Liquid Organic Hydrogen Carrier (LOHC) Dehydrogenation Plant Market: Growth, Share & Forecast to 2030

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The Business Research Company

LONDON, GREATER LONDON, UNITED KINGDOM, March 3, 2026 /EINPresswire.com/ -- "The liquid organic hydrogen carrier (LOHC) dehydrogenation plant market is emerging as a vital component of the growing hydrogen economy, playing a crucial role in hydrogen storage and transport. This market is witnessing dynamic growth driven by technological advancements and increasing demand for sustainable energy solutions. Let's explore the current market size, key factors fueling expansion, regional growth patterns, and upcoming trends shaping this industry.

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>
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Current Market Size and Future Growth Projections for the LOHC Dehydrogenation Plant Market

The LOHC dehydrogenation plant market has experienced rapid expansion in recent years. It is projected to increase from $1.01 billion in 2025 to $1.2 billion in 2026, reflecting a compound annual growth rate (CAGR) of 18.4%. This rise during the historical period has been fueled by the growth of hydrogen pilot projects, early acceptance of LOHC storage methods, improvements in catalytic reactor design, heightened interest in hydrogen transport technologies, and the development of hydrogen demonstration facilities.

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Looking ahead, the LOHC dehydrogenation plant market is expected to maintain strong momentum, reaching an estimated value of $2.38 billion by 2030 with a CAGR of 18.7%. This anticipated growth is supported by increased investment in hydrogen infrastructure, expansion of green hydrogen production, rising demand for hydrogen transportation over long distances, broader adoption of hydrogen across power generation and industrial applications, and ongoing enhancements in dehydrogenation process efficiency. Key trends during the forecast period include growth of large-scale plants, greater use of catalytic dehydrogenation technology, deeper integration into hydrogen supply chains, wider adoption of modular and scalable plant designs, and a stronger focus on improving thermal efficiency and catalyst performance.

Understanding the Role and Functionality of LOHC Dehydrogenation Plants
LOHC dehydrogenation plants are specialized industrial facilities that facilitate the extraction of hydrogen from hydrogen-rich organic liquids through controlled catalytic dehydrogenation reactions. These plants convert the carrier liquids back into their depleted forms, enabling safe and efficient hydrogen release. The system integrates reactors, heat management units, catalysts, and purification technologies to ensure continuous, reliable hydrogen production. Importantly, the carrier liquid can be recycled repeatedly, allowing for sustainable hydrogen storage and transport cycles.

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Rising Electricity Demand as a Key Driver for the LOHC Dehydrogenation Plant Market
The growing need for electricity is expected to significantly boost the LOHC dehydrogenation plant market. Urbanization, population growth, and increased use of energy-intensive devices in residential, commercial, and industrial sectors are contributing to higher power consumption. LOHC dehydrogenation plants help meet this demand by supplying a dependable, on-demand source of hydrogen-derived energy. The chemical energy stored in LOHC liquids is converted to electricity, supporting peak load management, enhancing energy security, and reducing dependence on intermittent energy sources.

For instance, in October 2024, the International Institute of Refrigeration reported that electricity demand could increase by 500 terawatt-hours (TWh) by 2030 and possibly reach up to 700 TWh by 2035. This projection is approximately 20% higher than previous estimates under the STEPS scenario, highlighting the pressing need for reliable energy solutions such as those offered by LOHC dehydrogenation plants.

Regional Outlook and Fastest Growing Market in the LOHC Dehydrogenation Plant Industry
In 2025, Europe held the largest share of the LOHC dehydrogenation plant market. However, the Asia-Pacific region is expected to experience the fastest growth during the forecast period. The market analysis spans key regions including Asia-Pacific, South East Asia, Western Europe,

Eastern Europe, North America, South America, the Middle East, and Africa, providing a comprehensive view of global market dynamics.

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