

Solid State Transformer Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2022-2027

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Abstracts

The global solid state transformer market reached a value of US\$ 163.57 Million in 2021. Looking forward, IMARC Group expects the market to reach a value of US\$ 378.55 Million by 2027, exhibiting a CAGR of 14.60% during 2022-2027. Keeping in mind the uncertainties of COVID-19, we are continuously tracking and evaluating the direct as well as the indirect influence of the pandemic on different end use industries. These insights are included in the report as a major market contributor.

A solid state transformer (SST), also known as a smart transformer, is a modern electrical energy device that offers bi-directional power flow. It is capable of compensating voltage sags and harmonic distortion, interconnecting asynchronous networks, and interfacing direct current (DC) and alternating current (AC) ports. As it can also isolate disturbances from source and load or vice versa and eliminate the use of mechanical actuators or tap changers, SST finds extensive applications in traction/locomotives, electric ships and power grids across the globe.

Solid State Transformer Market Trends:

There is currently an increase in the use of electric vehicles (EVs) around the world on account of the rising environmental awareness among individuals. This, in confluence with the burgeoning energy sector, represents one of the key factors propelling the growth of the market. Moreover, conventional transformers have drawbacks, such as power loss and temperature rise due to harmonics, poor voltage regulation under load, inadequate protection from abnormal currents, and over-voltages. They also lack adequate controllability and have an adverse impact on the environment due to excessive usage of transformer oil. However, SSTs provide a wide range of services to smart grids, including reactive power compensation, power quality improvement, current

limiting, voltage regulation, and power factor correction. Consequently, they have emerged as superior alternatives to conventional transformers worldwide. Apart from this, SSTs help integrate different distributed energy sources into the distribution grid with multiple functionalities. This, coupled with the increasing adoption of renewable energy sources, is augmenting the overall sales and profitability. Other factors, including technological advancements and extensive research and development (R&D) activities financed by key players, are strengthening the growth of the market.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global solid state transformer market, along with forecasts at the global, regional and country level from 2022-2027. Our report has categorized the market based on product, component, voltage level, application and end user.

Breakup by Product:

- Distribution Solid State Transformer
- Power Solid State Transformer
- Traction Solid State Transformer

Breakup by Component:

- Converters
- High-frequency Transformers
- Switches
- Others

Breakup by Voltage Level:

- HV/MV
- MV/LV

Breakup by Application:

- Alternative Power Generation
- Electric Vehicle Charging Stations
- Power Distribution
- Traction Locomotives
- Others

Breakup by End User:

- Energy
- Transportation
- Others

Breakup by Region:

- North America
 - United States
 - Canada
- Asia-Pacific
 - China
 - Japan
 - India
 - South Korea
 - Australia
 - Indonesia
 - Others
- Europe
 - Germany
 - France
 - United Kingdom
 - Italy
 - Spain
 - Russia
 - Others
- Latin America
 - Brazil
 - Mexico
 - Others
- Middle East and Africa

Competitive Landscape:

The competitive landscape of the industry has also been examined along with the profiles of the key players being ABB Ltd., Alstom SA, Eaton Corporation PLC, Electric Research and Manufacturing Cooperative Inc. (ERMCO) (Arkansas Electric Cooperatives Inc.), General Electric Company, Hitachi Ltd., Kirloskar Electric Company

Ltd., Mitsubishi Electric Corporation, Schneider Electric SE, Siemens AG, Synergy Transformers and Vollspark.

Key Questions Answered in This Report:

How has the global solid state transformer market performed so far and how will it perform in the coming years?

What has been the impact of COVID-19 on the global solid state transformer market?

What are the key regional markets?

What is the breakup of the market based on the product?

What is the breakup of the market based on the component?

What is the breakup of the market based on the voltage level?

What is the breakup of the market based on the application?

What is the breakup of the market based on the end user?

What are the various stages in the value chain of the industry?

What are the key driving factors and challenges in the industry?

What is the structure of the global solid state transformer market and who are the key players?

What is the degree of competition in the industry?

