Fuel Cell Market to Outstrip US$ 108.1 billion by 2031 Growing Sturdy at 27.4% CAGR: Astute Analytica

CHICAGO, UNITED STATES, March 8, 2023 /EINPresswire.com/ -- Global fuel cell market revenue was US$ 11.07 billion in 2022 and is forecast to reach US$ 108.1 billion by 2031. In addition, the global fuel cell market is estimated to grow at a compound annual growth rate (CAGR) of 27.4% during the forecast period from 2023-2031.

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A fuel (commonly hydrogen) and an oxidizing agent (usually oxygen) are the two components of an electrochemical fuel cell, which uses their combination to produce electricity through two redox processes. A constant supply of oxygen and fuel is necessary for the chemical reaction in fuel cells (usually from fresh air). However, batteries primarily obtain their chemical energy from metals and their ions or oxides that are already present in the cell, with the exception of flow batteries. Fuel cells can continually produce electricity by using fuel and oxygen.

Factors Contributing to Market Growth

Driving Factor

The main drivers of this market are an expanding demand for portable electronics, governmental laws aimed at lowering pollution levels, and improved fuel cell performance. In the upcoming years, there will be a rise in fuel cell awareness, which will have a greater impact on fuel cells. Fuel cells are being more widely used owing to strict government rules on energy usage and the growing demand for better and more dependable energy systems. The market is growing due to fuel cells' higher efficiency, as compared to other power-generating systems.

Restraint Factor

The increased expense of the catalyst, which results in a higher price for fuel cells, and the limited availability of fuel cell infrastructure are challenges that the markets and industries for fuel cells must overcome. The reaction rate of some of the most popular fuel cells, including DMFC, PAFC, and PEM, is accelerated by the use of rare-earth metals like platinum. Because rare-earth metals are expensive, using them raises the fuel cell's overall cost. A fuel cell is likely to become less expensive in the upcoming years due to technological advancements.

Growth Factor

Globally, there is great potential for the development of fuel cells. Despite its maturity, the market will probably have a substantial impact on the global economy during the forecast years. Fuel cells are in greater demand; thus, manufacturers are spending a lot of money on R&D to develop new products and expand their capabilities. For example, the United States Department of Energy declared an investment of US$ 39 million in fuel cell technology in 2018. In order to accelerate market expansion, these studies frequently concentrate on enhancing fuel cells' ability to power automobiles. By using less precious metals and creating novel catalyst layer designs, these advancements also aim to make fuel cells more durable and less expensive. Thus, such advances will boost the global market

Challenge Face by Market

Recent inventions are likely to reach a wider audience if high-efficiency wireless technologies complement them. On the market, several firms are providing cutting-edge products. Future innovations like new varieties of fuel cells will increase competitiveness. Thus, the rising competition in the marketplace may create challenges for global market players.

Study of COVID-19 Outbreak

According to the International Energy Agency, the COVID-19 crisis had a substantial impact on the expansion of renewable power capacity. The predicted fall in new renewable energy installations, coupled with the global recession of COVID-19, predicts a decline in new renewable energy installations globally in 2020.

This pandemic had affected the world's supply networks for hydrogen-based technologies, which need a large investment and a well-coordinated supply chain.

The COVID-19 pandemic, according to the IEA, will have an impact on the present demand for hydrogen from oil refineries, steel manufacturers, and chemical businesses. According to an IEA assessment, by 2020, fuel consumption will decline by 9% for gasoline, 6% for diesel, and 26% for jet fuel, while demand for important chemicals made from hydrogen (such as methanol) will fall by 7%.

Segmentation Summary

Type Segment Insights

In 2020, the proton exchange membrane fuel cell, or PEMFC segment dominated the global fuel cell industry. The widespread use of this market segment in a number of industries, including transportation, defense, stationary, etc., is credited with its rise. The PEMFC market will have the potential for growth as a result of automakers' increasing investments in powerful, high-efficiency vehicles that run on clean fuel. In addition, the PEMFC segment will dominate in the future because it only uses oxygen, hydrogen, and water as fuel and runs at a relatively low temperature.

Application Segment Insights

In 2020, the stationary segment was the leading consumer of the fuel cell industry. Several factors are likely to contribute to the growth of the stationary application segment, including high efficiency and flexibility in fuel consumption.

