Global Solid Oxide Fuel Cell Market (Pre & Post COVID-19 Impact Analysis); Report by TNR

Global Solid Oxide Fuel Cell Market to Witness CAGR of 29.8% from 2023 to 2031, Projected to Reach US$ 8.2 Bn by 2031

WILMINGTON, DELAWARE, UNITED STATES, December 5, 2023 /EINPresswire.com/ -- Global Solid Oxide Fuel Cell Market Synopsis
Solid oxide fuel cells are electrochemical devices that convert the chemical energy of fuels, such as hydrogen, natural gas, or biogas, into electricity. They operate at high temperatures (600-1000°C), which makes them more efficient than other types of fuel cells. Solid oxide fuel cells are also fuel-flexible, meaning that they can be used with a variety of fuels. In recent years, there have been a number of developments in the solid oxide fuel cell market. These include the development of new materials for the electrolyte, anode, and cathode, as well as the development of new manufacturing techniques. These developments have led to improved performance and durability of solid oxide fuel cells, and have made them more cost-competitive.

The COVID-19 pandemic negatively impacted the solid oxide fuel cell market in 2020 due to reduced industrial activity and power demand. Supply chain disruptions also occurred. However, the market is expected to recover post-pandemic as the demand for clean energy rises. Solid oxide fuel cells offer low-emission electricity generation, and advancements in materials and manufacturing are enhancing efficiency and cost-competitiveness. Despite the temporary setback, the solid oxide fuel cell market is poised for growth in the future, driven by the demand for cleaner energy sources and technological developments.

Get Sample Copy of the Report

Factors Fueling the Growth of the Worldwide Solid Oxide Fuel Cell Market:
Increasing Demand for Clean Energy Solutions: The growing global concern over environmental pollution and greenhouse gas emissions has driven the demand for clean energy sources,

including solid oxide fuel cell market. According to a report by the International Energy Agency (IEA), renewable energy capacity, including fuel cells like solid oxide fuel cells, grew by 45% between 2010 and 2020. This increasing trend is propelled by the need to transition towards sustainable energy systems and reduces reliance on fossil fuels.

Government Support and Incentives: Governments worldwide have been providing financial incentives, grants, and policy support to promote the adoption of clean energy technologies. In the US, the federal Investment Tax Credit (ITC) provides a 26% tax credit for eligible fuel cell systems, stimulating solid oxide fuel cell deployment. Europe's Horizon 2020 program allocated significant funds for research and innovation in fuel cell technologies. Such government support encourages investments in solid oxide fuel cell research, development, and deployment, thereby bolstering the market.
Advancements in Materials and Manufacturing: Continuous research and development efforts have led to improvements in solid oxide fuel cell market materials and manufacturing techniques. For instance, the use of nanotechnology and advanced ceramics has enhanced cell efficiency and durability. According to the U.S. Department of Energy, advancements in cathode materials have boosted solid oxide fuel cell performance by nearly 100% since 2010. These developments have made solid oxide fuel cells more competitive, reliable, and cost-effective, contributing to their adoption in various applications.

Global Solid Oxide Fuel Cell Market Recent Developments:
The solid oxide fuel cell market is a rapidly growing market, with a number of recent developments that are expected to drive further growth in the coming years. Some of the recent developments in the solid oxide fuel cell market include the development of new electrolyte materials, such as yttria-stabilized zirconia (YSZ), which have improved conductivity and durability; the development of new anode materials, such as nickel-based cermets, which have improved catalytic activity and durability; the development of new cathode materials, such as lanthanum strontium manganite (LSM), which have improved electrochemical activity and durability; the development of new manufacturing techniques, such as screen printing and tape casting, which have reduced the cost of solid oxide fuel cells; the increasing demand for clean energy sources, such as hydrogen, natural gas, and biogas; and the increasing government support for the development of solid oxide fuel cell technologies.
North America has been experiencing rapid growth in the adoption of solid oxide fuel cell market technology. The region has robust research and development capabilities and has been actively investing in clean energy solutions.

Global Solid Oxide Fuel Cell Market: Competitive Landscape and Key Developments
In June 2023, Bloom Energy and Perenco entered into a contract to deploy 2.5 megawatts (MW) of Bloom's solid oxide fuel cells at a location in England. Perenco, a prominent independent

hydrocarbon company, currently operates in 14 partner countries, producing 500,000 barrels of oil equivalent (BOE) of oil and gas per day.
In February 2023, Weichai Power, Ceres' strategic partner, introduced a cutting-edge high-power metal supported solid oxide fuel cell system, which is built upon Ceres' technology and is considered world-leading.

Global Solid Oxide Fuel Cell Market:
By Type
- Planar
- Tubular

By Component
- Stack
- Balance of Plant (BoP)

By Application
- Portable
- Stationary
- Transport

By End User
- Residential
- Commercial & Industrial
- Data Centers
- Military & Defense

By Region
- North America (U.S., Canada, Mexico, Rest of North America)
- Europe (France, The UK, Spain, Germany, Italy, Nordic Countries (Denmark, Finland, Iceland, Sweden, Norway), Benelux Union (Belgium, The Netherlands, Luxembourg), Rest of Europe
- Asia Pacific (China, Japan, India, New Zealand, Australia, South Korea, Southeast Asia (Indonesia, Thailand, Malaysia, Singapore, Rest of Southeast Asia), Rest of Asia Pacific)
- Middle East & Africa (Saudi Arabia, UAE, Egypt, Kuwait, South Africa, Rest of Middle East & Africa)
- Latin America (Brazil, Argentina, Rest of Latin America)

Consult with Our Expert:
Jay Reynolds
The Niche Research
Japan (Toll-Free): +81 663-386-8111
South Korea (Toll-Free): +82-808- 703-126
Saudi Arabia (Toll-Free): +966 800-850-1643
United Kingdom: +44 753-710-5080
United States: +1 302-232-5106
Email: askanexpert@thenicheresearch.com
Website: www.thenicheresearch.com

Jay Reynolds
The Niche Research
+1 302-232-5106
email us here