

Flexible AC Transmission Systems Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented, By Compensation Type (Series Compensation, Shunt Compensation, Combined Series-Shunt Compensation), By Controller (Static Synchronous Compensator (STATCOM), Static VAR Compensator (SVC), Unified Power Flow Controller (UPFC), Thyristor Controlled Series Compensator (TCSC), Others), By Industry Vertical (Oil & Gas, Electric Utility, Railways, Others), By Region, By Competition, 2020-2030F

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Abstracts

Market Overview

The Global Flexible AC Transmission Systems (FACTS) Market was valued at USD 1.32 billion in 2024 and is projected to grow at a CAGR of 7.93%, reaching USD 2.11 billion by 2030. FACTS technologies are advanced power electronics-based systems that improve the efficiency, control, and stability of AC transmission networks. These systems allow utilities to optimize existing transmission infrastructure by dynamically managing power flow, voltage, and network stability without compromising reliability. As power demands grow and grids become more complex due to the integration of renewables, FACTS are becoming essential in enabling high-performance transmission networks while minimizing the need for new physical infrastructure.

Key Market Drivers

Increasing Demand for Grid Stability and Reliability Amid Rising Renewable Energy Integration

The rapid expansion of renewable energy sources such as wind and solar is placing increasing stress on global transmission systems due to their intermittent nature. Maintaining grid stability and power quality under these fluctuating conditions is a pressing concern for utilities. FACTS devices—such as Static Var Compensators (SVCs), Static Synchronous Compensators (STATCOMs), and Unified Power Flow Controllers (UPFCs)—offer dynamic reactive power support and voltage regulation in real time. Their ability to mitigate power disturbances and enhance grid reliability makes them a vital solution for accommodating the variability of renewable energy and ensuring consistent power delivery across transmission networks.

Key Market Challenges

High Initial Capital Investment and Cost Sensitivity

A key obstacle in the widespread adoption of FACTS technologies is the significant upfront investment required for system deployment. Devices like SVCs, STATCOMs, and UPFCs demand high costs not only for the equipment itself but also for the associated engineering, installation, and supporting infrastructure. These include complex components such as power converters, reactors, and advanced control systems. For many developing regions with limited funding for power infrastructure upgrades, these financial constraints make traditional alternatives more appealing. The high cost barrier often slows adoption, particularly where short-term solutions are prioritized over long-term grid optimization.

Key Market Trends

Integration of FACTS with Renewable Energy Systems

One of the most notable trends in the FACTS market is the increased incorporation of these technologies into renewable energy projects. As the global energy landscape shifts toward clean energy sources, the variability of wind and solar generation introduces new challenges for maintaining grid stability and power quality. FACTS solutions—such as STATCOMs, SVCs, and series compensation devices—play a crucial role in supporting voltage control, reactive power balance, and efficient energy transfer. Countries including India, China, Germany, and the United States are actively deploying

FACTS in conjunction with large-scale renewables to ensure stable power transmission from remote generation areas to end-users.

Key Market Players

Siemens Energy AG

General Electric (GE) Grid Solutions

Mitsubishi Electric Corporation

ABB Ltd.

Toshiba Energy Systems & Solutions Corporation

NR Electric Co., Ltd.

American Superconductor Corporation (AMSC)

Hyosung Heavy Industries

Rongxin Power Electronic Co., Ltd. (RXPE)

Adani Transmission Limited

Report Scope:

In this report, the Global Flexible AC Transmission Systems Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Flexible AC Transmission Systems Market, By Compensation Type:

Series Compensation

Shunt Compensation

Combined Series-Shunt Compensation

Flexible AC Transmission Systems Market, By Controller:

Static Synchronous Compensator (STATCOM)

Static VAR Compensator (SVC)

Unified Power Flow Controller (UPFC)

Thyristor Controlled Series Compensator (TCSC)

Others

Flexible AC Transmission Systems Market, By Industry Vertical:

Oil & Gas

Electric Utility

Railways

Others

Flexible AC Transmission Systems Market, By Region:

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia-Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Kuwait

Turkey

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the Global Flexible AC Transmission Systems Market.

Available Customizations:

Global Flexible AC Transmission Systems Market report with the given Market data, Tech Sci 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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