Contents

1 PREFACE

2 SCOPE AND METHODOLOGY

- 2.1 Objectives of the Study
- 2.2 Stakeholders
- 2.3 Data Sources
 - 2.3.1 Primary Sources
 - 2.3.2 Secondary Sources
- 2.4 Market Estimation
 - 2.4.1 Bottom-Up Approach
 - 2.4.2 Top-Down Approach
- 2.5 Forecasting Methodology

3 EXECUTIVE SUMMARY

4 INTRODUCTION

- 4.1 Overview
- 4.2 Key Industry Trends

5 GLOBAL SOLID STATE TRANSFORMER MARKET

- 5.1 Market Overview
- 5.2 Market Performance
- 5.3 Impact of COVID-19
- 5.4 Market Forecast

6 MARKET BREAKUP BY PRODUCT

- 6.1 Distribution Solid State Transformer
 - 6.1.1 Market Trends
 - 6.1.2 Market Forecast
- 6.2 Power Solid State Transformer
 - 6.2.1 Market Trends
 - 6.2.2 Market Forecast
- 6.3 Traction Solid State Transformer

- 6.3.1 Market Trends
- 6.3.2 Market Forecast

7 MARKET BREAKUP BY COMPONENT

- 7.1 Converters
 - 7.1.1 Market Trends
 - 7.1.2 Market Forecast
- 7.2 High-frequency Transformers
 - 7.2.1 Market Trends
 - 7.2.2 Market Forecast
- 7.3 Switches
 - 7.3.1 Market Trends
 - 7.3.2 Market Forecast
- 7.4 Others
 - 7.4.1 Market Trends
 - 7.4.2 Market Forecast

8 MARKET BREAKUP BY VOLTAGE LEVEL

- 8.1 HV/MV
 - 8.1.1 Market Trends
 - 8.1.2 Market Forecast
- 8.2 MV/LV
 - 8.2.1 Market Trends
 - 8.2.2 Market Forecast

9 MARKET BREAKUP BY APPLICATION

- 9.1 Alternative Power Generation
 - 9.1.1 Market Trends
 - 9.1.2 Market Forecast
- 9.2 Electric Vehicle Charging Stations
 - 9.2.1 Market Trends
 - 9.2.2 Market Forecast
- 9.3 Power Distribution
 - 9.3.1 Market Trends
 - 9.3.2 Market Forecast
- 9.4 Traction Locomotives

9.4.1 Market Trends

9.4.2 Market Forecast

9.5 Others

9.5.1 Market Trends

9.5.2 Market Forecast

10 MARKET BREAKUP BY END USER

10.1 Energy

10.1.1 Market Trends

10.1.2 Market Forecast

10.2 Transportation

10.2.1 Market Trends

10.2.2 Market Forecast

10.3 Others

10.3.1 Market Trends

10.3.2 Market Forecast

11 MARKET BREAKUP BY REGION

11.1 North America

11.1.1 United States

11.1.1.1 Market Trends

11.1.1.2 Market Forecast

11.1.2 Canada

11.1.2.1 Market Trends

11.1.2.2 Market Forecast

11.2 Asia-Pacific

11.2.1 China

11.2.1.1 Market Trends

11.2.1.2 Market Forecast

11.2.2 Japan

11.2.2.1 Market Trends

11.2.2.2 Market Forecast

11.2.3 India

11.2.3.1 Market Trends

11.2.3.2 Market Forecast

11.2.4 South Korea

11.2.4.1 Market Trends

- 11.2.4.2 Market Forecast
- 11.2.5 Australia
 - 11.2.5.1 Market Trends
 - 11.2.5.2 Market Forecast
- 11.2.6 Indonesia
 - 11.2.6.1 Market Trends
 - 11.2.6.2 Market Forecast
- 11.2.7 Others
 - 11.2.7.1 Market Trends
 - 11.2.7.2 Market Forecast
- 11.3 Europe
 - 11.3.1 Germany
 - 11.3.1.1 Market Trends
 - 11.3.1.2 Market Forecast
 - 11.3.2 France
 - 11.3.2.1 Market Trends
 - 11.3.2.2 Market Forecast
 - 11.3.3 United Kingdom
 - 11.3.3.1 Market Trends
 - 11.3.3.2 Market Forecast
 - 11.3.4 Italy
 - 11.3.4.1 Market Trends
 - 11.3.4.2 Market Forecast
 - 11.3.5 Spain
 - 11.3.5.1 Market Trends
 - 11.3.5.2 Market Forecast
 - 11.3.6 Russia
 - 11.3.6.1 Market Trends
 - 11.3.6.2 Market Forecast
 - 11.3.7 Others
 - 11.3.7.1 Market Trends
 - 11.3.7.2 Market Forecast
- 11.4 Latin America
 - 11.4.1 Brazil
 - 11.4.1.1 Market Trends
 - 11.4.1.2 Market Forecast
 - 11.4.2 Mexico
 - 11.4.2.1 Market Trends
 - 11.4.2.2 Market Forecast

