



Middle East and Europe Dominated the Global FACTS Market in 2021

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- The FACTS market has gained a lot of traction across the globe in various application verticals, especially in the renewable sector.
- In 2021, utilities awarded 95% of the FACTS projects, focused on incorporating increasing load demand and new interconnections with the electricity grid.
- The majority of FACTS contracts were awarded in the EMEA, followed by APAC and the Americas in 2021.

The FACTS market has gained a lot of traction all across the globe in various application verticals, especially in the renewable sector. The global roll out of renewables at an accelerated pace has exacerbated the stability issues in the grid. This is because conventional power plants in the generation mix are being replaced with intermittent renewable resources, such as solar and wind farms. FACTS devices not only have a crucial role to play in ensuring reliability and stability in grids with a higher penetration of renewables, but are also of importance in the industrial sector, mainly steel industries with electric arc furnaces and industries with induction load applications.

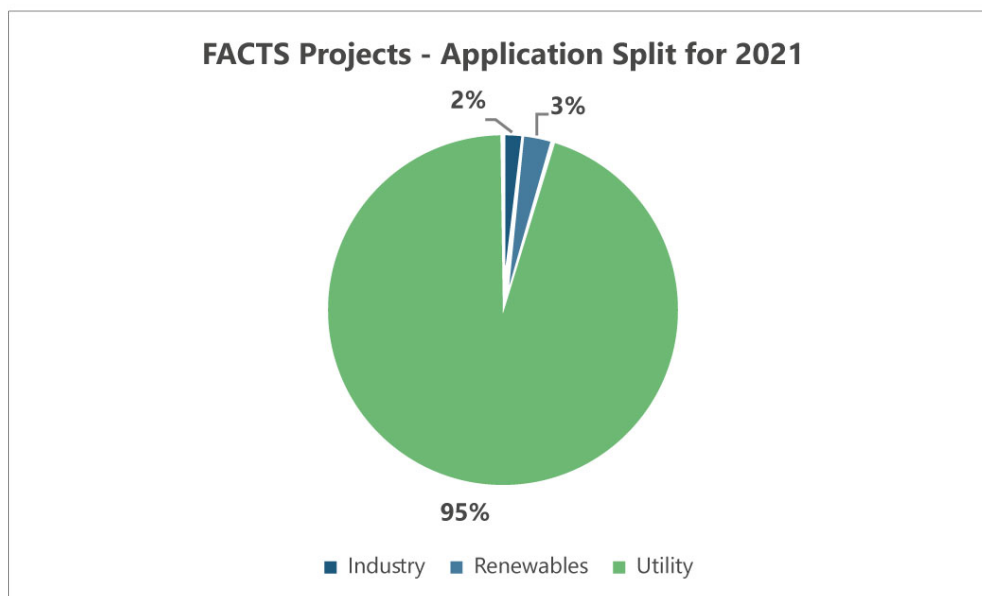


Figure 1: Application split in FACTS projects awarded in 2021.
Source: Power Technology Research

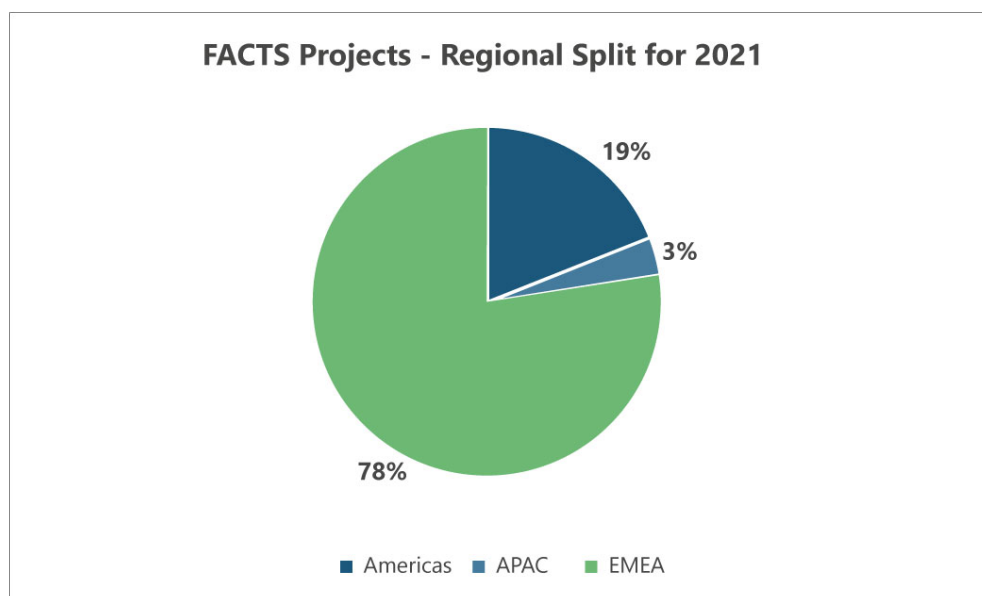


Figure 2: Regional split in FACTS projects awarded in 2021.
Source: Power Technology Research

