North America Hydrogen Compressor - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 110 pages | Mordor Intelligence

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Report description:

The North America Hydrogen Compressor Market is expected to register a CAGR of greater than 4% during the forecast period.

The market was negatively impacted by COVID-19 in 2020. Presently the market has now reached pre-pandemic levels.

Key Highlights
- Over the medium term, the increasing investments and demand for hydrogen from end-user industries are expected to drive the market's growth.
- On the other hand, the high cost of hydrogen compressors is expected to hamper the growth of the North American hydrogen compressor market during the forecast period.
- Nevertheless, in the forecast period, emerging hydrogen sources and technological advancements will likely create lucrative growth opportunities for the solar PV inverters market.
- The United States dominates the market and will likely witness the highest CAGR during the forecast period. This growth is attributed to the country's increasing investments and supportive government policies for hydrogen generation.

North America Hydrogen Compressor Market Trends

Single-stage Segment to Witness Significant Growth

- Single-stage compressors are ideal for moving large amounts of gas (primarily hydrogen) when high inlet pressures are

available. They are widely used to rapidly fill vehicle tanks, move gas between storage vessels, and empty high-pressure tube trailers.
- Single-stage hydrogen compressors are well suited for applications with relatively low differential pressures, such as transport, rail car, and marine unloading. These compressors are expected to witness significant growth during the forecast period. They require relatively less maintenance and offer continuous service in applications such as refineries, petrochemical plants, NH3 and methanol services, natural gas processing, coal gasification, and power stations.
- Single-stage hydrogen compressors are designed for high-temperature applications (above 500 F). They ensure reliable performance and offer efficiencies up to 90%. The compression ratio for single-stage hydrogen compressors is limited to approximately 8:1.
- In 2021, Globally, 522 hydrogen projects were announced to be developed between 2021 and 2030, of which 43 are giga-scale green hydrogen projects. North American region has significant hydrogen activity with about 67 hydrogen projects. North American countries have been invested in finding non-carbon-intensive alternatives for industrial and transportation usage to strengthen the local value chain. This is expected to witness significant opportunities for the North American hydrogen compressor market.
- Therefore, based on the above-mentioned factors, the single-stage segment is expected to witness significant growth in the North American hydrogen compressor market during the forecast period.

United States to Dominate the Market

- The United States is expected to be the promising market for fuel cells in the coming years because of the favorable government policies in the country.
- The United States is one of the world's largest and fastest-growing hydrogen compressor markets. The country has witnessed significant growth in its chemical, oil, gas, and manufacturing sectors in recent years.
- Hydrogen centrifugal compressors are used in refining and petrochemical industries such as ethylene plants for cracked-gas compression and refrigeration services. Due to ethylene and benzene production shortages, the country has been investing to increase its ethylene and benzene production capacity.
- The United States Energy Information Administration (EIA) reported the net hydrogen input in oil refining as 76,918 thousand barrels, recording a growth of 2.3% compared to 2020. Hydrogen is also used extensively to generate ammonia and methanol and provide industrial heat for chemicals and industrial applications.
- In September 2022, Linde announced plans to build a 35-megawatt PEM (Proton Exchange Membrane) electrolyzer to produce green hydrogen in Niagara Falls, New York. The new plant will be the largest electrolyzer installed by Linde globally and will more than double Linde's green liquid hydrogen production capacity in the United States.
- In August 2022, National Renewable Energy Laboratory (NREL) announced the collaboration with Toyota Motor North America (Toyota) through a cooperative research and development agreement to build, install, and evaluate a one-megawatt (MW) proton exchange membrane (PEM) fuel cell power generation system at NREL's Flatirons Campus in Colorado, United States. New research demonstrates large-scale power production using hydrogen fuel cells in an integrated energy system. These projects are expected to witness significant opportunities for the North American hydrogen compressor market.
- Therefore, based on the above-mentioned factors, the United States is expected to dominate the North American hydrogen compressor market during the forecast period.

North America Hydrogen Compressor Industry Overview

The North American hydrogen compressor market is moderately fragmented in nature. Some of the major players in the market (in no particular order) include Ariel Corporation, Burckhardt Compression AG, Sundyne Corp., Atlas Copco Group, and Ingersoll

Rand Inc.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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