11.4.3 Others

11.4.3.1 Market Trends

11.4.3.2 Market Forecast

11.5 Middle East and Africa

11.5.1 Market Trends

11.5.2 Market Breakup by Country

11.5.3 Market Forecast

12 SWOT ANALYSIS

12.1 Overview

12.2 Strengths

12.3 Weaknesses

12.4 Opportunities

12.5 Threats

13 VALUE CHAIN ANALYSIS

14 PORTERS FIVE FORCES ANALYSIS

14.1 Overview

14.2 Bargaining Power of Buyers

14.3 Bargaining Power of Suppliers

14.4 Degree of Competition

14.5 Threat of New Entrants

14.6 Threat of Substitutes

15 PRICE ANALYSIS

16 COMPETITIVE LANDSCAPE

16.1 Market Structure

16.2 Key Players

16.3 Profiles of Key Players

16.3.1 ABB Ltd.

16.3.1.1 Company Overview

16.3.1.2 Product Portfolio

16.3.1.3 Financials

16.3.1.4 SWOT Analysis

- 16.3.2 Alstom SA
 - 16.3.2.1 Company Overview
 - 16.3.2.2 Product Portfolio
 - 16.3.2.3 Financials
 - 16.3.2.4 SWOT Analysis
- 16.3.3 Eaton Corporation PLC
 - 16.3.3.1 Company Overview
 - 16.3.3.2 Product Portfolio
 - 16.3.3.3 Financials
 - 16.3.3.4 SWOT Analysis
- 16.3.4 Electric Research and Manufacturing Cooperative Inc. (ERMCO) (Arkansas Electric Cooperative Corporation)
 - 16.3.4.1 Company Overview
 - 16.3.4.2 Product Portfolio
- 16.3.5 General Electric Company
 - 16.3.5.1 Company Overview
 - 16.3.5.2 Product Portfolio
 - 16.3.5.3 Financials
 - 16.3.5.4 SWOT Analysis
- 16.3.6 Hitachi Ltd.
 - 16.3.6.1 Company Overview
 - 16.3.6.2 Product Portfolio
 - 16.3.6.3 Financials
 - 16.3.6.4 SWOT Analysis
- 16.3.7 Kirloskar Electric Company Ltd.
 - 16.3.7.1 Company Overview
 - 16.3.7.2 Product Portfolio
 - 16.3.7.3 Financials
 - 16.3.7.4 SWOT Analysis
- 16.3.8 Mitsubishi Electric Corporation
 - 16.3.8.1 Company Overview
 - 16.3.8.2 Product Portfolio
 - 16.3.8.3 Financials
 - 16.3.8.4 SWOT Analysis
- 16.3.9 Schneider Electric SE
 - 16.3.9.1 Company Overview
 - 16.3.9.2 Product Portfolio
 - 16.3.9.3 Financials
 - 16.3.9.4 SWOT Analysis

- 16.3.10 Siemens AG
 - 16.3.10.1 Company Overview
 - 16.3.10.2 Product Portfolio
 - 16.3.10.3 Financials
 - 16.3.10.4 SWOT Analysis
- 16.3.11 Synergy Transformers
 - 16.3.11.1 Company Overview
 - 16.3.11.2 Product Portfolio
- 16.3.12 Vollspark
 - 16.3.12.1 Company Overview
 - 16.3.12.2 Product Portfolio

List Of Tables

LIST OF TABLES

Table 1: Global: Solid State Transformer Market: Key Industry Highlights, 2021 and 2027

Table 2: Global: Solid State Transformer Market Forecast: Breakup by Product (in Million US\$), 2022-2027

Table 3: Global: Solid State Transformer Market Forecast: Breakup by Component (in Million US\$), 2022-2027

Table 4: Global: Solid State Transformer Market Forecast: Breakup by Voltage Level (in Million US\$), 2022-2027

Table 5: Global: Solid State Transformer Market Forecast: Breakup by Application (in Million US\$), 2022-2027

Table 6: Global: Solid State Transformer Market Forecast: Breakup by End User (in Million US\$), 2022-2027

Table 7: Global: Solid State Transformer Market Forecast: Breakup by Region (in Million US\$), 2022-2027

Table 8: Global: Solid State Transformer Market: Competitive Structure

Table 9: Global: Solid State Transformer Market: Key Players

List Of Figures

LIST OF FIGURES

Figure 1: Global: Solid State Transformer Market: Major Drivers and Challenges

Figure 2: Global: Solid State Transformer Market: Sales Value (in Million US\$), 2016-2021

