

# 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

## Contents

### 1 RESEARCH METHODOLOGY

### 2 INTRODUCTION

#### 2.1 Hydrogen classification

##### 2.1.1 Hydrogen colour shades

#### 2.2 Global energy demand and consumption

#### 2.3 The hydrogen economy and production

#### 2.4 Removing CO<sub>2</sub> emissions from hydrogen production

#### 2.5 Hydrogen value chain

##### 2.5.1 Production

##### 2.5.2 Transport and storage

##### 2.5.3 Utilization

#### 2.6 National hydrogen initiatives, policy and regulation

#### 2.7 Market challenges

#### 2.8 Industry developments 2020-2024

#### 2.9 Market map

#### 2.10 Global hydrogen production

##### 2.10.1 Industrial applications

##### 2.10.2 Hydrogen energy

###### 2.10.2.1 Stationary use

###### 2.10.2.2 Hydrogen for mobility

##### 2.10.3 Current Annual H<sub>2</sub> Production

##### 2.10.4 Hydrogen production processes

###### 2.10.4.1 Hydrogen as by-product

###### 2.10.4.2 Reforming

###### 2.10.4.2.1 SMR wet method

###### 2.10.4.2.2 Oxidation of petroleum fractions

###### 2.10.4.2.3 Coal gasification

###### 2.10.4.3 Reforming or coal gasification with CO<sub>2</sub> capture and storage

###### 2.10.4.4 Steam reforming of biomethane

###### 2.10.4.5 Water electrolysis

###### 2.10.4.6 The Power-to-Gas" concept

###### 2.10.4.7 Fuel cell stack

###### 2.10.4.8 Electrolysers

###### 2.10.4.9 Other

###### 2.10.4.9.1 Plasma technologies

###### 2.10.4.9.2 Photosynthesis

- 2.10.4.9.3 Bacterial or biological processes
- 2.10.4.9.4 Oxidation (biomimicry)
- 2.10.5 Production costs
- 2.10.6 Global hydrogen demand forecasts
- 2.10.7 Hydrogen Production in the United States

### **3 GREEN HYDROGEN PRODUCTION**

- 3.1 Overview
- 3.2 Green hydrogen projects
- 3.3 Motivation for use
- 3.4 Decarbonization
- 3.5 Comparative analysis
- 3.6 Role in energy transition
- 3.7 Renewable energy sources
- 3.8 SWOT analysis

### **4 ELECTROLYZER TECHNOLOGIES**

- 4.1 Introduction
- 4.2 Balance of Plant
- 4.3 Monopolar vs bipolar electrolyzers
- 4.4 Characteristics
- 4.5 Advantages and disadvantages
- 4.6 Electrolyzer market
  - 4.6.1 Market trends
  - 4.6.2 Market landscape
  - 4.6.3 Innovations
  - 4.6.4 Market opportunity
- 4.7 Alkaline water electrolyzers (AWE)
  - 4.7.1 Technology description
  - 4.7.2 AWE plant
  - 4.7.3 Components and materials
  - 4.7.4 Costs
  - 4.7.5 Companies
- 4.8 Anion exchange membrane electrolyzers (AEMEL)
  - 4.8.1 Technology description
  - 4.8.2 AEMEL plant
  - 4.8.3 Components and materials

- 4.8.4 Costs
- 4.8.5 Companies
- 4.9 Proton exchange membrane electrolyzers (PEMEL)
  - 4.9.1 Technology description
  - 4.9.2 PEMEL plant
  - 4.9.3 Components and materials
  - 4.9.4 Costs
  - 4.9.5 Companies
- 4.10 Solid oxide water electrolyzers (SOEC)
  - 4.10.1 Technology description
  - 4.10.2 SOEC plant
  - 4.10.3 Components and materials
  - 4.10.4 Costs
  - 4.10.5 Companies
- 4.11 Other types
  - 4.11.1 Overview
  - 4.11.2 CO<sub>2</sub> electrolysis
  - 4.11.3 Seawater electrolysis
  - 4.11.4 Protonic Ceramic Electrolyzers (PCE)
  - 4.11.5 Microbial Electrolysis Cells (MEC)
  - 4.11.6 Photoelectrochemical Cells (PEC)
  - 4.11.7 Companies
- 4.12 Costs
- 4.13 Water and land use for green hydrogen production
- 4.14 Electrolyzer manufacturing capacities