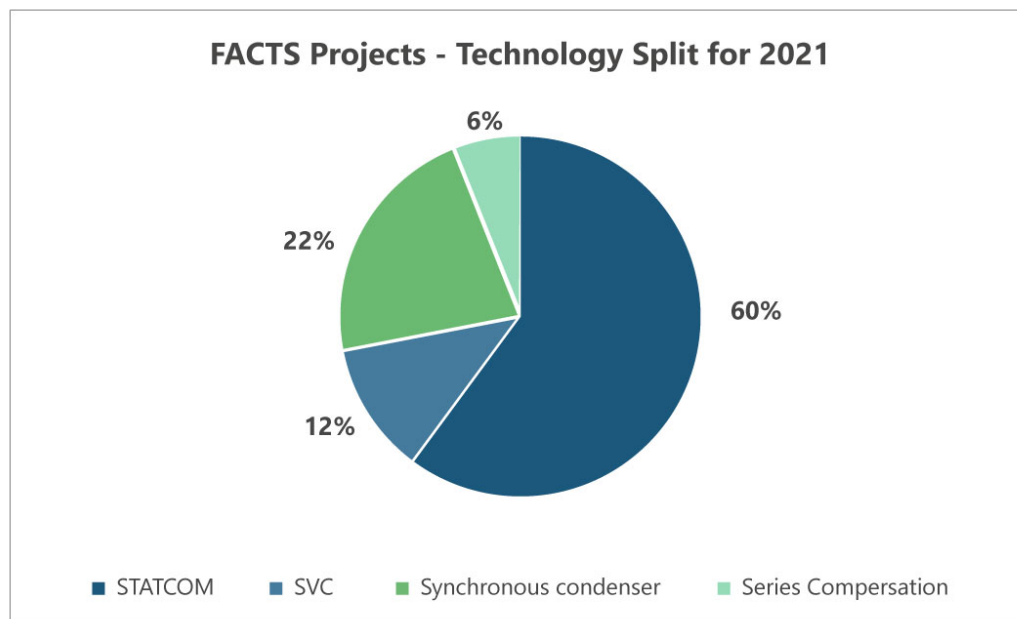


Figure 3: Technology split in FACTS projects awarded in 2021.

Source: Power Technology Research

Overview of the Global FACTS Market in 2021

In 2021, utilities awarded 95% of the FACTS projects, focused on incorporating increasing load demand and new interconnections with the electricity grid. However, FACTS projects for industry and renewables accounted for only 5% collectively. EMEA led the global FACTS market, accounting for nearly 78% of the total FACTS projects awarded in 2021. During the first quarter of 2021, FACTS technologies gained popularity in the Middle East as several project tenders were floated by Saudi Electric Company (SEC). As the year progressed, FACTS tenders that were floated for technologies to support upcoming renewable generation in Europe increased as well. In 2021, the projects awarded accounted for 27,201 Mvar capacity.

With regards to the technological split, STATCOM is the leading technology in the global FACTS market, accounting for 60% of the projects awarded. It is followed by synchronous condensers, accounting for 22% of the projects awarded in 2021. SVCs accounted for 12%, while series compensation-based projects accounted for 6% of the new projects awarded in 2021. It is significant to note that STATCOMs are becoming a preferred choice because of their fast response and reduced harmonic emissions as compared to SVCs.

