

Hydrogen Fuel Cell: Global Markets

Market Research Report | 2024-11-12 | 139 pages | BCC Research

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Report description:

Description

Report Scope

The global hydrogen fuel cell market determines the segments by product type, technology, application and regional market analysis. This report covers the hydrogen fuel cells used in stationary, portable and mobile applications. The applications considered in this study are combined heat and power (CHP), stationary power supply units, auxiliary power units and vehicle propulsion systems. Other applications include fuel cell electrolyzers, which use electricity as input and produce hydrogen as output. These are not included in the scope of the report.

The market sizing has been provided in value (\$ millions) and volume (gigawatts). The report also covers competitive intelligence, which covers the market share of prominent companies based on their product offerings and revenues generated from the fuel cell business. It also provides details of global market dynamics, emerging technologies and developments happening in the industry.

Report Includes

- 41 data tables and 60 additional tables
- An update on the global market for hydrogen fuel cell technology
- Analyses of the global market trends, with data from 2023, estimates for 2024, forecasts for 2025, 2027, and projections of compound annual growth rates (CAGRs) through 2029
- An evaluation of the market potential for hydrogen fuel cells in the stationary and transport power generation industry
- Forecast for the global hydrogen fuel cell market, and corresponding market share analysis by product type, technology, application, and region
- Discussion of the market dynamics (DROs), technology updates and industry value chain
- Insights into the industry structure, current competitive landscape, R&D activity, and a company value share analysis
- A discussion of ESG challenges and ESG practices in the industry
- Company profiles of major players within the industry, including Ballard Power Systems, Bloom Energy, Ceres, Doosan Fuel Cell

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Executive Summary

Summary:

The increasing demand for sustainable energy sources across the hard-to-abate industries and technological advances to reduce cost and increase efficiency are among the major driving forces for the global hydrogen fuel cell market. The development of a hydrogen economy is crucial to speed up the commercialization of hydrogen fuel cells. The high cost and low competitiveness with conventional fuels, however, are major bottlenecks in the market's growth.

Fuel cells can be used for multiple stationary applications, including distributed power generation, backup power, cogeneration and power generation at remote locations. Fuel cells support almost all portable power applications, including batteries, handheld devices and portable gensets. The transportation industry showcased a new paradigm for hydrogen fuel cell applications. It includes passenger vehicles, medium-to-heavy duty vehicles, marine vessels, aircraft, industrial vehicles (e.g., forklifts) and other unmanned aerial vehicles (UAVs). It also offers auxiliary power to transportation vehicles.

Substantial global efforts are currently focused on fuel cell research and development (R&D). Governments, private research institutes, universities and private industries all recognize the potential market that could develop over the next 15 to 25 years. Current R&D is mainly focused on the development of reliable, low cost and high-performance fuel cell systems that can be used for a wide array of transportation, diesel generator (DG), utility and industrial applications.

To this end, several types of fuel cells are currently being developed. The report will provide a discussion and an intercomparison of the more common fuel cell technologies currently available or in development. The technology tends to suffer from two distinct drawbacks: it is expensive, and it is difficult to find qualified service providers for maintenance. Cost has been the challenge of the fuel cell industry since the technology's advent. Cost reductions predicted and projected by the industry and by researchers have materialized at a much slower pace than anticipated. The result is that fuel cells still primarily fill only a niche market.

Table of Contents:

Table of Contents
Chapter 1 Executive Summary
Market Outlook
Scope of Report
Market Summary
Chapter 2 Market Overview
Overview
Porter's Five Forces Analysis
Bargaining Power of Buyers
Bargaining Power of Suppliers
Potential of New Entrants
Threat of Substitutes
Competition in the Industry
Value Chain Analysis
Overview
Strengths, Weaknesses, Opportunities and Threats Analysis
Climate Change Policies and Regulations
Kyoto Protocol

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Carbon Pricing
Paris Agreement
European Green Deal
Hydrogen Fuel Cell Technologies Office
Climate Target Policies
Chapter 3 Market Dynamics
Market Dynamics Snapshot
Market Drivers
Increasing Global Fuel Cell Electric Vehicle Sales
Investments in Hydrogen and Fuel Cell Carbon Credits
Augmenting Demand from the Maritime Industry
Green Hydrogen as a Catalyst for Fuel Cells
Market Challenges
High Cost of Fuel Cell Raw Materials
High Investment in Hydrogen Infrastructure Development
Market Opportunities
Increasing Industrial Demand for Low-Emission Fuels
Market Restraints
High Maintenance Cost of Fuel Cells
Crude Oil Price Fluctuations
Chapter 4 Emerging Technologies and Developments
Overview
Increasing Number of Collaborations Among Automotive and Fuel Cell Companies
Platinum-Based Electrocatalyst
Low-Platinum Fuel Cell
Non-Precious Metal Catalyst
Cobalt Nitrate as an Alternative to Platinum in Fuel Cells
IE-Drive
Fuel Cells: Diesel Genset Alternative
Chapter 5 Market Segmentation Analysis
Segmentation Breakdown
Market Analysis by Product Type
Liquid-Cooled Hydrogen Fuel Cells
Air-Cooled Hydrogen Fuel Cells
Market Analysis by Technology
Polymer Electrolyte Membrane Fuel Cell
Solid Oxide Fuel Cells
Phosphoric Acid Fuel Cell
Other Technologies
Market Analysis by Application
Stationary Power
Transport
Portable Power
Geographic Breakdown
Market Analysis by Region
Asia-Pacific
North America

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Europe
Rest of the World
Chapter 6 Competitive Intelligence
Overview
Chapter 7 Appendix
Methodology
Information Sources
References
Abbreviations Used in the Report
Company Profiles
BALLARD POWER SYSTEMS
BLOOM ENERGY
CERES
CONVION LTD.
CUMMINS INC.
DOOSAN FUEL CELL CO. LTD.
FUELCELL ENERGY INC.
FUJI ELECTRIC CO. LTD.
HORIZON FUEL CELL TECHNOLOGIES
INTELLIGENT ENERGY LTD.
KYOCERA CORP.
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