

# United Kingdom Green Hydrogen Market By Production Method (Alkaline Water Electrolysis, Proton Exchange Membrane, and Solid Oxide Electrolysis), By Renewable Source (Wind, Solar PV, Others), By End Use (Power Generation, Automotive, Chemicals & Petrochemicals, Others), By Region, Competition Forecast & Opportunities, 2018-2028F

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## Abstracts

United Kingdom Green Hydrogen Market is anticipated to grow at a significant rate in the forecast period, 2024- 2028. Hydrogen is produced through electrolysis, where electricity is used to split water into hydrogen and oxygen - gas from this process is often referred to as green hydrogen or zero carbon hydrogen when the electricity comes from renewable sources. According to the United Kingdom Government, the UK reduced its power sector emissions by over 70 percent between 1990 and 2019 and generates more electricity from offshore wind than any other country. The most promising approach, 'green hydrogen,' electrolyzes water to separate its molecules into hydrogen and oxygen using renewable energy. This type of hydrogen is considered 'green' because its energy is derived from less expensive renewable resources. There are three main electrolysis technologies, each of which is at a distinct stage of development. Alkaline water (ALK) is the most fundamental and established technology with a market share of roughly 70% of the currently extremely modest green hydrogen market in the United Kingdom. It features cheap operating costs and long operational life. However, ALK processes must be continuously active to prevent damage to the manufacturing machinery. As per the Energy White Paper released by the Government of the United Kingdom, the UK will deploy and support CCUS technology and infrastructure, with USD 1 billion of support allocated up to 2025 and a commitment to set out details of a revenue mechanism to bring through early-stage private investment

in industrial carbon capture and hydrogen projects. The United Kingdom is actively seeking to collaborate with international partners to develop the green hydrogen market. The government has signed agreements with several European countries to explore cross-border hydrogen cooperation, which could lead to increased demand for United Kingdom Green Hydrogen.

The United Kingdom (U.K.) is set to become a global leader in the production and use of green hydrogen, with the government aiming to reach net-zero carbon emissions by 2050. Green hydrogen is a clean fuel source that can be produced using renewable energy sources, such as wind and solar power. The U.K. Green Hydrogen Market is projected to grow significantly over the next decade, with numerous initiatives and investments already underway to promote the adoption of this sustainable energy source. Moreover, The U.K. is actively seeking to collaborate with international partners to develop the green hydrogen market. The government has signed agreements with several European countries to explore cross-border hydrogen cooperation, which could lead to increased demand for U.K. green hydrogen.

The government's Ten Point Plan for a Green Industrial Revolution, released in November 2020, identified hydrogen as a key component of the country's decarbonization strategy. The plan sets out a target of 5 GW of low-carbon hydrogen production capacity by 2030, which would be enough to power over 3 million homes, as well as heavy-duty transport, industry, and power generation. To achieve this goal, the U.K. government has committed to investing USD 500 million in the development and deployment of low-carbon hydrogen production, transportation, and storage infrastructure. The funding will support the construction of new facilities and the repurposing of existing infrastructure, such as natural gas pipelines, for the transport of hydrogen. The U.K. has already made significant progress in the deployment of hydrogen technologies. In 2019, the world's first hydrogen-powered double-decker buses were launched in London, and the first hydrogen trains began operating in the country in 2020. The government has also announced plans to pilot hydrogen heating systems in homes and businesses.

### Growing demand for clean energy

Clean energy is becoming an increasingly important part of the global energy mix, as countries around the world seek to reduce their carbon emissions and mitigate the impacts of climate change. Green hydrogen, a fuel source produced using renewable energy, is emerging as a key solution to help meet this growing demand for clean energy. Green hydrogen is produced by using renewable energy sources, such as wind,

solar, and hydroelectric power, to split water molecules into hydrogen and oxygen. The resulting hydrogen can be used as a fuel source in a variety of applications, including transportation, heating, and electricity generation, without producing any harmful emissions. The demand for green hydrogen is growing rapidly, as more and more countries set ambitious targets for reducing their carbon emissions. The European Union, for example, has set a goal of becoming climate neutral by 2050, with hydrogen playing a key role in achieving this target.

