

Global Smart Grid IT Systems Market Size Study, by Application (EMS, DMS, OMS, Data Analytics), by End-user (Residential, Commercial, Industrial), and Regional Forecasts 2022-2032

<https://marketpublishers.com/r/G3E2E3B2B49BEN.html>

Date: August 2024

Pages: 200

Price: US\$ 4,950.00 (Single User License)

ID: G3E2E3B2B49BEN

Abstracts

Global Smart Grid IT Systems Market is valued at approximately USD 34.76 billion in 2023 and is anticipated to grow with a healthy growth rate of more than 22.07% over the forecast period 2024-2032. Smart Grid IT Systems form the digital backbone of contemporary power grids, leveraging advanced technologies such as sensors, communication networks, and data analytics to optimize electricity generation, distribution, and consumption. These systems enhance the efficiency, reliability, and sustainability of power grids while empowering consumers to manage their energy usage intelligently. The escalating demand for energy and cost efficiency, driven by the rapid adoption of smart grid technology and stringent governmental regulations aimed at curbing carbon emissions, serves as a key driver for the market. However, challenges such as the absence of standardization could hinder market expansion. Despite these challenges, industry players are proactively addressing opportunities presented by the increasing utilization of smart devices and applications, which are expected to drive further market growth. By capitalizing on these opportunities, stakeholders aim to overcome existing obstacles and leverage emerging trends, thereby propelling the market forward. This proactive approach towards innovation and adaptation underscores the resilience and dynamism of the market, positioning it for sustained growth amidst evolving consumer needs and regulatory landscapes.

The smart grid industry is revolutionizing electrical power management with advanced technologies like wind turbines, solar power systems, and superconducting cables, promoting sustainability and reducing reliance on traditional fossil fuels. Intelligent appliances and smart power meters optimize energy consumption and enhance power quality across electrical networks. Smart substations and protective management

systems ensure reliability amidst challenges such as security concerns and population growth. The integration of digital communication technologies and the Internet of Things (IoT) in smart grid meters and transmission networks enables real-time monitoring and efficient grid operation. Addressing aging grid infrastructure is critical for utility service providers and technology companies to meet the demands of smart cities, thereby enhancing grid resilience and supporting sustainable development goals.

Key market drivers include the growing demand for energy and cost-efficiency, driven by the expanding global population and rising energy demand. Utility companies are increasingly adopting smart grid IT systems to boost operational and overall cost efficiency. Smart grid IT systems offer numerous benefits, including improving product quality through real-time monitoring and communication, providing cost-efficient options, and reducing power consumption. These systems enable the integration of different independent systems into a single platform, greatly increasing operational efficiency and reducing overall costs, driving market growth during the forecast period.

A significant market trend is the growing use of smart devices and applications by utility companies. Utilities can easily and quickly prevent, recognize, and fix grid-related issues due to the extensive deployment of communication devices. These connected devices support advanced distribution network applications such as isolation and service restoration, conservation voltage reduction (CVR), fault location, and DER management. The rapid spread of smart devices and applications enables flexibility in communication within the infrastructure, supporting dynamic optimization at the grid edge, improved restorative capabilities for prompt outage management, and proper service coordination between utilities and third-party providers. This trend increases the demand for smart grid IT systems and expands their scope of applications, driving global market growth.

Europe's power market is characterized by a high level of supply, with companies effectively meeting the population's needs. Unlike APAC nations, where power losses during transmission can reach approximately 20%, European Union (EU) countries have managed to keep transmission losses to a lower level. Smart grid initiatives in Europe are anticipated to be influenced by climate change policies, such as The Paris Climate Agreement, which aims to reduce carbon emissions in the region. The need to minimize the carbon footprint and ensure a smooth transition to renewable energy sources is expected to drive market growth in Europe during the forecast period.

A major market challenge is the lack of standardization, which impedes market growth. The gap between the interoperability of different power systems has grown due to the general lack of standardization within grid networks. The integration of various interconnected systems within smart grids widens the gap between networking systems, affecting overall grid functionality. Utilities face significant challenges in implementing

security standards across different networking systems, and the disparities in standards lead to a significant mismatch in system compatibilities, restraining the global market for smart grid IT systems.

The key regions considered for the global Smart Grid IT Systems Market study include Asia Pacific, North America, Europe, Latin America, and Rest of the World. Europe is expected to dominate the market due to its strong regulatory framework, ambitious climate goals, and well-established infrastructure for smart grid technology. The region's commitment to reducing carbon emissions and transitioning to renewable energy sources drives the adoption of smart grid IT systems. Meanwhile, the Asia-Pacific region is expected to experience the fastest growth due to increasing urbanization, industrial expansion, and investments in smart grid infrastructure.s

The major players operating in the global smart grid IT systems market include:

Cisco Systems Inc.

Siemens AG

Honeywell International Inc.

International Business Machines Corp.

Itron Inc.

Eaton Corp. Plc

ENEL X srl

Globema SP Z O O

Oracle Corp.

SAP SE

TANTALUS SYSTEM HOLDING INC.

Tech Mahindra Ltd.

The detailed segments and sub-segment of the market are explained below:

By Application:

- EMS (Energy Management Systems)
- DMS (Distribution Management Systems)
- OMS (Outage Management Systems)
- Data Analytics

By End-user:

- Residential
- Commercial
- Industrial

By Region:

- North America
 - o U.S.
 - o Canada

- Europe
 - o UK
 - o Germany
 - o France
 - o Spain
 - o Italy
 - o ROE
- Asia Pacific
 - o China
 - o India
 - o Japan
 - o Australia
 - o South Korea
 - o RoAPAC
- Latin America
 - o Brazil
 - o Mexico
 - o RoLA
- Middle East & Africa
 - o Saudi Arabia
 - o South Africa
 - o RoMEA

Years considered for the study are as follows:

- Historical year – 2022
- Base year – 2023
- Forecast period – 2024 to 2032

Key Takeaways:

- Market Estimates & Forecast for 10 years from 2022 to 2032.
- Annualized revenues and regional level analysis for each market segment.
- Detailed analysis of geographical landscape with country-level analysis of major regions.
- Competitive landscape with information on major players in the market.
- Analysis of key business strategies and recommendations on future market approach.
- Analysis of the competitive structure of the market.
- Demand side and supply side analysis of the market.

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