

# The Global Market for Green Hydrogen 2024-2035

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## Abstracts

Green hydrogen refers to hydrogen produced through renewable energy powered electrolysis of water, rather than carbon-intensive methods like steam methane reforming. It has no associated carbon emissions. Electrolyzer technologies are crucial for scaling up production of green hydrogen. Electrolyzers use electricity to split water into hydrogen and oxygen gas streams. These electrochemical systems along with renewable energy sources like solar, wind or hydro power enable renewable hydrogen production. Cost declines through technology innovations, manufacturing scale-up and more renewable electricity integration are vital to displace existing fossil-based hydrogen supplying refining, fertilizer and chemical industries today. As green hydrogen scales, it can provide a sustainable energy storage vector and decarbonize sectors like steel, ammonia and transportation (through synthetic fuels) that lack easy electrification routes, playing a major role in achieving global net zero targets.

The Global Market for Green Hydrogen 2024-2035 provides a comprehensive overview of the emerging hydrogen economy and the pivotal role of green hydrogen production in enabling wider adoption across industrial applications. Spanning over 300 pages, the report analyzes global energy demand scenarios and the potential for hydrogen to deliver deep decarbonization across sectors from transportation to steel manufacturing.

Detailed technology analysis focuses on next generation electrolysis techniques for scalable green hydrogen generation from water and renewable electricity. Comparative assessment of alkaline, polymer electrolyte membrane, anion exchange membrane and solid oxide electrolysis systems explores component materials, system configurations, costs, manufacturing challenges and key innovative companies developing these technologies.

Additional sections profile developments around hydrogen storage and distribution infrastructure including pipelines, compression and liquefaction. The utilization segment

covers fuel cell electric vehicles, synthetic fuel production, ammonia synthesis and other hydrogen end-uses across aviation, shipping and heat/power sectors.

The report covers >120 company profiles of major corporations, innovative start-ups and disruptive new entrants commercializing breakthroughs across the hydrogen value chain. Competencies span from advanced electrolyzer stacks to full solutions for onsite hydrogen generation, transportation fleets, renewable energy integration and industrial decarbonization projects. Report contents include:

Overview of the hydrogen economy and production landscape

Analysis of global energy demand scenarios and hydrogen's decarbonization potential

Breakdown of the hydrogen value chain - production, storage/transport, utilization

Details on green hydrogen production methods, projects, and role in energy transition

In-depth technology analysis of next-gen electrolyzers:

Alkaline (AWE)

Polymer Electrolyte Membrane (PEMEL)

Anion Exchange Membrane (AEMEL)

Solid Oxide (SOEC)

Review of hydrogen storage and transportation infrastructure

Coverage of utilization applications:

Fuel cell electric vehicles

Synthetic e-fuel production

Green ammonia production

Renewable power and heat generation

Profiles of ~130 key companies across the hydrogen value chain:

Industrial gas suppliers

Emerging electrolyzer manufacturers

Energy majors

Chemical/ammonia companies

Innovative start-ups

Hydrogen production analysis for global regions

Assessment of market challenges and growth drivers

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