Water as a fuel Market By Fuel Type (Hydrogen, Oxyhydrogen), By Technology (Electrolysis, Natural Gas Reforming): Global Opportunity Analysis and Industry Forecast, 2023-2032

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Report description:

The global water as a fuel market was valued at $4.1 billion in 2022 and is projected to reach $13.4 billion by 2032, growing at a CAGR of 12.5% from 2023 to 2032.

Water as a fuel is an indirect fuel source used for the production of hydrogen and oxyhydrogen. Both products are largely used in many applications in large quantities, thereby driving demand for water as a fuel market. The rise in greenhouse gas emissions and its negative impact on the environment have led to concerns and a search for sustainable fuel. Blue and green hydrogen are sustainable alternatives to carbon-emitting fossil fuels. Thus, rise in demand for blue and green hydrogen acts as a driving factor for the water as fuel market growth. Moreover, the market is further fueled by the demand for oxyhydrogen gas from the metallurgical, plastic, and glass industry for the purpose of cutting and melting.

Many industries use electrolyzers, exhibiting a capacity of 1-5 MW for electricity generation that is further used in various operations. This helps in resolving the energy crisis as well as reducing carbon footprint. In addition, hydrogen is used for powering such industrial operations that are generated from on-site electrolyzers, which act as a key driving factor of the industry. Many chemical and energy industries require hydrogen as feedstock to perform several operations. The hydrogen used in several intermediate processes is used as feedstock, which can be generated through a site electrolyzer plant.

Several other applications of hydrogen are in aerospace, fertilizers, building heating & cooling, and refrigeration. Hydrogen gas is used in cooling, building heating, aerospace applications, and many other industrial applications. As a coolant, it is used in power plant generators. In aerospace applications, liquid hydrogen is used as fuel. Such applications of hydrogen in the aforementioned industries augment the demand for electrolyzers, thereby driving the growth of the global water as a fuel market. Hydrogen is used in several industries as feedstock, reducing agents, for removing impurities from ores, and producing ammonia gas for fertilizers.

However, potential applications of the product such as in building heating & cooling, aviation, shipping, iron & steel, chemicals,

and hydrogen-based fuels augment the water as a fuel market growth. The cost of production of hydrogen involving electrolyzers and carbon capture technology is high. It brings out the final product to cost around $2-2.5/kg. This cost is not on par with conventional fuels and thus there is reduced interest from customers. Moreover, the production process incurs efficiency losses. The energy efficiency of hydrogen fuels is much lower in comparison with other sources of energy and thus the market growth is hindered.

The water as a fuel market size is segmented on the basis of fuel type, technology, and region. By fuel type, the water as a fuel market is bifurcated into hydrogen and green oxyhydrogen. Depending on the technology, the market is classified into electrolysis and natural gas reforming. By region, the water as a fuel market is analyzed across North America, Europe, Asia-Pacific, and LAMEA (Latin America, the Middle East, and Africa). The major players operating in the water as a fuel industry are Panasonic Corporation, Plug Power Inc., FuelCell Energy Inc., Linde plc, Iberdrola SA, Exxon Mobil Corporation, Orsted AS, Air Liquide, China Petroleum and Chemical Corporation, and Enel Green Power SpA.

In February 2023, Air Liquide and Total Energies announce their decision to create an equally owned joint venture to develop a network of hydrogen stations, geared towards heavy-duty vehicles on major European road corridors. This initiative will help facilitate access to hydrogen, enabling the development of its use for goods transportation and further strengthening the hydrogen sector.

In March 2023, Air Liquide announces the construction of an industrial-scale ammonia (NH3) cracking pilot plant in the port of Antwerp, Belgium. With this cracking technology, Air Liquide will further contribute to the development of hydrogen as a key enabler of the energy transition.

Enel Green Power Spa develops and manages power generated from renewable resources. It manages more than 1,200 power plants on five continents. It has over 56 GW of installed renewable capacity from a mix of renewable resources, including wind, solar, hydroelectric, and geothermal. In November 2022, Australian renewable green energy developer Fortescue Future Industries (FFI) and Enel's global renewables arm Enel Green Power S.p.A. (EGP), announced that they will partner together to explore co-development of the green hydrogen value chain with an initial focus on Latin America and Australia. The partnership will support FFI and EGP in their goals to not only diversify future energy supply and increase energy security, but also to help the world in its fight to lower emissions and fight climate change.

The drivers, restraints, and opportunities are explained in the report to better understand the market dynamics. This report further highlights the key areas of investment. In addition, it includes Porter's five forces analysis to understand the competitive scenario of the industry and the role of each stakeholder. The report features strategies adopted by key market players to maintain their foothold in the market. Furthermore, it highlights the competitive landscape of key players to increase their market share and sustain the intense competition in the industry.

Key Benefits For Stakeholders

This report provides a quantitative analysis of the market segments, current trends, estimations, and dynamics of the water as a fuel market analysis from 2022 to 2032 to identify the prevailing water as a fuel market opportunities.

The market research is offered along with information related to key drivers, restraints, and opportunities.

Porter's five forces analysis highlights the potency of buyers and suppliers to enable stakeholders make profit-oriented business decisions and strengthen their supplier-buyer network.

In-depth analysis of the water as a fuel market segmentation assists to determine the prevailing market opportunities.

Major countries in each region are mapped according to their revenue contribution to the global market.

Market player positioning facilitates benchmarking and provides a clear understanding of the present position of the market players.

-The report includes the analysis of the regional as well as global water as a fuel market trends, key players, market segments, application areas, and market growth strategies.

Key Market Segments

By Fuel Type

- Hydrogen
- Oxyhydrogen

By Technology

- Electrolysis
- Natural Gas Reforming

By Region

- North America
- U.S.
- Canada
- Mexico
- Europe
- Germany
- UK
- France
- Italy
- Spain
- Rest of Europe
- Asia-Pacific
- China
- Japan
- India
- South Korea
- Australia
- Rest of Asia-Pacific
- LAMEA
- Brazil
- Saudi Arabia
- South Africa
- Rest of LAMEA
- Key Market Players
- Air Liquide
- China Petroleum & Chemical Corporation
- Enel Green Power Spa
- ExxonMobil
- FuelCell Energy Inc
- Iberdrola S.A.
- Linde plc
- Orsted A/S
- Panasonic
- Plug Power Inc.

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