

# **Global Power System Simulator Market Size study & Forecast, by Offering (Hardware, Software, Services), by Modules (Load Flow, Short Circuit, Arc Flash, Device Coordination Selectivity, Harmonics, Others), by End user (Power Generation, Transmission and Distribution, Oil & Gas, Manufacturing, Metals and Mining, Others) and Regional Analysis, 2023-2030**

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## **Abstracts**

Global Power System Simulator Market is valued at approximately USD xx billion in 2022 and is anticipated to grow with a healthy growth rate of more than xx% over the forecast period 2023-2030. A power system simulator is a software tool used to model, simulate, and analyze the behavior of electrical power systems. It is designed to simulate the generation, transmission, and distribution of electric power, including the operation of power plants, substations, transformers, transmission lines, and distribution networks. The Power System Simulator market is expanding because of factors such as the rising demand for electricity and the increase in the number of power plants. These simulators typically incorporate mathematical models that represent the electrical components and their interactions within the power system. They utilize numerical algorithms to solve the complex equations governing the system's behavior and provide simulation results based on different operating conditions and scenarios. Its importance has progressively increased during the forecast period 2023-2030.

Dynamic simulations, which involve modeling the transient behavior of the power system, rely heavily on electrical principles. The simulator uses electricity-related equations and models to study the system's response to dynamic events such as load changes, switching operations, and sudden faults. According to Statista, the world's electricity consumption has continuously grown over the past half a century, reaching

approximately 25,300 terawatt-hours in 2021. Furthermore, by 2040, it is expected that global electricity demand reach around 35.3 petawatt hours. Another important factor that drives the Power System Simulator market is the increasing number of power plants. A power system simulator includes features to analyze simulation results, generate reports, and display performance metrics. This can help operators evaluate the effectiveness of different control strategies or compare the performance of the plant under different scenarios. In addition, as per Statista For the past three decades, coal has been the world's biggest source of energy generation. Coal power generation will exceed 10,000 terawatt-hours by 2022. Natural gas came in second, with over 5,400 terawatt-hours produced that year. Moreover, rising investment from the government for renewable power sources and growing technological advancement in power system simulator are anticipated to create lucrative growth opportunities for the market over the forecast period. However, the high cost associated with power system simulators stifles market growth throughout the forecast period of 2023-2030.

The key regions considered for the Global Power System Simulator Market study includes Asia Pacific, North America, Europe, Latin America, and Middle East & Africa. North America dominated the market in 2022 owing to the investments in renewable energy, metals, and mining industry in the region. Furthermore, Europe is expected to grow significantly during the forecast period, owing to factors such as government incentives for manufacturing industries that would boost the demand for power simulators. European countries are actively investing in grid modernization projects to improve energy efficiency and reliability.

Major market player included in this report are:

Operation Technology, Inc

Neplan AG

PowerWorld Corporation

Eaton Corporation, Inc

Fuji Electric Co., Ltd

The MathWorks, Inc

RTDS Technologies, Inc

Opal-RT Technologies, Inc

ABB Ltd

Siemens AG

Recent Developments in the Market:

In May 2023, BAE Systems, a global power management company, is collaborating with Eaton, a pioneer in electric propulsion, to develop solutions for electric car technology. Through a memorandum of understanding, the companies will initially offer a solution for the medium-duty commercial truck platforms market, with a Class-7 pickup and delivery demonstration vehicle in the works. To deliver a comprehensive EV system for medium-duty trucks, BAE Systems combines its power-dense electric motor and innovative silicon carbide/gallium nitride power electronics suite with Eaton's MD 4-speed EV gearbox. The comprehensive solution, which leverages industry-leading technology, provides original equipment manufacturers with a durable, high-performance, compact, efficient, and optimised system that can function with numerous zero-emission platforms.

Global Power System Simulator Market Report Scope:

Historical Data – 2020 - 2021

Base Year for Estimation – 2022

Forecast period - 2023-2030

Report Coverage - Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Segments Covered - Offering, Modules, End user , Region

Regional Scope - North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope - Free report customization (equivalent up to 8 analyst's working hours) with purchase. Addition or alteration to country, regional & segment scope\*

The objective of the study is to define market sizes of different segments & countries in recent years and to forecast the values to the coming years. The report is designed to incorporate both qualitative and quantitative aspects of the industry within countries involved in the study.

The report also caters detailed information about the crucial aspects such as driving factors & challenges which will define the future growth of the market. Additionally, it also incorporates potential opportunities in micro markets for stakeholders to invest along with the detailed analysis of competitive landscape and product offerings of key players. The detailed segments and sub-segment of the market are explained below:

#### By Offering

Hardware

Software

Services

#### By Modules

Load Flow

Short Circuit

Arc Flash

Device Coordination Selectivity

Harmonics

Others

By End user

Power Generation

Transmission and Distribution

Oil & Gas

Manufacturing

Metals and Mining

Others

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

ROE

Asia Pacific

China

India

Japan

Australia

South Korea

RoAPAC

Latin America

Brazil

Mexico

Middle East & Africa

Saudi Arabia

South Africa

Rest of Middle East & Africa

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