

# Hydrogen Production and Storage Technologies: Market Research Report

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# Abstracts

This report analyzes the worldwide markets for Hydrogen Production and Storage Technologies in US\$ Million by following Technologies: Production, and Others (includes Storage and Distribution Technologies).

The report provides separate comprehensive analytics for the US, Japan, Europe, and Rest of World.

Annual estimates and forecasts are provided for the period 2009 through 2018.

The report profiles 98 companies including many key and niche players such as Acta S.p.A, Advanced Materials Corporation, Air Products and Chemicals, Inc., Airgas, Inc., Ballard Power Systems, Inc., Diversified Energy Corporation, Dynetek Industries Limited, Foster Wheeler AG, Fuel Cell Energy, Inc., General Atomics, Haldor Topsøe A/S, Hy9 Corporation, Hydrogenics Corporation, IdaTech plc, Praxair, Inc., Quantum Fuel Systems Technologies Worldwide, Inc., ReliOn, Inc., ThyssenKrupp Uhde GmbH, and Xebec Adsorption, Inc.

Market data and analytics are derived from primary and secondary research.

Company profiles are primarily based upon search engine sources in the public domain.



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Market Drivers **Energy Security Economic Competitiveness Environmental Advantages** Market Inhibitors **Technology Barriers** Production **Fuel Cells** Electrolysis Storage **Economic Barriers** National Energy Policy **Regulatory Issues** Risk Safety Codes and Standards Education **Fueling Infrastructure Production Cost** Select Global Efforts in Hydrogen Energy Development International Partnership for a Hydrogen Economy (IPHE) International Energy Agency (IEA) International Organization for Standardization Technical Committee on Hydrogen **Technologies** 

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Introduction Properties of Hydrogen Hydrogen Production Technologies Thermochemical Production Technologies Steam Methane Reforming (SMR) Advantages Disadvantages Partial Oxidation Autothermal Reforming Sulfur-Iodide Cycle/Thermochemical Water-Splitting Process Gasification of Heavy Hydrocarbons Coal Gasification Biomass Gasification





- **Electrolytic Production Technologies**
- Water Electrolysis
- Alkaline Electrolysis
- Polymer Electrolyte Membrane (PEM) Electrolysis
- **High-Temperature Electrolysis**
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Proton Energy Systems Unveils HOGEN C Series of Hydrogen Generation System OriginOil Develops Breakthrough Hydrogen Production Technology SiGNa Chemistry Introduces New Hydrogen Production Technology Air Products and Chemicals Develops Retail Compression-Less Hydrogen Fueling Station Acta to Exhibit Hydrogen Fuel Enrichment System McPhy Unveils Hydrogen Storage Tanks Horizon to Introduce Horizon Hydrofill Horizon Launches New Hydrogen Fuel Generator Cartridge Hydrogen Catalyst and Dekonta Develop New Hydrogen Production Technology Global Hydrogen Introduces Hydrogen Production Unit Sandia National Laboratories Unveils New Hydrogen Storage System Linde Develops Technology for Producing Hydrogen Hy9 Unveils New Range of Palladium Hydrogen Purifiers Hy9 Launches HGS-M Hydrogen Generators Series

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Turbine Truck Engines Signs Joint Venture Agreement with Energy Technology Services

Quantum Fuel Systems Technologies Worldwide Wins Contract from Mahindra & Mahindra

Hydrogenics and Enbridge Ink Agreement

AGA Gas Collaborates with Sandvik

NITOL Group Commences Hydrogen Production at Silicon Plant

SABIC Technology Selects Hydrogen Reactor/ Generator System of Phoenix Canada Oil

Green Planet Group Establishes AAQIS

Vodik Labs Takes Over Ovonic Hydrogen Storage Division of Energy Conversion Devices

Horizon Fuel Cell Technologies Enters into Strategic Alliance with Pilus Energy



McPhy Energy Obtains Contract from Enel Group UPS Systems and Air Liquide Hydrogen Energy Ink Distribution Agreement Acta Inks Agreement with Claind Xebec Adsorption Inks Agreement with Nuvera Fuel Cells Air Liquide Collaborates with Coca-Cola Hydrogen Link Signs Binding Letter Agreement with IBC Advanced Alloys National Hydrogen Association and US Fuel Cell Council Merge eHydrogen Solutions Completes Additional Intellectual Property Transfer Agreement Sparta Recommences Commercial Sales of HGS in Australia eHydrogen Solutions Enters into Intellectual Property Transfer Agreement Air Liquide Affiliates Purchase HGM Technology from H2Gen Innovations eHydrogen Solutions Enters into IP Transfer Agreement for Purchasing ODHP Assets Claind Inks Agreement with Proton Energy Systems Proton Energy Systems Enters into Joint Venture with SupplyCore Middle East Air Liquide Enters into Three-Year Joint Partnership with University of Kyushu ATK Enters into Alliance with Toro Technip Bags Hydrogen Contracts in the US Air Products and Chemicals Establishes New Hydrogen Plant in Malaysia Acta Inks Agreement with Girelli Bruni Hydrogenics Enters into Partnership Agreement with CommScope Air Liquide Korea Acquires H-Plus SGS Praxair Commences Hydrogen Supply to Indiana Praxair and Powertech Labs Enter into Alliance Topsoe Establishes Hydrogen Production Unit Air Products and Chemicals Wins Long-Term Contract from POSCO Xebec Merges with QuestAir Technologies Proton Energy Systems Demonstrates High-Pressure Hydrogen Generation Hynergreen Technologies Signs Agreements with HyGear Praxair Enters into Agreement with Uhde Nuvera Fuel Cells and Airgas Enter into Agreement Ajwaa Gases Emirates Sets Up New Hydrogen Production Plant and ASU Abraham Group and Proton Energy Systems Ink Cooperative Agreement Catalyx Nanotech Collaborates with Dudek Air Products and Chemicals and ExxonMobil Sign Contract Hydrogenics Bags Electrolyzer Installation Order from Bhushan Power & Steel Air Liquide Inks Industrial Gases Contract with Bayer Polyurethanes Praxair Bags Indian Oil Order Praxair Bags Hydrogen Supply Contract from Cetane Energy Dynamic Fuels Awards Hydrogen Contract to Praxair



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Total Companies Profiled: 98 (including Divisions/Subsidiaries - 103) The United States (59) Canada (8) Japan (1) Europe (24) - France (5) - Germany (5) - The United Kingdom (2) - Italy (2) - Spain (1) - Rest of Europe (9) Asia-Pacific (Excluding Japan) (10) Middle-East (1)



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