## **5 HYDROGEN STORAGE AND TRANSPORT**

- 5.1 Market overview
- 5.2 Hydrogen transport methods
  - 5.2.1 Pipeline transportation
  - 5.2.2 Road or rail transport
  - 5.2.3 Maritime transportation
  - 5.2.4 On-board-vehicle transport
- 5.3 Hydrogen compression, liquefaction, storage
  - 5.3.1 Solid storage
  - 5.3.2 Liquid storage on support
  - 5.3.3 Underground storage
- 5.4 Market players

## 6 HYDROGEN UTILIZATION

### 6.1 Hydrogen Fuel Cells

#### 6.2 Market overview

##### 6.2.1 PEM fuel cells (PEMFCs)

##### 6.2.2 Solid oxide fuel cells (SOFCs)

##### 6.2.3 Alternative fuel cells

#### 6.3 Alternative fuel production

##### 6.3.1 Solid Biofuels

##### 6.3.2 Liquid Biofuels

##### 6.3.3 Gaseous Biofuels

##### 6.3.4 Conventional Biofuels

##### 6.3.5 Advanced Biofuels

##### 6.3.6 Feedstocks

##### 6.3.7 Production of biodiesel and other biofuels

##### 6.3.8 Renewable diesel

##### 6.3.9 Biojet and sustainable aviation fuel (SAF)

##### 6.3.10 Electrofuels (E-fuels, power-to-gas/liquids/fuels)

###### 6.3.10.1 Hydrogen electrolysis

###### 6.3.10.2 eFuel production facilities, current and planned

#### 6.4 Hydrogen Vehicles

##### 6.4.1 Market overview

#### 6.5 Aviation

##### 6.5.1 Market overview

#### 6.6 Ammonia production

##### 6.6.1 Market overview

##### 6.6.2 Decarbonisation of ammonia production

##### 6.6.3 Green ammonia synthesis methods

###### 6.6.3.1 Haber-Bosch process

###### 6.6.3.2 Biological nitrogen fixation

###### 6.6.3.3 Electrochemical production

###### 6.6.3.4 Chemical looping processes

##### 6.6.4 Blue ammonia

###### 6.6.4.1 Blue ammonia projects

##### 6.6.5 Chemical energy storage

###### 6.6.5.1 Ammonia fuel cells

###### 6.6.5.2 Marine fuel

#### 6.7 Methanol production

- 6.8 Market overview
  - 6.8.1 Methanol-to gasoline technology
    - 6.8.1.1 Production processes
      - 6.8.1.1.1 Anaerobic digestion
      - 6.8.1.1.2 Biomass gasification
      - 6.8.1.1.3 Power to Methane
- 6.9 Steelmaking
  - 6.9.1 Market overview
  - 6.9.2 Comparative analysis
  - 6.9.3 Hydrogen Direct Reduced Iron (DRI)
- 6.10 Power & heat generation
  - 6.10.1 Market overview
    - 6.10.1.1 Power generation
    - 6.10.1.2 Heat Generation
- 6.11 Maritime
  - 6.11.1 Market overview
- 6.12 Fuel cell trains
  - 6.12.1 Market overview

## **7 COMPANY PROFILES**

- 7.1 Advanced Ionics
- 7.2 Aemetis, Inc.
- 7.3 Air Products
- 7.4 Aker Horizons ASA
- 7.5 Alchemr, Inc.
- 7.6 Arcadia eFuels
- 7.7 AquaHydrex
- 7.8 AREVA H2Gen
- 7.9 Asahi Kasei
- 7.10 Atmonia
- 7.11 Avantium
- 7.12 BASF
- 7.13 Battolyser Systems
- 7.14 Blastr Green Steel
- 7.15 Bloom Energy
- 7.16 Boson Energy Ltd.
- 7.17 BP
- 7.18 Carbon Sink LLC



