

Switchgear Monitoring Systems Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028F By Component (Hardware and Software), By Type (Gas-Insulated Switchgear and Air-Insulated Switchgear), By Voltage (High Voltage and Medium Voltage), By End User (Utilities, Industries, Commercial, Others), By Region, Competition

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Abstracts

The Global Switchgear Monitoring Systems Market is predicted to grow during the forecast period. The need for efficient power distribution, rapid urbanization, and industrialization directly enhances the demand for continuous power supply. Rising investment in power transmission and distribution infrastructure, among others, are driving factors that are likely to propel the switchgear monitoring systems market in the upcoming years across the globe.

Switchgear refers to the electrical equipment used to regulate, control, and protect power distribution systems. It includes various components such as circuit breakers, switches, fuses, and relays, among others. Switchgear is commonly used in industries, commercial buildings, and utility substations to ensure the safe and reliable distribution of electrical power. Switchgear monitoring systems are designed to continuously monitor the performance and condition of switchgear components to detect abnormalities, prevent failures, and optimize maintenance activities.

Switchgear monitoring systems help ensure the uninterrupted operation of power distribution networks by detecting faults and failures in switchgear components and enabling timely maintenance, thereby enhancing the reliability of power supply. Effective maintenance strategies are crucial for preventing equipment failures and minimizing



downtime. Additionally, the rising adoption of smart grid technologies across countries increases the demand for switchgear monitoring in the upcoming years. The increasing adoption of smart grid technologies, such as advanced metering infrastructure (AMI), distribution automation, and renewable energy integration, is driving the demand for switchgear monitoring systems. Smart grids require real-time monitoring and control of power distribution networks to optimize the generation, distribution, and consumption of electricity. Switchgear monitoring systems provide critical data and insights for smart grid management, helping utilities achieve efficient and sustainable power distribution.

Growth Factors:

Increasing demand for reliable power supply:

The demand for electricity from various end-use sectors, such as residential, commercial, industrial, utilities sectors, raises the demand for reliable power supply. For instance, in the Asia-Pacific region, specifically in India, the government allocated USD885 million under the Union Budget 2023-24, for the solar power sector, including grid, off-grid, and PM-KUSUM projects, to enhance the power supply across the country. Additionally, in January 2023, the President of India dedicated a transmission system built by Powergrid for 8.9 GW of solar power in Rajasthan, leading to a rise in the demand for power supply. Moreover, Russia's defense spending amounted to USD1500 billion in January 2023 and USD10.25 billion in February 2023 where Russia needs to set up a new Research & development plant, new army base camp, among others. Therefore, the demand for power supply is expected to rise. Hence, the market for switchgear monitoring systems is expected to boost during 2024-2028.

There is a need for effective maintenance strategies. Switchgear components are exposed to various operating voltages, environmental factors, and aging effects that can cause failures and interruptions. Effective maintenance strategies are critical in preventing equipment breakdowns and minimizing downtime. Switchgear monitoring systems provide real-time condition monitoring information, predictive maintenance alerts, and performance analysis to enable proactive maintenance planning, reduce maintenance costs, and improve equipment reliability.

There is a rising adoption of smart grid technologies. The increasing adoption of smart grid technologies, such as advanced metering infrastructure (AMI), the modernization of the electric grid, distribution automation, and renewable energy integration, are driving the demand for switchgear monitoring systems. Smart grids require real-time monitoring



and control of power distribution networks to optimize the generation, distribution, and consumption of electricity. Switchgear monitoring systems provide critical data and insights for smart grid management, helping utilities achieve efficient and sustainable power distribution. In North America, countries are focusing on modernizing their grid technologies to enhance the continuous supply of electricity in the nation. For instance, in November 2022, the US government invested around USD13 billion to expand and modernize the electric grid across the country.

Investment in Renewable Energy

The Global Switchgear Monitoring Systems Market is anticipated to improve due to increasing investments in developing renewable energy sources and favorable government laws and subsidies to support new technology. There are various countries including the United States, Canada, India, China, Saudi Arabia, Australia, Mexico among others rising their investment in the renewable energy industry and focusing on clean energy & declining carbon emissions by the end of 2050, as per the Paris Agreement. For instance,

In September 2021, the United States government passed a bill worth USD550 billion, a big investment in clean energy, including USD73 billion allotted for clean energy generation and USD 7.5 billion for electric vehicles, among others. The aim is to enhance the clean energy landscape in the country. Furthermore, according to the American Clean Power Association (ACPA), 26 GW of clean energy projects were completed in the previous year.

In April 2022, in Canada, the Ministry of Northern Affairs and Ministry of Indigenous Services invested USD 300 million in clean energy projects in indigenous, rural, and remote communities across the country. These initiatives help create employment and produce dependable power for future generations while reducing the usage of fossil fuels to keep the air and land clean.

In May 2022, the UAE invested approximately USD160 billion in clean and renewable energy over the next three decades to achieve net zero.

In October 2022, the Qatar Investment Authority invested USD2.43 billion in Germany's largest power producer, RWE AG, to help it buy US firm Con Edison Inc's Clean Energy Businesses subsidiary for USD 6.8 billion.



Challenges:

Switchgears separate electrical circuits from the power supply to enable safe maintenance activities or fault removal. The implementation costs of switchgear monitoring systems also include personnel training, IT testing, project management, software integration, and software licensing fees. Thus, a substantial investment in hardware and software is required for the complete installation of switchgear monitoring systems. Additionally, significant investment is needed to replace the currently outdated grid infrastructure and implement a completely new system using the same combination of hardware and software. Furthermore, an advanced grid communication network is necessary, which is still unavailable for many utilities. Therefore, many utilities in developed nations are hesitant to adopt switchgear monitoring systems.

Market Segmentation

The Global Switchgear Monitoring Systems market is divided into component, type, voltage, end user, region and competitive landscape. Based on component, the market is divided into hardware and software. Based on type, the market is segmented into Gas-Insulated Switchgear (GIS) and Air-Insulated Switchgear (AIS). Based on voltage, the market is segmented into high voltage and medium voltage. Based on end user, the market is segmented into utilities, industries, commercial and others.

Company Profiles

ABB Ltd, Schneider Electric SE, General Electric Company, Siemens AG, Eaton Corporation plc, Mitsubishi Electric Corporation, Emerson Electric Co, Qualitrol Company LLC, PT. Tiara Vibrasindo Pratama and among others are the major players that are driving the growth of the global switchgear monitoring systems market.

Report Scope:

In this report, the global switchgear monitoring systems market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Switchgear Monitoring Systems Market, By Component:

Hardware



Software

Switchgear Monitoring Systems Market, By Type:

Gas-Insulated Switchgear

Air-Insulated Switchgear

Switchgear Monitoring Systems Market, Voltage:

High Voltage

Medium Voltage

Switchgear Monitoring Systems Market, By End User:

Utilities

Industrial

Commercial

Others

Switchgear Monitoring Systems Market, By Region:

Asia-Pacific

China

Japan

India

Australia

South Korea

North America



United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Spain

Italy

Middle East & Africa

Israel

Qatar

Saudi Arabia

UAE

South America

Brazil

Argentina

Colombia

Competitive Landscape



Company Profiles: Detailed analysis of the major companies present in the global switchgear monitoring systems market.

Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).



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