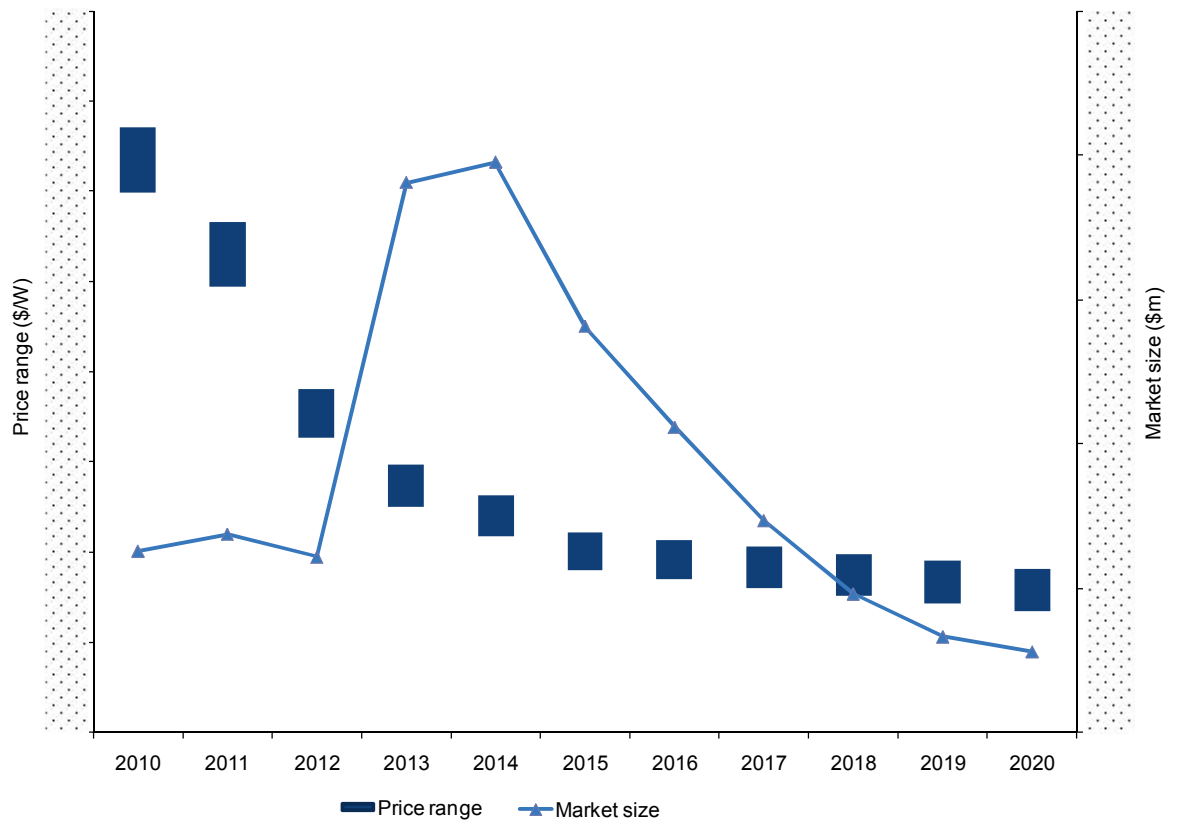
Solar PV Inverter Market, Japan, 2001–2025

6.4 Solar PV Inverter Market, Japan, Price Range and Market Size, 2010–2020

The average PV inverter price in Japan in 2014 was $XX per W. The average price declined by XX% from $XX per W in 2010 to the current price level. There will be a further fall in the PV inverter market in the forecast period, as companies will look for low-cost alternatives to reduce prices. Further, price pressure from related PV components will reduce costs of PV inverters to reach grid parity in the forecast period. Solar PV inverters in Japan are a matured technology.

The solar PV inverter market in Japan increased from $XXm in 2010 to around $XX billion in 2014. The increase in the grid-connected inverters market can be attributed to the implementation of the FiT laws by the utilities to meet their quota obligations.

