

# **Microgrid Market by Offering (Hardware- Power Generation & Energy Storage System, Software, and Service), Connectivity (Grid Connected and Remote/ Island), Grid Type (AC, DC, and Hybrid Microgrid), Vertical & Geography - Global Forecast to 2022**

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## **Abstracts**

“The microgrid market is likely to grow at a CAGR of 12.45% between 2016 and 2022”

The microgrid market was valued at USD 16.58 billion in 2015 and is expected to reach USD 38.99 billion by 2022, at a CAGR of 12.45% during the forecast period. The market growth can be attributed to several factors such as growing demand for automated grid system and enhancement in microgrid connectivity through integration of IoT. The major restraints for the microgrid market are the high initial cost of installation and land acquisition and registration complications for solar PV installation in rural areas.

“The market for healthcare is expected to grow at a high rate during the forecast period”

Hospitals are an essential facility leveraging the advantages of the microgrid. The microgrid system provides significant economic and environmental benefits to the most advanced healthcare facilities. It has the ability to optimize the energy consumption for any type of facility, and this brings particular value to public facilities such as hospitals, which use mass quantities of power to maintain daily operations without risking an outage. The increasing need for uninterrupted power supply in the healthcare vertical is the key factor contributing to the growth of this market.

“The market in APAC is expected to grow at the highest rate during the forecast period”

Rise in microgrid installations in Africa and APAC for rural electrification projects and rapidly growing mining vertical in the Indian market, along with investments made by both national and international companies such as ABB, Siemens, GE, and Schneider Electric, are some of the key factors contributing to the growth of the microgrid market in APAC. The countries considered in APAC are China, Japan, India, Australia, and Rest of APAC. The Americas holds the largest share of the microgrid market as there is strong support for microgrid development from the U.S. and Canadian governments. Additionally, many big players and the start-ups in this region are investing more for technological enhancement of microgrid.

Breakdown of primary participants' profile by different parameters:

By Company Type: Tier 1—50%, Tier 2—33%, and Tier 3—17%

By Designation: C Level—50%, Director Level—33%, and Others—17%

By Region: Americas—67%, Europe—16%, and APAC—17%

The key players operating in this market are ABB Ltd. (Switzerland), General Electric (U.S.), Eaton Corporation PLC (Ireland), Siemens AG (Germany), Exelon Corporation (U.S.), Schneider Electric (France), Caterpillar Inc. (U.S.), Power Analytics Corporation (U.S.), HOMER Energy LLC (U.S.), and S&C Electric Company (U.S.).

Research Coverage:

In this report, various segments such as offering, connectivity, grid type, vertical, and geography have been covered. The report also discusses the drivers, restraints, opportunities, and challenges for the market. It gives a detailed view of the market across four main regions: the Americas, Europe, APAC, and RoW. Porter's five forces analysis has been included in the report, along with the description of each force and its impact on the market.

Reasons to Buy the Report:

This report includes the statistics pertaining to the microgrid market in terms of offering, connectivity, grid type, vertical, and geography, along with their respective market size (in terms of value for the hardware segment).

Porter's five forces analysis, value chain analysis, and key strategies adopted by the market players have been provided for the microgrid market.

Major drivers, restraints, opportunities, and challenges for the microgrid market have been provided in detail in this report.

The report includes illustrative segmentation, analysis, and forecast for the microgrid market based on its segments and subsegments.

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## About

Microgrids are distributed, small-scale versions of the centralized conventional grid systems. A microgrid's distinguishing feature is its ability, to separate and isolate itself from the utility grid (macrogrid) seamlessly with little or no disruption to the loads within the system, and automatically reconnect as and when required.

The word Microgrid has been around in the energy industry for quite some time; however, the market has just begun witnessing its large projects and widespread adoption. There has been a significant increase of microgrid-based electricity supply, which is primarily due to the execution of several microgrid projects across the world. The market is set to grow at a double digit CAGR from 2014 to 2022 to reach a total installed capacity of microgrid over 14.9GW. Major growth drivers are aging energy infrastructure, vulnerability of energy infrastructure to cyber threats, growing energy demand, need for reliable and secure power, and incentives and stimuli from various governments.

Amongst the generation source, diesel gensets and fuel cells constitute the largest segment of the microgrid installed capacity as of 2013. While market for PV, CHP, wind, and other renewable sources based microgrid is likely to grow and will constitute more than XX% of the total generation capacity by 2022.

For all the benefits that microgrid delivers, scale, technology, and power sources prove to be limiting factors for efficient and secure power surety. Despite the heightened interest, investment, and technology developments, there are still significant technological barriers.

Despite technical immaturity, utility reluctance, and absence of clear cut revenue structure, the future for microgrids looks promising. The market presents an opportunity for small and big utility players, industrial and residential communities that could leverage microgrids to optimize their energy costs with an added advantage of selling energy back to the grid during periods of peak demand.

The off-Grid microgrid is likely to grow at a higher rate for next five years, while the hybrid microgrid is expected to consolidate its growth and emerge as the market with a highest growth rate. Due to benefits such as no access to the utility grid and being energy self-sufficient, off-grid solar systems can be cheaper than extending power lines in certain remote areas. These benefits make off-grids an attractive option for single-



owner campus environments, commercial areas, and defense bases.

In this report, the global microgrid market is broadly segmented into campus/institutional, defense and military, commercial, and others. The campus based microgrid has the highest market share of XX% as of 2013; however, the commercial segment is forecast to continue growing at the highest CAGR of XX% from 2014 to 2022. The campus/institutional sector comprising universities, government buildings, and research institutions is the prime segment in the global microgrid market. Government facilities that serve health and public safety functions require extremely high energy reliability that microgrids can provide.

Similarly, research and educational institutions require microgrids to protect equipment during power fluctuations. This segment will always provide opportunities for the microgrid market either in present year and the future years. The second most attractive opportunity for the microgrid market can be from the commercial segment, as the segment is expected to witness more demand in the coming years due to increasing use of microgrids in oil and gas plants, automotive factories, and paper mills.

North America (comprising the U.S. and Canada) has the largest installed capacity while APAC region is forecast to grow at a higher rate. In countries such as China and India, remote and rural regions still confront power supply issues and high expenses inhibit the expansion of electrical grids in these countries. These countries are dedicated to renewable energy expansion and have completed many microgrid projects, with a number of them underway.

The market size of Asia-Pacific when compared in terms of value is expected to grow at the highest rate in the next eight years, at a CAGR of XX%. The growth of the microgrid market in the Asia-Pacific region is propelled by factors such as government incentives for energy efficiency and the large scale infrastructure development in this region.

The competitive landscape of the market presents a very interesting picture, where a large number of small players have become a force to reckon with. Big players including the utility and software giants are venturing into the market and have earned big projects. Some of the key players in the microgrid market include ZBB Energy Corporation (U.S.), Chevron Energy (U.S.), Siemens AG (Germany), Echelon Corporation (U.S.), Mera Gao Power (India), Spirae Inc. (U.S.), GE Energy (U.S.), ABB Limited (Switzerland), Power Analytics Corporation (U.S.), Virdity Energy (U.S.), Pareto Energy, Ltd. (U.S.), and Microgrid Energy, LLC (U.S.) among others.



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