- 7.19 Ceres Power Holdings plc
- 7.20 Chevron Corporation
- 7.21 Chiyoda Corporation
- 7.22 Cockerill Jingli Hydrogen
- 7.23 Convion Ltd.
- 7.24 Cummins, Inc.
- 7.25 C-Zero
- 7.26 Dimensional Energy
- 7.27 Domsjö Fabriker AB
- 7.28 Dynelectro ApS
- 7.29 ENEOS Corporation
- 7.30 Elcogen AS
- 7.31 Electric Hydrogen
- 7.32 Elogen H2
- 7.33 Enapter
- 7.34 Equatic
- 7.35 Ergosup
- 7.36 Everfuel A/S
- 7.37 EvolOH, Inc.
- 7.38 Flexens Oy AB
- 7.39 FuelCell Energy
- 7.40 FuelPositive Corp.
- 7.41 Fusion Fuel
- 7.42 Genvia
- 7.43 Graforce
- 7.44 GeoPura
- 7.45 Greenlyte Carbon Technologies
- 7.46 Green Fuel
- 7.47 Green Hydrogen Systems
- 7.48 Heliogen
- 7.49 Hitachi Zosen
- 7.50 Hoeller Electrolyzer
- 7.51 Honda
- 7.52 H2B2 Electrolysis Technologies Inc
- 7.53 H2Electro
- 7.54 H2Greem
- 7.55 H2 Green Steel
- 7.56 H2Pro, Ltd.
- 7.57 H2U Technologies

- 7.58 H2Vector Energy Technologies, S.L.
- 7.59 Hycamite TCD Technologies Oy
- 7.60 HydrogenPro
- 7.61 Hygenco
- 7.62 HydGene Renewables
- 7.63 HydrogenPro AS
- 7.64 Hydrogenera
- 7.65 Hydrogenics (part of Cummins)
- 7.66 Hysata
- 7.67 Hystar AS
- 7.68 IdunnH2
- 7.69 Infinium Electrofuels
- 7.70 Ionomr Innovations
- 7.71 ITM Power
- 7.72 Kobelco
- 7.73 Kyros Hydrogen Solutions GmbH
- 7.74 Lhyfe S.A.
- 7.75 LONGi Hydrogen
- 7.76 McPhy Energy SAS
- 7.77 Matteco
- 7.78 NEL Hydrogen
- 7.79 Newtrace
- 7.80 Next Hydrogen Solutions
- 7.81 Norsk e-Fuel AS
- 7.82 OCOchem
- 7.83 Ohmium International
- 7.84 1s1 Energy
- 7.85 Ossus Biorenewables
- 7.86 OXCCU Tech Ltd.
- 7.87 OxEon Energy
- 7.88 Parallel Carbon
- 7.89 Peregrine Hydrogen
- 7.90 Beijing PERIC Hydrogen Technologies Co.
- 7.91 Perpetual Next Technologies
- 7.92 Pherousa Green Shipping
- 7.93 Plagazi AB
- 7.94 Plenesys
- 7.95 Plug Power, Inc.
- 7.96 P2X Solutions Oy

- 7.97 QD-SOL Ltd.
- 7.98 Quantron AG
- 7.99 Qairos Energies
- 7.100 Resilient Energi
- 7.101 Ryze Hydrogen
- 7.102 SeeO2 Energy
- 7.103 Shell plc
- 7.104 Siemens Energy AG
- 7.105 SoHHytec SA
- 7.106 Sparc Hydrogen
- 7.107 Stargate Hydrogen
- 7.108 Storegga Geotechnologies Limited
- 7.109 SungreenH2
- 7.110 SunHydrogen
- 7.111 Syzygy Plasmonics
- 7.112 Thiozen
- 7.113 Thyssenkrupp Nucera
- 7.114 TFP Hydrogen Products
- 7.115 Tokuyama
- 7.116 Total Energies
- 7.117 Tractebel Engie
- 7.118 Travertine Technologies, Inc.
- 7.119 Tree Energy Solutions (TES-H2)
- 7.120 Twelve Corporation
- 7.121 Verdagy
- 7.122 Zhero