### Rising Use of Green Hydrogen in the Automotive Sector

The automotive sector is one of the key areas where green hydrogen is expected to play a significant role in the coming years. Green hydrogen, produced using renewable energy sources, can be used as a fuel for fuel cell electric vehicles (FCEVs), which offer several benefits over traditional combustion engine vehicles. One of the main benefits of FCEVs is that they produce zero emissions when powered by green hydrogen. This contrasts with traditional combustion engine vehicles, which emit harmful pollutants into the atmosphere, contributing to air pollution and climate change. As governments around the world set increasingly ambitious targets for reducing carbon emissions, FCEVs are emerging as a key solution for reducing emissions in the transportation sector. In addition to their environmental benefits, FCEVs also offer several advantages over battery electric vehicles (BEVs). FCEVs have a longer range and can be refueled more quickly than BEVs, which require longer charging times. This makes FCEVs a more practical option for applications such as long-haul transportation, where range and refueling times are critical.

### Mergers & Acquisition's

To scale its green hydrogen business, which is replacing diesel-fueled generators and enabling zero-emissions energy for all purposes to create a more sustainable world, UK-based GeoPura has received USD39.53 million in investment from leading global industry players. The funding initiative was led by General Motors Ventures, the investment arm of the automaker, and co-led by Barclays Sustainable Impact Capital with participation from SWEN CP and Siemens Energy Ventures.

### Policy & Regulatory Landscape

The European Hydrogen Backbone initiative is made up of 31 energy

infrastructure operators, including Fluxys (Belgium), ONTRAS and OGE (Germany), National Grid (UK), and Gasunie (Netherlands). The vision of the EHB is for a climate-neutral Europe enabled by a competitive, liquid, pan-European renewable and low-carbon hydrogen market.

In Furtherance of the European Commission's objective to establish a 20.6 Mt renewable and low-carbon hydrogen market in Europe, the EHB envisions five pan-European hydrogen supply and import corridors emerging by 2030, connecting industrial clusters, ports, and hydrogen valleys to regions of abundant hydrogen supply. By 2040, this infrastructure would expand to roughly 53,000 km across all of Europe and be mostly based on repurposed natural gas infrastructure.

According to the Energy Security Strategy, which was published in April 2022, the UK has committed to using a twin-track approach to develop hydrogen, meaning both green and blue hydrogen will be pursued. However, there is growing emphasis on the former, as evidenced by its new 10GW low carbon hydrogen production capacity target for 2030, with 'at least' half coming from green hydrogen.

## Market Segmentation

United Kingdom (U.K.) Green Hydrogen Market is segmented into Production Method, Renewable Source, End-Use, Region, and Company. Based on Production Method, the market is divided into Alkaline Water Electrolysis, Proton Exchange Membrane, and Solid Oxide Electrolysis. Based on Renewable Source, the market is divided into Wind, Solar PV, and Others. Based on End-Use, the market is divided into Power Generation, Automotive, Chemicals & Petrochemicals, and Others. Based on Region, the market is segmented into Scotland, South-East, London, South-West, East-Anglia, Yorkshire & Humber, and East Midlands and Rest of the United Kingdom.

## Company Profiles

Geopura Ltd, Siemens Energy Limited, Statkraft UK Ltd, Levidian Nanosystems Limited, Octopus Energy Group Ltd., HIIROC Limited, ITM Power plc, Tevva Motors Ltd, Ballard Power Systems Europe A/S and Linde plc are some of the key players of United Kingdom Green Hydrogen Market.

## Report Scope:

In this report, United Kingdom Green Hydrogen Market has been segmented into the following categories, in addition to the industry trends, which have also been detailed below:

### United Kingdom Green Hydrogen Market, By Product Method:

Alkaline Water Electrolysis

Proton Exchange Membrane

Solid Oxide Electrolysis

### United Kingdom Green Hydrogen Market, By Renewable Source:

Wind

Solar PV

Others

### United Kingdom Green Hydrogen Market, By End-Use:

Power Generation

Automotive

Chemicals & Petrochemicals

Others

### United Kingdom Green Hydrogen Market, By Region:

Scotland

South-East

London

South-West

East-Anglia

Yorkshire & Humberside

East Midlands

Rest of United Kingdom

Competitive landscape

Company Profiles: Detailed analysis of the major companies in United Kingdom Green Hydrogen Market.

Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

## Contents

- 1. Product Overview
  - 1.1. Market Definition
  - 1.2. Scope of the Market
    - 1.2.1. Markets Covered
    - 1.2.2. Years Considered for Study
    - 1.2.3. Key Market Segmentations

## 2. RESEARCH METHODOLOGY

- 2.1. Objective of the Study
- 2.2. Baseline Methodology
- 2.3. Key Industry Partners
- 2.4. Major Association and Secondary Sources
- 2.5. Forecasting Methodology
- 2.6. Data Triangulation & Validation
- 2.7. Assumptions and Limitations

## 3. EXECUTIVE SUMMARY

- 3.1. Overview of the Market
- 3.2. Overview of Key Market Segmentations
- 3.3. Overview of Key Market Players
- 3.4. Overview of Key Regions/Countries
- 3.5. Overview of Market Drivers, Challenges, Trends

## 4. UNITED KINGDOM GREEN HYDROGEN MARKET OUTLOOK

- 4.1. Market Size & Forecast
  - 4.1.1. By Value
- 4.2. Market Share & Forecast
  - 4.2.1. By Production Method (Alkaline Water Electrolysis, Proton Exchange Membrane, and Solid Oxide Electrolysis)
  - 4.2.2. By Renewable Source (Wind, Solar PV, Others)
  - 4.2.3. By End-Use (Power Generation, Automotive, Chemicals & Petrochemicals, Others)
  - 4.2.4. By Region (Scotland, South-East, London, South-West, East-Anglia, Yorkshire & Humberside, East Midlands and Rest of United Kingdom)

- 4.2.5. By Company (2022)
- 4.3. Product Market Map

## **5. UNITED KINGDOM ALKALINE WATER ELECTROLYSIS MARKET OUTLOOK**

- 5.1. Market Size & Forecast
  - 5.1.1. By Value
- 5.2. Market Share & Forecast
  - 5.2.1. By Renewable Source
  - 5.2.2. By End-Use

## **6. UNITED KINGDOM PROTON EXCHANGE MEMBRANE MARKET OUTLOOK**

- 6.1. Market Size & Forecast
  - 6.1.1. By Value
- 6.2. Market Share & Forecast
  - 6.2.1. By Renewable Source
  - 6.2.2. By End-Use

## **7. UNITED KINGDOM SOLID OXIDE ELECTROLYSIS MARKET OUTLOOK**

- 7.1. Market Size & Forecast
  - 7.1.1. By Value
- 7.2. Market Share & Forecast
  - 7.2.1. By Renewable Source
  - 7.2.2. By End-Use

## **8. MARKET DYNAMICS**

- 8.1. Drivers
- 8.2. Challenges

## **9. MARKET TRENDS & DEVELOPMENTS**

- 9.1. Research & Development
- 9.2. Product launch
- 9.3. Merger & Acquisition

## **10. POLICY AND REGULATORY LANDSCAPE**



## **11. UNITED KINGDOM GREEN HYDROGEN MARKET OUTLOOK: SWOT ANALYSIS**

## **12. PORTER'S FIVE FORCES ANALYSIS**

## **13. PESTLE ANALYSIS**

## **14. COMPETITIVE LANDSCAPE**

- 14.1. Business Overview
- 14.2. Product Offerings
- 14.3. Recent Developments
- 14.4. Financials (In Case of Listed Companies)
- 14.5. Key Personnel
  - 14.5.1. Geopura Ltd
  - 14.5.2. Siemens Energy Limited
  - 14.5.3. Statkraft UK Ltd
  - 14.5.4. Levidian Nanosystems Limited
  - 14.5.5. Octopus Energy Group Ltd.
  - 14.5.6. HIIROC Limited
  - 14.5.7. ITM Power plc
  - 14.5.8. Tevva Motors Ltd
  - 14.5.9. Ballard Power Systems Europe A/S
  - 14.5.10. Linde plc

## **15. STRATEGIC RECOMMENDATIONS**

## **16. ABOUT US & DISCLAIMER**

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