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Green Hydrogen Market: Segmented by Technology (Proton Exchange Membrane Electrolyzer, Alkaline Electrolyzer, and Solid Oxide Electrolyzer); By Renewable source (Wind and Solar) and Region – Global Analysis of Market Size, Share & Trends for 2019–2020 and Forecasts to 2031

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Abstracts

[177+ Pages Research Report] Global Green Hydrogen Market to surpass USD 37 billion by 2031 from USD 0.46 billion in 2021 at a CAGR of 55.01% in the coming years, i.e., 2021-30.

Product Overview
Green hydrogen is a clean and fresh burning fuel that removes emissions by means of renewable energy to electrolyze water, extracting the hydrogen atom within it from its molecular twin oxygen. Green hydrogen is formed by the electrolysis of water for which electric power is operated, which is produced by renewable energy sources, such as wind or solar energy.

Market Highlights
Green Hydrogen Market is expected to project a notable CAGR of 55.01% in 2031

The presence of favorable government measures pushing towards the hydrogen economy coupled with growing environmental alarms regarding rising carbon emissions from fossil fuel usage is anticipated to boost the demand for the hydrogen economy. This trend is expected to offer a potential growth landscape for the market over the forecast years.

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Green Hydrogen Market: Segments

Alkaline Electrolyzer segment to grow with the highest CAGR during 2021-31

Green Hydrogen Market is divided by Technology Type into Proton Exchange Membrane Electrolyzer, Alkaline Electrolyzer, and Solid Oxide Electrolyzer. Alkaline Electrolyzer segment to be a larger contributor to Green Hydrogen Market growth during the forecast period. This is due to its high operating time capacity and low investment cost. Alkaline electrolysis uses several kinds of electrolytes that are extensively available and also cheap to produce. Electrolytes used in alkaline electrolysis can be easily replicable or exchangeable and also cover a very minimal corrosive influence on both electrodes. All these factors drive the growth of Alkaline Electrolyzer segment.

Wind segment to grow with the highest CAGR during 2021-31

Green Hydrogen Market is divided by Renewable source into Wind and Solar. Wind segment has the largest market share. Electrolyzers based on wind energy contribute to almost 52.8% of all green hydrogen by value in 2020. Wind plants are normally set up onshore or offshore. Offshore structures have standard output year long as compared to onshore plants. The price of wind energy has reduced by 44-78% from its peak in 2007-2010. This factor has given a driven to the adoption of wind power for green hydrogen production.

Market Dynamics

Drivers

Rising Government Strategies

European Hydrogen Backbone is a measure taken by the European Union to enhance the dedicated hydrogen transport infrastructure in Europe. The European hydrogen backbone initiative has been joined by many others operators from 11 European countries. The estimated total investment for advancement of infrastructure is approximately USD 45 billion. The hydrogen infrastructure maps which are available today reflect the perspectives of 23 gas transmission system operators (TSOs) on how infrastructure will grow to attain decarburization goals. These policies have contributed to the speedy growth of the green hydrogen market.

Increasing Investment

Increased investment in the growth of green hydrogen and attaining net-zero net carbon

emissions are two main factors driving the green hydrogen market. Many companies all across the globe are increasing its wind portfolio. Thus, the increasing investment for manufacturing green hydrogen and growing utilization of green hydrogen from the end-user industry has further driven the growth of the green hydrogen market.

Restraint
High production cost

The production cost of green hydrogen market is high. The set up of industry, plant, and many other components makes the total production cost huge. Thus, the high production cost acts as a restraint in Green Hydrogen Market.

Green Hydrogen Market: Key Players
Linde (Ireland)

Company Overview, Business Strategy, Key Product Offerings, Financial Performance, Key Performance Indicators, Risk Analysis, Recent Development, Regional Presence, SWOT Analysis

Guangdong Synergy Hydrogen Power Technology (China)
Siemens (Germany)
H&R Olwerke Schindler (Germany)
Cummins and Enbridge Gas (Canada)
Wind to Gas Energy GmbH & Co. KG (Germany)
Toshiba (Japan)
Nel (Norway)
Other Prominent Players
Impact of COVID-19 on Green Hydrogen Market

Many industries across the globe have been affected by the global pandemic caused by COVID-19. Inadequate supplies have affected several supply chains, raw material suppliers, miners, and others. COVID-19 has majorly affected global energy systems, reduced investments, and threatening to impede the spread of clean energy technology. The pandemic has also had a negative effect on the global green hydrogen market. Several industries, commercial buildings, and other facilities have been closed because of the nationwide lockdowns imposed by different countries. However, the post-pandemic growth of the market is booming. However, the global market for hydrogen is flourishing post-pandemic. Growing government measures for developing clean, green energy by the year 2031 coupled with major players in the green hydrogen

manufacturing market is anticipated to boost the market growth in the forecast years.

Green Hydrogen Market: Regions
Global Green Hydrogen Market is segmented based on regional analysis into five major regions: North America, Latin America, Europe, Asia Pacific, and the Middle East and Africa. Europe is one of the largest markets for Green Hydrogen across the globe. The European Green Deal aims at dropping greenhouse gas emissions and preparing Europe's firm for a climate-neutral economy. Major players in the European region, such as Porsche, BMW, and Audi, are focusing on the downsizing concept of car engines and manufacturing lightweight and fuel-efficient engines, which will also boost the growth of the green hydrogen market.

Green Hydrogen Market is further segmented by region into:

North America Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – United States and Canada
Latin America Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – Mexico, Argentina, Brazil, and Rest of Latin America
Europe Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – United Kingdom, France, Germany, Italy, Spain, Belgium, Hungary, Luxembourg, Netherlands, Poland, NORDIC, Russia, Turkey, and Rest of Europe
Asia Pacific Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – India, China, South Korea, Japan, Malaysia, Indonesia, New Zealand, Australia, and Rest of APAC
Middle East and Africa Market Size, Share, Trends, Opportunities, Y-o-Y Growth, CAGR – North Africa, Israel, GCC, South Africa, and Rest of MENA
Green Hydrogen Market report also contains analysis on:
Green Hydrogen Market Segments

By Technology
Proton Exchange Membrane Electrolyzer
Alkaline Electrolyzer
Solid Oxide Electrolyzer
By Renewable source
Wind
Solar
Green Hydrogen Market Dynamics
Green Hydrogen Market Size
Supply & Demand

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Current Trends/Issues/Challenges
Competition & Companies Involved in the Market
Value Chain of the Market
Market Drivers and Restraints
Green Hydrogen Market Report Scope and Segmentation
Report Attribute Details
Market size value in 2021 USD 0.46 billion
Revenue forecast in 2031 USD 37 billion
Growth Rate CAGR of 55.01% from 2021 to 2031
Base year for estimation 2020
Quantitative units Revenue in USD million and CAGR from 2021 to 2031
Report coverage Revenue forecast, company ranking, competitive landscape, growth factors, and trends
Segments covered Technology, Renewable Sources, and Region
Regional scope North America; Europe; Asia Pacific; Latin America; Middle East & Africa (MEA)
Key companies profiled Linde (Ireland), Guangdong Synergy Hydrogen Power Technology (China), Siemens (Germany), H&R Olwerke Schindler (Germany), Cummins and Enbridge Gas (Canada), Wind to Gas Energy GmbH & Co. KG (Germany), Toshiba (Japan), Nel (Norway) and Other Prominent Players.

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**The above-given segmentations and companies could be subjected to further modification based on in-depth feasibility studies conducted for the final deliverable.

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