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Capacitor Bank Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028FSegmented By Voltage (Low [69 kV]), By Type (Internally Fused, Externally Fused, Fuse Less), By Installation (Open Air Substation, Metal Enclosed Substation, Pole Mounted, Others), By Application (Power Factor Correction, Harmonic Filter, Voltage Regulation, Renewable Integration, Industrial Application, Data Centers, Other), By Region and Competition

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Abstracts

Global Capacitor Bank Market is predicted to proliferate during the forecast period due to the rapid growing investments in the energy sector, especially in developing countries by enterprises to meet the need for growing economies along with the development of more electronic products and electrifications.

The capacitor bank is a component of efficient power transmission systems that reduces the phase difference between the voltage and current to manage and optimize the performance of power distribution. It gives businesses the opportunity to securely link users, programmes, and data spread across several sites while enhancing performance, dependability, and scalability. Additionally, increasing peak load demand, growing grid integration of clean energy sources and refurbishment of existing electricity networks are increasing the demand of Global Capacitor Bank Market.

To compensate for the losses in transmission systems, businesses are increasingly

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utilising capacitor bank applications to provide stable voltage level, reactive power support, and increasing power transfer capability in the power system. Numerous innovations and product launch carried out in capacitor are expected to enhance the features of capacitor bank. This, in turn, is expected to drive market growth during the forecast period.

A physical collection of numerous capacitors with similar characteristics that are linked to one another in series or parallel to create a capacitor bank to store electrical energy is known as a capacitor bank. A capacitor bank is utilized for reactive power compensation and power factor correction in the power substations. The main purposes of capacitor banks are to increase the reliability of the electrical supply and the effectiveness of the power system. The unit of a capacitor bank is typically referred to as a capacitor unit. These units can be produced in a manner like one-phase units.

To create a complete three-phase capacitor bank, these units are mostly coupled in the form of a star/delta connection. The most common capacitor units in the market are of the 1-phase kind, whereas 3-phase capacitor units are rarely produced. Moreover, capacitor banks come in three different configurations: internally fused, externally fused, and fuse less. They are used to improve the operating efficiency of electric power systems and help transmission and distribution systems voltage stability during disturbances and high load conditions. In addition, capacitor banks can be left online continuously to meet the steady state reactive power requirements of the system or can be switched on or off to meet dynamic reactive requirements. These capacitor banks are generally used in nuclear weapons, coilguns, electromagnetic railguns radars, fusion research, pulsed lasers, marx generators, detonators, etc.

Refurbishment of Existing Electricity Networks

An electricity network is one of the biggest, most complicated, and most advanced systems in the world. Electricity networks across the world are obsolete, inefficient, and unable to handle the demands of the twenty-first century. Despite living in industrialized nations, millions of people experience daily power outages of a few hours. The majority of an energy network's components are outside infrastructure, which has contributed to the recent sharp rise in weather-related catastrophic outages.

As electricity networks are the backbone of a secure and reliable power system. Several enterprises and associations are refurbishing the existing electricity networks and infrastructures to overcome the consequences of operational disruption, extended downtime in power system, harmonic-related technical issues and to avoid utility

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penalties. For instance, in October 2022, National Grid has completed the first stage of a USD 162 million project to refurbish the existing overhead line network, 170km of overhead power line between Lincolnshire and Hertfordshire in England and Wales with the second phase completing in 2023. The refurbishment of electricity networks is aiding in replacing and upgrading the capacitor bank enabling the enhancement of energy infrastructures, constantly balancing the power flow between connected consumers and producers to maintain network stability. Therefore, the refurbishment of existing electricity networks is propelling the growth of global capacitor bank market in the forecast period.