Figure 18: Solar PV Inverter Market, Japan, Price Range ($/W) and Market Size ($m), 2010–2020



Source: GlobalData, Power Database [Accessed on February 2, 2015]

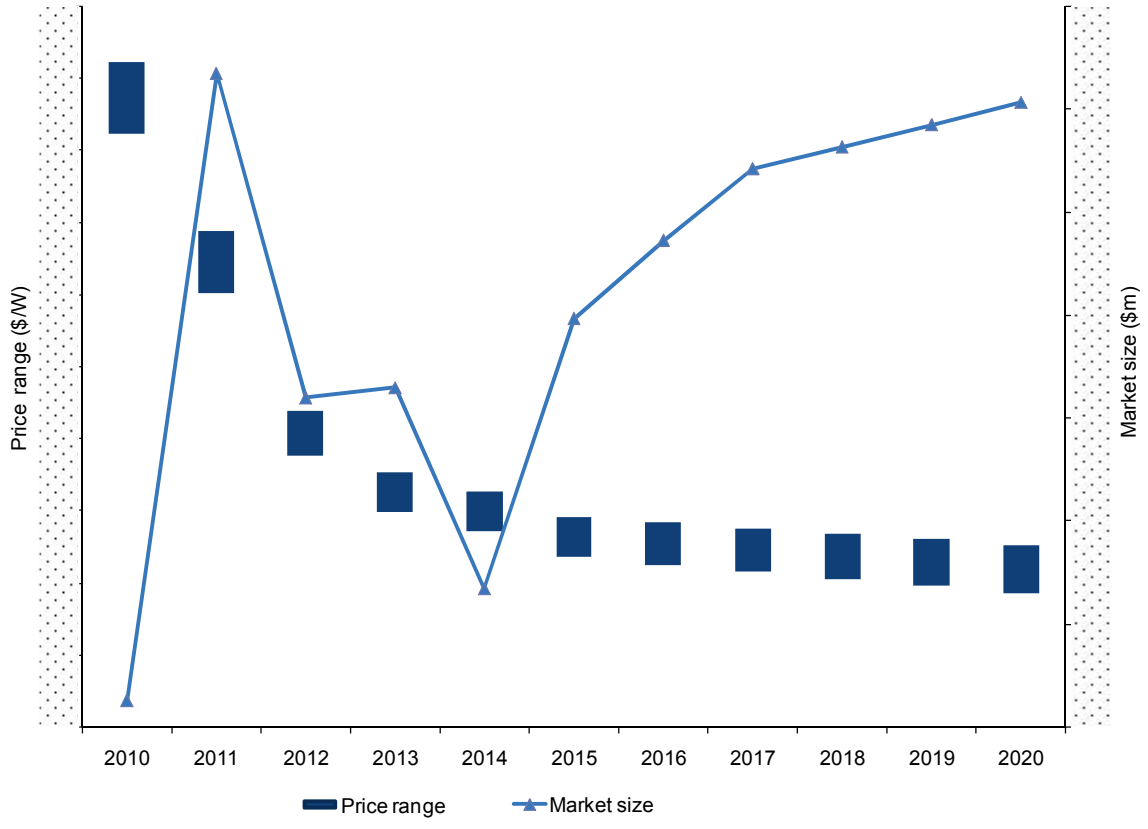
Solar PV Inverter Market, India, 2001–2025

7.4 Solar PV Inverter Market, India, Price Range and Market Size, 2010–2020

The average PV inverter price in India in 2014 was $XX per W, down XX% from $XX per W in 2010 to the current price level. The price will continue to fall as there will be an increase in competition for inverter manufacturers, due to an increase in demand. With increasing pressure from installers to reduce costs to reach grid parity, it is expected that PV inverter prices will further fall to $XX per W by 2020.

The solar PV inverter market in India increased from $XXm in 2010 to around $XXm in 2014. Increasing solar PV module capacity is increasing the market size in the country.

Figure 21: Solar PV Inverter Market, India, Price Range ($/W) and Market Size ($m), 2010–2020



Source: GlobalData, Power Database [Accessed on February 2, 2015]

Solar PV Inverter Market, India, 2001–2025

Table 19: Solar PV Inverter Market, India, Price Range ($/W) and Market Size ($m), 2010–2020		
Year	Price range ($/W)	Market size ($m)
2010		
2011		
2012		
2013		
2014		
2015		
2016		
2017		
2018		
2019		
2020		
Source: GlobalData, Power Database [Accessed on February 2, 2015]		