On the other hand, the transportation segment is likely to rise at a rapid annual growth rate throughout the forecast period due to the rising demand for fuel-cell vehicles and forklifts. In addition, the segment will increase due to the increased research and development in the Europe region to develop hybrid vehicles driven by hydrogen.

Regional Study

Asia-Pacific will be the largest market during the forecast period of 2021–2028 due to the region's increasing demand for new fuel-cell-powered automobiles. Also, the increased use of cleaner energy sources will probably accelerate the fuel cell industry in the region. Also, there is a growing need for additional electricity, a shift away from fossil fuels, and a rise in the use of green energy technologies. Furthermore, the region's growing development will substantially raise the market for fuel cells.

Leading Competitors
Some of the popular competitors in the global fuel cell market are:
Fuji Electric India Pvt Ltd.
Sfc Energy
Hydrogenics
Plug Power Inc.
Fuel Cell Energy Inc.
Proton Power Systems Plc

Ballard Power Systems Incorporated
United Technologies
Afc Energy Plc
ITM Power Plc
Other Prominent Players

Key Developments by these Players

• In 2021, Ballard's newest heavy-duty power module, the FC move-HD+, is the brand's eighth iteration of the product and is intended for buses and medium- and heavy-duty trucks.
• In Oct 2019, Ballard Power and Berlin-based BEHALA have a contract for the supply of three FCveloCity 100 kW fuel cell modules. Elektra will use fuel cells to create push boats that emit no emissions. The push boat will also transport people between Hamburg and Berlin in addition to moving goods.
• In Oct 2019, an agreement was reached by SFC Energy and the Finnish energy company Aurorahut. As per the deal, AuroraHut will utilize the EFOY fuel cell in its latest all-season igloo houseboats for highly customized vacations. Every igloo has access to a completely autonomous, environmentally beneficial, and silent power source thanks to fuel cells.
• In March 2019, a fuel cell made of hydrogen was added to the lineup by Plug Power. For today's electric vehicle use cases, such as prolonged runtimes, high utilization, dependable performance in quick refueling, challenging settings, and zero emissions, the ProGen 30kW engine is a financially viable option. For original equipment manufacturers (OEMs), ProGen's market-leading products make it simple to switch to sustainable fuel cell electricity.

Segmentation Outline
The global fuel cell technology market segmentation focuses on Type, Application, and Region.
Segmentation based on Type
Solid Oxide Fuel Cell
Proton Exchange Membrane Fuel Cell
Molten Carbonate Fuel Cells (Mcfc)
Phosphoric Acid Fuel Cell (Pafc)
Others
o Direct Methanol Fuel Cells (Dmfc)
o Alkaline Fuel Cells (Afc)
o Direct Carbon Fuel Cells (Dcfc)

Segmentation based on Application
Portable
Stationary
Transport

Segmentation based on Region
North America

The U.S.
Canada
Mexico

Europe
Western Europe
The UK
Germany
France
Italy
Spain
Rest of Western Europe
Eastern Europe
Poland
Russia
Rest of Eastern Europe

Asia Pacific
China
India
Japan
Australia & New Zealand
South Korea
ASEAN
Rest of Asia Pacific

Middle East & Africa
UAE
Saudi Arabia
South Africa
Rest of MEA

South America
Argentina
Brazil
Rest of South America

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ourselves in generating unparalleled, in-depth, and uncannily accurate estimates and projections for our very demanding clients spread across different verticals. We have a long list of satisfied and repeat clients from a wide spectrum including technology, healthcare, chemicals, semiconductors, FMCG, and many more. These happy customers come to us from all across the Globe. They are able to make well-calibrated decisions and leverage highly lucrative opportunities while surmounting the fierce challenges all because we analyze for them the complex business environment, segment-wise existing and emerging possibilities, technology formations, growth estimates, and even the strategic choices available. In short, a complete package. All this is possible because we have a highly qualified, competent, and experienced team of professionals comprising business analysts, economists, consultants, and technology experts. In our list of priorities, you-our patron-come at the top. You can be sure of best cost-effective, value-added package from us, should you decide to engage with us.

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