## **8 REFERENCES**

## List Of Tables

### LIST OF TABLES

- Table 1. Hydrogen colour shades, Technology, cost, and CO2 emissions.
- Table 2. Main applications of hydrogen.
- Table 3. Overview of hydrogen production methods.
- Table 4. National hydrogen initiatives.
- Table 5. Market challenges in the hydrogen economy and production technologies.
- Table 6. Green hydrogen industry developments 2020-2024.
- Table 7. Market map for hydrogen technology and production.
- Table 8. Industrial applications of hydrogen.
- Table 9. Hydrogen energy markets and applications.
- Table 10. Hydrogen production processes and stage of development.
- Table 11. Estimated costs of clean hydrogen production.
- Table 12. US Hydrogen Electrolyzer Capacities, current and planned, as of May 2023, by region.
- Table 13. Green hydrogen application markets.
- Table 14. Green hydrogen projects.
- Table 15. Comparison of hydrogen types
- Table 16. Characteristics of typical water electrolysis technologies
- Table 17. Key performance indicators for electrolyser technologies.
- Table 18. Advantages and disadvantages of water electrolysis technologies.
- Table 19. Advantages & limitations of AWE.
- Table 20. Key performance characteristics of AWE.
- Table 21. Companies in the AWE market.
- Table 22. Companies in the AMEL market.
- Table 23. Companies in the PEMEL market.
- Table 24. Companies in the SOEC market.
- Table 25. Companies developing other electrolyzer technologies.
- Table 26. Electrolyzer manufacturing capacities by technology .
- Table 27. Market overview-hydrogen storage and transport.
- Table 28. Summary of different methods of hydrogen transport.
- Table 29. Market players in hydrogen storage and transport.
- Table 30. Market overview hydrogen fuel cells-applications, market players and market challenges.
- Table 31. Categories and examples of solid biofuel.
- Table 32. Comparison of biofuels and e-fuels to fossil and electricity.
- Table 33. Classification of biomass feedstock.

Table 34. Biorefinery feedstocks.

Table 35. Feedstock conversion pathways.

Table 36. Biodiesel production techniques.

Table 37. Advantages and disadvantages of biojet fuel

Table 38. Production pathways for bio-jet fuel.

Table 39. Applications of e-fuels, by type.

Table 40. Overview of e-fuels.

Table 41. Benefits of e-fuels.

Table 42. eFuel production facilities, current and planned.

Table 43. Market overview for hydrogen vehicles-applications, market players and market challenges.

Table 44. Blue ammonia projects.

Table 45. Ammonia fuel cell technologies.

Table 46. Market overview of green ammonia in marine fuel.

Table 47. Summary of marine alternative fuels.

Table 48. Estimated costs for different types of ammonia.

Table 49. Comparison of biogas, biomethane and natural gas.

Table 50. Hydrogen-based steelmaking technologies.

Table 51. Comparison of green steel production technologies.

Table 52. Advantages and disadvantages of each potential hydrogen carrier.