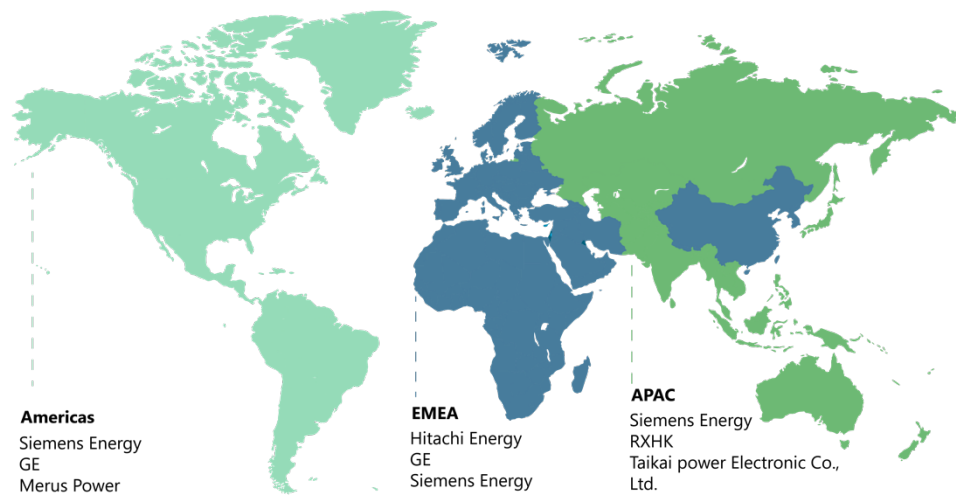


Figure 4: Key suppliers in EMEA, APAC and Americas in terms of projects awarded in 2021.
Source: Power Technology Research

Key FACTS Contracts in 2021

The majority of FACTS contracts were awarded in the EMEA, followed by APAC and the Americas in 2021. Hitachi Energy led the EMEA market, followed by General Electric and Siemens Energy. In the APAC region, most of the contracts were bagged by Siemens Energy, followed by RXHK, Taikai Power Electronic. Similarly, in the Americas, Siemens Energy led the market, in terms of contracts awarded in 2021, followed by General Electric and Merus Power.

EMEA

Siemens was awarded a USD 41.4 Million STATCOM project in Saudi Arabia. It signed an EPC (Engineering, Procurement and Construction) contract to install Dynamic Reactive Power Compensator (DRPC), STATCOM technology at the 380 kV Kudimi Substation, which will provide dynamic stability for induction type loads in the network. Alfanar Construction was awarded a USD 37 Million STATCOM project in 2021. It signed an EPC contract to install DRPC at the existing 380 kV Najran Substation.

SEC awarded an EPC contract to Alfanar for the installation of 20 MVAR STATCOM at the 132/33 kV substations at Amaala. Hitachi Energy was also awarded a contract to install 200Mvar STATCOMs at three 220 kV substations in Bahrain, named new Hidd, new Riffa, and Manama.

Siemens is to deliver the first STATCOM in Sudan, in order to strengthen and stabilize the power grid by providing reactive power compensation and dynamic voltage support. This project is in line with the cross-border interconnection Egypt-Sudan AC Link.

AlGhaiz submitted the lowest bid to SEC for the installation of STATCOM at the switching station in Riyadh. The STATCOM capacity will be 300 Mvar (Capacitive) and -300 Mvar (Inductive) connected at 380 kV.

ABB was awarded a contract by Statkraft for the supply and installation of 67 Mvar synchronous condensers, with 40 tons of flywheels in Liverpool. This project will maintain the network frequency, as well as the voltage stability and reliability of the grid, as the UK national grid will integrate more renewable resources into their system.

APAC

PGCIL (Power Grid Corporation of India) will be installing transmission infrastructure in Rajasthan to connect new solar projects with the main grid. The project also includes the installation of utility STATCOMs to provide DRPC and voltage stability, for integrating solar projects of around 8 GW capacity. This project will be one of the first FACTS devices in India to be utilized for renewable energy integration.

RHXC reported its first STATCOM order from New Zealand's renewable sector. The containerized STATCOM will have a swing range of ± 50 MVAR directly connecting at 33 kV.

Hitachi Energy was able to tap into the Japanese market this year and have recently bagged an order of 60 Hz STATCOM for connecting a wind farm to the main grid. The order has been awarded by Canadian Solar, and Hitachi Energy's STATCOM will enable Canadian Solar to meet local grid code requirements.

Americas

The STATCOM offered by Siemens will be utilized to provide the necessary voltage support in the region, to enable the transmission of renewable energy in bulk. The capacity of this system is ± 200 MVAR, making it one of the largest STATCOM projects in the U.S.. This development is in line with the increasing infiltration of renewable sources such as wind, solar and hydro, which have induced the need for a system that can stabilize the transmission, due to the intermittent nature of renewable energy, from the Mojave Desert to Los Angeles.

AMSC reported orders from the local renewable and industrial sector worth USD 15 Million for power systems, including the supply of AMSC's D-VAR STATCOM system, and AMSC's D-VAR VVO system.

Looking Back

In 2021, the global FACTS market gained a lot of traction, with the EMEA, where an overwhelming majority of the new projects were awarded, leading the market. Within the EMEA region, the majority of the projects were awarded in the Middle East and Europe. These projects were designed for utility applications and the integration of intermittent renewable energy resources, such as solar parks and wind farms, while keeping grid stability and the reliability of the system intact. It is also observed that STATCOM is quite popular to limit voltage deviations and provide reactive power support for renewables and steel furnaces, particularly with electric arc furnaces.

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