

# Solid Oxide Fuel Cell Market to Expand CAGR of ~34% Assessment for the Driving Factors & Opportunities During 2023-2033

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STATES, January 20, 2023 /EINPresswire.com/ -- Global [Solid Oxide Fuel Cell Market](#) Key Insights

During the forecast period of 2023-2033, the global solid oxide fuel cell market is expected to reach an estimated value of ~USD 7 billion by 2033, by expanding at a CAGR of ~34%. The market further generated a revenue of ~USD 2 billion in the year 2022. Major key factors propelling the growth of solid oxide fuel cell market worldwide are the reduction of reliance on fossil fuels as a source of energy and increased government regulation of greenhouse gas emissions.

## Market Definition of Solid Oxide Fuel Cell

Solid oxide fuel cells are electrochemical converters that produce electricity directly from fuel oxidation. SOFCs have solid oxide or ceramic electrolytes as their electrolyte material. All fuel cells serve as energy converters; they change one form of energy into another. Chemical energy stored in fuel can be converted into electric and thermal energy without combustion using fuel cells. The conversion of energy by engines and power plants also occurs through combustion, resulting in a lower efficiency. The main advantages of this type of fuel cell are their capability of generating heat and power at the same time, their durability, versatility, and low emission levels. In addition to longer startup times and mechanical and chemical compatibility issues, the high operating temperature is one of the biggest disadvantages.

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## Global Solid Oxide Fuel Cell Market: Growth Drivers

The growth of the global solid oxide fuel cell market can majorly be attributed to the ongoing research and development of hydrogen fuel cells. The use of hydrogen in fuel cells prevents hazardous chemicals from being released as byproducts. Water and heat are the only by-

products of hydrogen use, which minimizes combustion reactions and environmental pollution. According to the International Energy Agency (IEA), hydrogen produces approximately 14.4 exajoules (EJ), or 4% of global energy. Furthermore, the increasing partnership between major key players to enhance the production capacity of solid oxide fuel cells is further expected to drive market growth over the forecast period. For instance, A joint venture between Bosch GmbH and Ceres Power Holdings plc is preparing for full-scale production. A total of USD 300 million will be invested in the solid oxide fuel cell by 2040.

The global solid oxide fuel cell market is also estimated to grow majorly on account of the following:

Increasing adoption by end user in military sector

Increased R&D on fuel cell programs

Growing need for clean energy solutions

Natural gas sector development at a rapid pace

The growth of advanced data centers

Global Solid Oxide Fuel Cell Market: Restraining Factor

To generate power using LP gas, methane, or another fossil fuel, SOFCs are complicated devices containing a number of elementary particles. SOFCs typically operate at extremely high temperatures as heat transfer drives the chemical reaction. Hence this factor is expected to be the major hindrance for the growth of the global solid oxide fuel cell market during the forecast period.

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Global Solid Oxide Fuel Cell Market Segmentation

By Application (Portable, Stationary, & Transport)

The stationary segment, amongst all the other segments, is anticipated to garner the largest revenue by the end of 2033. The growth of the segment can be attributed to the rapid growth in energy demand across a wide range of industries. In the period between 2018 and 2050, global energy consumption is expected to increase by 50%. In terms of heat and electricity generation, stationary solid oxide fuel cells are among the most efficient and clean technologies available. Typically, these systems are measured on three factors, including power output, energy efficiency, and reliability.

By Type (Planar and Tubular)

By End User (Commercial & Industrial, Data Centers, Military & Defense, and Residential)

By Region

The Asia Pacific solid oxide fuel cell market is anticipated to hold the largest market share by the

end of 2033 among the market in all the other regions on account of growing urbanization and industrialization and change in prevailing infrastructure. As per the United States Census Bureau, about 80.7% of the U.S population i.e., 249,253,271 people lived in cities in 2010. In Asia Pacific, stationary fuel cells are mainly used for solid oxide fuel cells. Research institutions and government agencies involved in testing the operating times of solid oxide fuel cells are anticipated to drive the demand for solid oxide fuel cells in the region.

The market research report on global solid oxide fuel cell also includes the market size, market revenue, Y-o-Y growth, and key player analysis applicable for the market in North America (U.S., and Canada), Latin America (Brazil, Mexico, Argentina, Rest of Latin America), Asia-Pacific (China, India, Japan, South Korea, Singapore, Indonesia, Malaysia, Australia, New Zealand, Rest of Asia-Pacific), Europe (U.K., Germany, France, Italy, Spain, Hungary, Belgium, Netherlands & Luxembourg, NORDIC (Finland, Sweden, Norway, Denmark), Ireland, Switzerland, Austria, Poland, Turkey, Russia, Rest of Europe), and Middle East and Africa (Israel, GCC (Saudi Arabia, UAE, Bahrain, Kuwait, Qatar, Oman), North Africa, South Africa, Rest of Middle East and Africa).

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### Key Market Players Featured in the Global Solid Oxide Fuel Cell Market

Some of the key players of the global solid oxide fuel cell market are Robert Bosch GmbH, Mitsubishi Heavy Industries, Ltd., Aisin Corporation, Sunfire GmbH, FuelCell Energy, Inc., Catator AB, Nexceris, LLC, Ceres Power Holdings plc, General Electric Company, Doosan Fuel Cell Co., Ltd., and others.

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