## List Of Figures

### LIST OF FIGURES

- Figure 1. Hydrogen value chain.
- Figure 2. Current Annual H2 Production.
- Figure 3. Principle of a PEM electrolyser.
- Figure 4. Power-to-gas concept.
- Figure 5. Schematic of a fuel cell stack.
- Figure 6. High pressure electrolyser - 1 MW.
- Figure 7. Global hydrogen demand forecast.
- Figure 8. U.S. Hydrogen Production by Producer Type.
- Figure 9. Segmentation of regional hydrogen production capacities in the US.
- Figure 10. Current of planned installations of Electrolyzers over 1MW in the US.
- Figure 11. SWOT analysis: green hydrogen.
- Figure 12. Types of electrolysis technologies.
- Figure 13. Basic components of water electrolysers at different levels.
- Figure 14. Typical Balance of Plant including Gas processing.
- Figure 15. Schematic of alkaline water electrolysis working principle.
- Figure 16. Alkaline water electrolyzer.
- Figure 17. Typical system design and balance of plant for an alkaline electrolyser.
- Figure 18. Cost breakdown for 1 MW alkaline electrolyser, moving from full system, to membrane electrode assembly (MEA).
- Figure 19. Typical system design and balance of plant for an AEM electrolyser.
- Figure 20. Schematic of PEM water electrolysis working principle.
- Figure 21. Typical system design and balance of plant for a PEM electrolyser.
- Figure 22. Cost breakdown for a 1 MW PEM electrolyser, moving from full system, to stack, to CCM.
- Figure 23. Schematic of solid oxide water electrolysis working principle.
- Figure 24. Typical system design and balance of plant for a solid oxide electrolyser.
- Figure 25. Cost of green hydrogen production as a function of electrolyser deployment,
- Figure 26. Estimated necessary electrolyser manufacturing capacity (GW/year) to meet different installed capacity targets by 2050.
- Figure 27. Process steps in the production of electrofuels.
- Figure 28. Mapping storage technologies according to performance characteristics.
- Figure 29. Production process for green hydrogen.
- Figure 30. E-liquids production routes.
- Figure 31. Fischer-Tropsch liquid e-fuel products.
- Figure 32. Resources required for liquid e-fuel production.

- Figure 33. Levelized cost and fuel-switching CO<sub>2</sub> prices of e-fuels.
- Figure 34. Cost breakdown for e-fuels.
- Figure 35. Hydrogen fuel cell powered EV.
- Figure 36. Green ammonia production and use.
- Figure 37. Classification and process technology according to carbon emission in ammonia production.
- Figure 38. Schematic of the Haber Bosch ammonia synthesis reaction.
- Figure 39. Schematic of hydrogen production via steam methane reformation.
- Figure 40. Estimated production cost of green ammonia.
- Figure 41. Renewable Methanol Production Processes from Different Feedstocks.
- Figure 42. Production of biomethane through anaerobic digestion and upgrading.
- Figure 43. Production of biomethane through biomass gasification and methanation.
- Figure 44. Production of biomethane through the Power to methane process.
- Figure 45. Transition to hydrogen-based production.
- Figure 46. CO<sub>2</sub> emissions from steelmaking (tCO<sub>2</sub>/ton crude steel).
- Figure 47. Hydrogen Direct Reduced Iron (DRI) process.
- Figure 48. Three Gorges Hydrogen Boat No. 1.
- Figure 49. PESA hydrogen-powered shunting locomotive.
- Figure 50. Symbiotic™ technology process.
- Figure 51. Alchemr AEM electrolyzer cell.
- Figure 52. Domsj? process.
- Figure 53. Direct MCH® process.
- Figure 54. EL 2.1 AEM Electrolyser.
- Figure 55. Enapter – Anion Exchange Membrane (AEM) Water Electrolysis.
- Figure 56. FuelPositive system.
- Figure 57. Using electricity from solar power to produce green hydrogen.
- Figure 58. Left: a typical single-stage electrolyzer design, with a membrane separating the hydrogen and oxygen gasses. Right: the two-stage E-TAC process.
- Figure 59. Hystar PEM electrolyser.
- Figure 60. OCOchem's Carbon Flux Electrolyzer.
- Figure 61. CO<sub>2</sub> hydrogenation to jet fuel range hydrocarbons process.
- Figure 62. The Plagazi ® process.
- Figure 63. O12 Reactor.
- Figure 64. Sunglasses with lenses made from CO<sub>2</sub>-derived materials.
- Figure 65. CO<sub>2</sub> made car part.

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