Growing Investments in the Energy Sector, Especially in Developing Countries

The energy sector is one of the fastest growing sectors in most of the developing countries like India with manufacturing companies diversifying into the industry to meet a widening demand-supply gap. Enterprises are adopting the various energy strategies to accelerate investment and build resilience whilst tackling affordability and sustainability. The requirement of electricity has proliferated the growth in energy infrastructure through investments by several enterprises to meet the energy demand. This in turn has increased the adoption of several advanced electrical applications such as capacitor bank. However, countries like India still require an investment worth USD 540 billion by 2029 to meet its ambitious targets for electricity generation from renewable sources. Moreover, China has topped the world in clean energy investments, spent around USD 546 billion in 2022 nearly four times the amount of U.S. investments, which totaled USD141 billion including solar and wind energy, electric vehicles, and batteries. For instance, according to International Renewable Energy Agency (IRENA), global investment in energy transition technologies reached a new record of USD 1.3 trillion in 2022. Thus, growing investments in the energy sector, especially in developing countries are driving the growth of Global Capacitor Bank Market in the forecast period.

Increase in Demand for Efficient Power Transmission Systems to ensure Reliable Power Distribution

The need for reliable power distribution has increased the demand of efficient power transmission systems. Electric power transmission systems in the countries mostly comprise of generating units that produce electricity. High voltage transmission lines that transport electricity over long distances require power transmission at high voltage levels from a power plant to a substation. The primary purpose of capacitors is to reduce the maximum demand and maintain the voltage at a certain level. As power losses are proportional to the square of the current. An efficient power transmission

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system requires the capacitors located as close as possible to the load are confined to decrease the load current. This, in turn, will reduce power losses of the system substantially.

Capacitors such as shunt capacitor aids in balancing the power transmission tasks such as low voltage regulation, poor reliability, and power factors efficiently. For instance, according to projections from the U.S. Energy Information Administration (EIA), yearly energy transmission and distribution (T&D) losses in the United States from 2017 to 2021 averaged roughly 5% of the total electricity transferred and delivered. In addition, an effective power transmission requires the integration of capacitor bank to enhance the electrical supply quality and optimize the power systems efficiency. Therefore, increase in demand for efficient power transmission systems to ensure reliable power distribution are attributing the growth of capacitor bank in the global market.

Market Segmentation

The global capacitor bank market is segmented into voltage, type, installation, application. Based on voltage, the market is segmented into low [69 kV]. Based on type, the market is bifurcated into internally fused, externally fused, and fuse less. Based on installation, the market is segmented into open air substation, metal enclosed substation, pole mounted, and others. Based on application, the market is segmented into power factor correction, harmonic filter, voltage regulation, renewable integration, industrial application, data centers, and other. The market analysis studies the regional segmentation divided among North America, Europe, Asia-Pacific, South America, and Middle East & Africa.

Company Profiles

Eaton Corporation plc, Comar Condensatori S.p.A, ABB Ltd., Enerlux Power s.r.l., Hitachi Ltd., Circutor S.A., Siemens Aktiengesellschaft, Toshiba Corporation, Vishay Intertechnology Inc., Alpes technologies Private Limited are among the major players that are driving the growth of the Global Capacitor Bank Market.

Report Scope:

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

Global Capacitor Bank Market, By Voltage:

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Low [69kV)

Global Capacitor Bank Market, By Type:

Internally Fused

Externally Fused

Fuse Less

Global Capacitor Bank Market, By Installation:

Open Air Substation

Metal Enclosed Substation

Pole Mounted

Others

Global Capacitor Bank Market, By Application:

Power Factor Correction

Harmonic Filter

Voltage Regulation

Renewable Integration

Industrial Application

Data Centers

Others

Global Capacitor Bank Market, By Region:

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- Asia-Pacific
  - China
  - Japan
  - India
  - Australia
  - South Korea
- North America
  - United States
  - Canada
  - Mexico
- Europe
  - United Kingdom
  - Germany
  - France
  - Spain
  - Italy
- Middle East & Africa
  - Qatar
  - South Africa
  - Saudi Arabia

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UAE

South America

Brazil

Argentina

Colombia

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the global Capacitor Bank 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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