10 Appendix

10.1 Abbreviations

Table 34: Abbreviations	
Abbreviation	**Expanded form**
AC	Alternate Current
BIPV	Building-Integrated Photovoltaics
BoS	Balance of System
CAGR	Compound Annual Growth Rate
CERC	Central Electricity Regulatory Commission
DC	Direct current
EEG	Erneuerbare Energien Gesetz
EPC	Engineering, Procurement and Construction
FiT	Feed-in Tariff
FY	Fiscal Year
GBI	Generation-Based Incentive
GW	Gigawatt
ITC	Investment Tax Credit
JNNSM	Jawaharlal Nehru National Solar Mission
kW	kilowatt
kWh	kilowatt hour
kWp	kilowatt peak
METI	Ministry of Economy, Trade and Industry
MW	Megawatt
NAPCC	National Action Plan on Climate Change
NDRC	National Development and Reform Commission
NEA	National Energy Administration
NSM	National Solar Mission
NVVN	NTPC Vidyut Vyapar Nigam
PPA	Power Purchase Agreement
PTC	Production Tax Credit
PV	Photovoltaic
RPS	Renewable Portfolio Standards
SAI	Solar America Initiative
SEIAC	Solar Energy Industry Advisory Council
UPS	Uninterruptible power supplies
V	Volts
W	Watt
Source: GlobalData	

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10.3 Definitions

10.3.1 Power

Power refers to the rate of production, transfer or energy use, usually related to electricity. It is measured in Watts (W) and often expressed in kilowatts (kW) or Megawatts (MW). It is also known as real power or active power.

10.3.2 Installed Capacity

Installed capacity refers to the generator's nameplate capacity as stated by the manufacturer, or the maximum rated output of a generator under given conditions. It is given in Megawatts (MW) on a nameplate affixed to the generator.

10.3.3 Electricity Generation

Electricity generation refers to the process of generating electricity from other forms of energy. It also refers to the amount of electricity produced, expressed in Gigawatt hours (GWh).

10.3.4 Renewable Energy Resources

Renewable energy resources are those that provide energy that is naturally replenished but limited in the amount of energy available per unit of time. Biomass, geothermal, solar, small hydro and wind are examples of renewable resources.

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10.3.5 Inverter Prices

Inverter price range is based on inverters used in residential, commercial and utility solar PV systems. Higher value in the range is an average of residential-scale solar PV inverter prices and lower value is average of utility-scale solar PV inverter prices.

10.3.6 Market Segmentation

Solar PV market segmentation is categorization of solar PV systems installed based on the intended used of installation.

10.4 Methodology

GlobalData's dedicated research and analysis teams consist of experienced professionals with advanced statistical expertise and marketing, market research and consulting backgrounds in the energy industry.

GlobalData adheres to the codes of practice of the Market Research Society (www.mrs.org.uk) and Strategic and Competitive Intelligence Professionals (www.scip.org).

All of GlobalData's databases are continuously updated and revised. The following methodology has been followed for the collection and presentation of data presented in this report.

10.4.1 Coverage

The objective of updating GlobalData's coverage is to ensure that it represents the most up-to-date vision of the industry possible.

Changes to the industry taxonomy are built on the basis of extensive research of company, association and competitor sources.

Company coverage is based on three key factors: market capitalization; revenues; and media attention and innovation and market potential.

An exhaustive search of 56 member exchanges is conducted and companies are prioritized on the basis of their market capitalization.

The estimated revenues of all major companies, including private and governmental, are gathered and used to prioritize coverage.

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Companies that are making the news, or that are of particular interest due to their innovative approach, are prioritized.

GlobalData aims to cover all major news events and deals in the alternative energy industry, updated on a daily basis.

10.4.2 Secondary Research

The research process begins with extensive secondary research using GlobalData's proprietary databases and external sources.

The secondary research sources that are typically referred to include, but are not limited to:

- Company websites, annual reports, financial reports, broker reports, investor presentations and SEC filings
- Industry trade journals and other literature
- Proprietary and external databases
- National government documents, statistical databases and market reports
- News articles, press releases and web-casts specific to the companies operating in the market

10.4.3 Primary Research

GlobalData conducts extensive primary interviews with industry participants and commentators in order to validate its data and analysis. A typical research interview fulfills the following functions:

- Obtains the interviewee's perspective on the market size, growth trends, competitive landscape and future outlook
- Validates and strengthens secondary research findings
- Further develops the analysis team's expertise and market understanding

Primary research involves e-mail interactions, telephone interviews and face-to-face interviews for each market, category, segment and sub-segment across geographies.

The participants who typically take part in such a process include, but are not limited to:

- Industry participants: CEOs, VPs, business development managers, market intelligence managers and national sales managers

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- Outside experts: investment bankers, valuation experts, research analysts and key opinion leaders specializing in alternative energy industry

10.4.4 Modeling and Forecasting

In-house models are used to forecast data and in the event of data gaps. Historical data and the analysis of trends within it form the basis of all forecasting methodology. A range of qualitative and quantitative factors are taken into account to estimate future growth. The forecast data are validated by industry experts and in a back-of-envelope test.

10.5 Disclaimer