Green Ammonia Market by Technology (Alkaline Water Electrolysis (AWE), Proton Exchange Membrane (PEM), SOE), End-Use Application (Transportation, Power Generation, Industrial Feedstock (Industrial, Fertilizers)), Region - Global Forecast & Trends to 2030

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Report description:

The green ammonia market is expected to grow from USD 0.3 billion in 2024 to USD 6.2 billion by 2030, with a CAGR of 66.0% during the forecast period. The development of a global hydrogen economy is driving the demand for green ammonia. As an efficient hydrogen carrier, green ammonia is crucial for transporting hydrogen over long distances and enabling its use in various applications, including power generation, transportation, and industrial processes.

"Solid oxide electrolysis technology segment to be the fastest-growing market from 2024 to 2030"

The green ammonia market is divided into three technological categories: alkaline water electrolysis, proton exchange membrane electrolysis, and solid oxide electrolysis. The increasing global need for green hydrogen is pushing the use of Solid Oxide Electrolysis Cell (SOEC) technology, which provides an effective technique for producing hydrogen from renewable sources. SOEC technology is more energy efficient than conventional electrolysis technologies, giving it a competitive advantage in the green ammonia industry. The scalability of SOEC systems enables both small-scale and large-scale applications, satisfying the green ammonia industry's different requirements.

"Industrial Feedstock, by end-use application, expected to be the largest market from 2024 to 2030"

The green ammonia market, by end-use application, is bifurcated into power generation, transportation and industrial feedstock. The industrial feedstocks segment is expected to be the largest market, followed by power generation during the forecast period. This dominance is because of the need for green fertilizers in agricultural industries. The growing emphasis on sustainability and decreasing carbon footprints in industrial operations fuels demand for green ammonia as a greener alternative to standard ammonia manufacturing methods. Governments are adopting rules and incentives to encourage industry to use green ammonia.

Green ammonia may be employed as a hydrogen carrier for energy storage, making it a flexible alternative for balancing supply and demand in renewable energy systems. Green ammonia is utilized in a variety of industrial applications, including fertilizers, chemicals, and medicines, where sustainability is increasingly important.

"Europe is expected to be the largest region in the green ammonia market."

Several European nations have made significant pledges to increase the proportion of renewable energy in their energy mix. The availability of wind and solar resources in Europe offers a solid foundation for the creation of green hydrogen, which is subsequently converted into green ammonia. The combination of green ammonia with renewable energy sources helps to stabilize the system and store extra energy. In addition, Europe has made major investments in the infrastructure required for green ammonia production, storage, and delivery. The construction of pipelines, terminals, and storage facilities improves the scalability and logistics of green ammonia, allowing it to be widely adopted throughout the area.

Breakdown of Primaries:

In-depth interviews have been conducted with a variety of key industry participants, subject matter experts, C-level executives of key market players, and industry consultants, among other experts, to obtain and verify critical qualitative and quantitative information, as well as assess future market prospects. The distribution of primary interviews is as follows:

By Company Type: Tier 1- 65%, Tier 2- 24%, and Tier 3- 11%

By Designation: C-Level- 30%, Director Level- 25%, and Others- 45%

By Region: North America - 25%, Europe - 25%, Asia Pacific - 30%, Middle East & Africa- 10% and South America - 10%

Note: Other designations include sales managers, marketing managers, product managers, and product engineers.

The tier of the companies is defined based on their total revenue as of 2023. Tier 1: USD 1 billion and above, Tier 2: From USD 500 million to USD 1 billion, and Tier 3: <USD 500 million.

The Green ammonia market is dominated by a few major players that have a wide regional presence. The leading players in the green ammonia market are Siemens Energy (Germany), ACME Group (India), ThyssenKrupp AG (Germany), Nel ASA (Norway), Iberdrola, S.A. (Spain), and Yara (Norway) among others. The major strategy adopted by the players includes new product launches, partnerships, collaboration, merger, and investments & expansions.

Research Coverage:

The report defines, describes, and forecasts the global green ammonia market by technology, capacity, end-use application, and region. It also offers a detailed qualitative and quantitative analysis of the market. The report comprehensively reviews the major market drivers, restraints, opportunities, and challenges. It also covers various important aspects of the market. These include an analysis of the competitive landscape, market dynamics, market estimates in terms of value, and future trends in the sustainable fuel market.

Key Benefits of Buying the Report

- Increasing emphasis on net zero emissions and supporting government regulations are just a few of the primary drivers propelling the green ammonia market. Regulatory and legislative uncertainties, as well as costly initial capital expenditure, limit the market's expansion. The ongoing energy shift to reduce carbon emissions is likely to provide attractive prospects for green ammonia market participants.
- Product Development/ Innovation: The green ammonia market is seeing substantial product development and innovation, driven by rising environmental concerns. Companies are investing in improved green ammonia manufacturing technology.
- Market Development: ThyssenKrupp AG has signed an engineering and supply contract with CF Industries to deliver a green hydrogen plant for the production of green ammonia at the Donaldsonville industrial complex in Louisiana. Under this deal, ThyssenKrupp AG will design and build a 20 MW hydrogen production unit using their alkaline water electrolysis technology, as well as all related utilities.
- Market Diversification: Siemens Energy collaborated with Fortescue Future Industries, a green hydrogen manufacturing company, and GeoPura, a provider of renewable energy, EV charging, and emission-free electricity, to create an ammonia cracker prototype designed to produce green hydrogen on an industrial scale, thereby addressing climate change and lowering carbon emissions. The prototype would use ammonia to generate 200 kg of hydrogen each day, enough to power around 5-10 hydrogen fuel cell electric buses.

-Competitive Assessment: In-depth analysis of market share, growth plans, and service offerings of top companies in the green ammonia industry, including Siemens Energy (Germany), ACME (India), ThyssenKrupp AG (Germany), Nel ASA (Norway), Iberdrola, S.A. (Spain), and Yara (Norway) among others.

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