Hydrogen Technology Testing, Inspection and Certification (TIC) Market by Process (Generation, Storage, Transportation/Distribution), Service Type (Testing, Inspection, Certification), Testing Type, Application and Region - Global Forecast to 2029

Market Report | 2024-07-12 | 253 pages | MarketsandMarkets

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Report description:

The global hydrogen technology TIC was valued at USD 4.1 billion in 2024 and is projected to reach USD 9.2 billion by 2029; it is expected to register a CAGR of 17.8% during the forecast period. The growing demand for cleaner fuels, supportive government policies aimed at decarbonizing various sectors, and the expansion of hydrogen infrastructure such as refueling stations, pipelines, and storage facilities are key drivers of the Hydrogen Technology TIC market. Additionally, the inherent risks and strict regulations in hydrogen processes, along with technological advancements crucial for green hydrogen development, are further catalyzing market growth.

"The long-distance segment of hydrogen technology TIC market for transporation/distribution is expected to have significantly large share during the forecast period."
With the global shift from fossil fuel-based energy sources, hydrogen energy has emerged as a key enabler of low carbon solutions across many industries. Expanding market though establishing new networks for hydrogen infrastructure. pipelines are preferred means of transportation since they are cost effective and less hazardous to the environment since they transport hydrogen which is a green energy source from source that may be far from the demand point. Hydrogen pipeline project mainly focuses on targets of IES 2023 that stated the overall pipeline length of hydrogen to be 19,000 km up to 2030. It has led to combined efforts among governments, industries and investors to develop a good hydrogen infrastructure which comprises of research development spending, more development of efficient and cheap methods of hydrogen production and development of hydrogen refueling facilities for fuel cell vehicles and industrial usage. These infrastructures also help enhance energy security

while generating employment and spurring economic development Altogether, hydrogen remains the perfect solution to fight climate change and lower GHG emissions on the planet.

"The green hydrogen segment is likely to grow at the highest CAGR during the forecast period"
Demand for green hydrogen, which is 100% emission-free and produced from renewable energy via the electrolysis of water, will increase with countries placing a stronger focus on net zero carbon emissions. As per IEA 2023 Report, the share of clean hydrogen (blue + green) will reach upto 30% of the total hydrogen demand in 2030. This technology uses electricity generated through sources such as wind, hydropower, or solar to split water into hydrogen and oxygen. It produces nothing but pure-play green hydrogen emissions in the process. However, this is the most expensive hydrogen production method at about USD 5-6 per kilogram. Still challenges remain - namely high equipment costs and scarce availability of clean electricity, which makes large-scale production unrealistic for now - if countries green their own hydrogen transition from fields.

"The europe is likely to grow at the significant CAGR during the forecast period."
The countries of the European continent are improving to different extents in terms of creating new policy norms in the sphere of energetic For the EU, the target is to reduce the emission of greenhouse gases by at least 40% by the year 2030. Being one of the oldest producers in the oil and gas sector, Europe is gradually transitioning to the use of fuel cells, which are powered by residential and commercial projects and initiatives involving national governments. The actual number of FCEVs in Europe 2600 units and more than 1000 of these are in Germany by the end of 2020. Of these, the FCEVs are mainly light duty passenger vehicles, with approximately 130 fuel cell buses. Europe also leads in the development of fuel cell trains where commercialisation is also being realized. The Fuel Cells and Hydrogen Joint Undertaking initiative is the special concern working on the R&D element in the fuel cell and hydrogen. Moreover, the expansion of the fuel cell industry is also expected to be encouraged by the increased adoption of electric cars, and therefore the hydrogen market in this region.

Breakdown of primaries
The study contains insights from various industry experts, ranging from component suppliers to Tier 1 companies and OEMs. The break-up of the primaries is as follows:

- By Company Type - Tier 1 - 50%, Tier 2 - 30%, Tier 3 - 20%
- By Designation- C-level Executives - 35%, Directors - 30%, Others - 35%
- By Region- Asia Pacific - 40%, Europe - 25%, , North America - 20%, RoW - 15%

The hydrogen technology TIC market is dominated by a few globally established players such as SGS SA (Switzerland), Bureau Veritas (France), Intertek Group plc (UK), DEKRA (Germany), TUV SUD (Germany), DNV GL (Norway), TUV RHEINLAND (Germany), Applus+ (Spain), TUV NORD Group (Germany), Element Materials Technology (UK), and UL LLC (US). The study includes an in-depth competitive analysis of these key players in the hydrogen technology TIC market, with their company profiles, recent developments, and key market strategies.

Research Coverage:
The report segments the hydrogen technology TIC market and forecasts its size by process, service type, testing type, and application. The report also discusses the drivers, restraints, opportunities, and challenges pertaining to the market. It gives a detailed view of the market across four main regions-North America, Europe, Asia Pacific, and RoW. Supply chain analysis has been included in the report, along with the key players and their competitive analysis in the hydrogen technology TIC ecosystem.

Key Benefits to Buy the Report:
- Analysis of key drivers (increasing shift towards low and zero-carbon renewable fuels, Development of low-weight storage tanks for transportation, Government-led initiatives for developing hydrogen econom), restraint (impacts of hydrogen projects on water supply and land use, availability of substitutes), opportunity (demand of risk management due the risk of high flammability

associated with hydrogen, emergence of hydrogen fuel cells for the automotive sector), challenges (high hydrogen generation, storage, and transportation costs, integration of hydrogen into natural gas networks)
-Service Development/Innovation: Detailed insights on upcoming technologies, research and development activities, and new product launches in the hydrogen technology TIC market.
-Market Development: Comprehensive information about lucrative markets - the report analyses the hydrogen technology TIC market across varied regions
-Market Diversification: Exhaustive information about new products and services, untapped geographies, recent developments, and investments in the hydrogen technology TIC market.
-Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players like SGS SA (Switzerland), Bureau Veritas (France), Intertek Group plc (UK), DEKRA (Germany), TUV SUD (Germany), DNV GL (Norway), TUV RHEINLAND (Germany), Applus+ (Spain), TUV NORD Group (Germany), Element Materials Technology (UK), and UL LLC (US) among others in the hydrogen technology TIC market.

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