Figure 3: Global: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 4: Global: Solid State Transformer Market: Breakup by Product (in %), 2021

Figure 5: Global: Solid State Transformer Market: Breakup by Component (in %), 2021

Figure 6: Global: Solid State Transformer Market: Breakup by Voltage Level (in %), 2021

Figure 7: Global: Solid State Transformer Market: Breakup by Application (in %), 2021

Figure 8: Global: Solid State Transformer Market: Breakup by End User (in %), 2021

Figure 9: Global: Solid State Transformer Market: Breakup by Region (in %), 2021

Figure 10: Global: Solid State Transformer (Distribution Solid State Transformer) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 11: Global: Solid State Transformer (Distribution Solid State Transformer) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 12: Global: Solid State Transformer (Power Solid State Transformer) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 13: Global: Solid State Transformer (Power Solid State Transformer) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 14: Global: Solid State Transformer (Traction Solid State Transformer) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 15: Global: Solid State Transformer (Traction Solid State Transformer) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 16: Global: Solid State Transformer (Converters) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 17: Global: Solid State Transformer (Converters) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 18: Global: Solid State Transformer (High-frequency Transformers) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 19: Global: Solid State Transformer (High-frequency Transformers) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 20: Global: Solid State Transformer (Switches) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 21: Global: Solid State Transformer (Switches) Market Forecast: Sales Value (in

Million US\$), 2022-2027

Figure 22: Global: Solid State Transformer (Other Components) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 23: Global: Solid State Transformer (Other Components) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 24: Global: Solid State Transformer (HV/MV) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 25: Global: Solid State Transformer (HV/MV) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 26: Global: Solid State Transformer (MV/LV) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 27: Global: Solid State Transformer (MV/LV) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 28: Global: Solid State Transformer (Alternative Power Generation) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 29: Global: Solid State Transformer (Alternative Power Generation) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 30: Global: Solid State Transformer (Electric Vehicle Charging Stations) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 31: Global: Solid State Transformer (Electric Vehicle Charging Stations) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 32: Global: Solid State Transformer (Power Distribution) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 33: Global: Solid State Transformer (Power Distribution) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 34: Global: Solid State Transformer (Traction Locomotives) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 35: Global: Solid State Transformer (Traction Locomotives) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 36: Global: Solid State Transformer (Other Applications) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 37: Global: Solid State Transformer (Other Applications) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 38: Global: Solid State Transformer (Energy) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 39: Global: Solid State Transformer (Energy) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 40: Global: Solid State Transformer (Transportation) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 41: Global: Solid State Transformer (Transportation) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 42: Global: Solid State Transformer (Other End Users) Market: Sales Value (in Million US\$), 2016 & 2021

Figure 43: Global: Solid State Transformer (Other End Users) Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 44: North America: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 45: North America: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 46: United States: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 47: United States: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 48: Canada: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 49: Canada: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 50: Asia-Pacific: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 51: Asia-Pacific: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 52: China: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 53: China: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 54: Japan: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 55: Japan: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 56: India: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 57: India: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 58: South Korea: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 59: South Korea: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 60: Australia: Solid State Transformer Market: Sales Value (in Million US\$), 2016

& 2021

Figure 61: Australia: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 62: Indonesia: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 63: Indonesia: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 64: Others: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 65: Others: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 66: Europe: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 67: Europe: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 68: Germany: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 69: Germany: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 70: France: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 71: France: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 72: United Kingdom: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 73: United Kingdom: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 74: Italy: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 75: Italy: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 76: Spain: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 77: Spain: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 78: Russia: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 79: Russia: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 80: Others: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 81: Others: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 82: Latin America: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 83: Latin America: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 84: Brazil: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 85: Brazil: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 86: Mexico: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 87: Mexico: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 88: Others: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 89: Others: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 90: Middle East and Africa: Solid State Transformer Market: Sales Value (in Million US\$), 2016 & 2021

Figure 91: Middle East and Africa: Solid State Transformer Market: Breakup by Country (in %), 2021

Figure 92: Middle East and Africa: Solid State Transformer Market Forecast: Sales Value (in Million US\$), 2022-2027

Figure 93: Global: Solid State Transformer Industry: SWOT Analysis

Figure 94: Global: Solid State Transformer Industry: Value Chain Analysis

Figure 95: Global: Solid State Transformer Industry: Porter's Five Forces Analysis

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